

The Hoover Dam Documents

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*Second Edition of "The Hoover Dam Power
and Water Contracts and
Related Data" 1933*

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Resolved, That the publication entitled "The Hoover Dam Power and Water Contracts and Related Data", published in 1933 by the United States Department of the Interior, shall be brought up to date and printed, with illustrations, as a House document.

June 8, 1948.

Preface

TO THE SECOND EDITION

The first edition of *The Hoover Dam Contracts* was published in February 1933. It brought together the laws, contracts, and related data from the execution of the Colorado River compact in 1922 to the date of publication. Since that date there have been important changes in the statutes; the contracts have been amended and new ones added; and the Mexican water treaty has been ratified.

The present volume brings up to date the basic treaty provisions, laws, decisions, regulations, and contracts which constitute the controls under which the Boulder Canyon project now functions, together with related data.

Preceding the texts of these documents are introductory notes giving the historical background of the instruments.

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NOVEMBER 1948.

Introduction

This volume brings together the Colorado River documents which collectively constitute the "Law of the River." They appear herein as appendixes, following after an explanatory text which summarizes their background and history. This text has been divided into 14 chapters, corresponding to as many phases of the subject matter, and the appendixes have been grouped in 14 "parts" which correspond to the similarly captioned chapters.

In brief, the ground covered is as follows:

The Chronological Background

Chapter I, and the corresponding part I of the appendixes, are concerned with the historical background of the Boulder Canyon project, in very brief form, with citations to the material available elsewhere.

The Compact

Chapter II summarizes the history of the Colorado River Compact. Part II of the appendixes contains the text of the compact and of the Federal and State statutes which authorized and ratified it.

Chapter III narrates the events intervening between the execution of the Colorado River Compact in 1922 and the enactment of the Boulder Canyon Project Act in 1928. Part III of the appendixes contains the texts of some of the documents of this period.

The Project Act

Chapter IV is a summary and analysis of the Boulder Canyon Project Act. The text of the act appears in part IV of the appendixes.

Chapter V narrates the steps taken by the Federal and State Governments to comply with the conditions precedent to the effectiveness of the Project Act. These related primarily to the conversion of the compact from a seven-State to a six-State agreement, with enactment by California of a statute limiting her use of water, followed by a Presidential proclamation. The texts of these measures appear in part V of the appendixes, with necessary cross references to part II.

Down to this point it is possible to deal with the material in more or less chronological order. But with the passage of the Project Act, the trail divides, because a number of activities, with respect to power, water, construction, planning of certain related projects on the river, litigation, international negotiations, etc., necessarily went forward concurrently. Each of these topics is taken up in a chapter or group of chapters, the organization of the material being controlled by subject matter rather than chronology. Thus:

Power

Chapter VI deals with the Hoover Dam power contracts of 1930, which were required by the Project Act as a condition precedent to the making of appropriations and the commencement of construction. Part VI of the appendixes includes only the general regulations of 1930-31 and a tabulation of the contracts made thereunder, these regulations and contracts having been superseded by those made in 1941 (ch. VIII, *infra*) under the Boulder Canyon Project Adjustment Act.

Chapter VII summarizes briefly the compliance with the conditions precedent to construction, followed by the appropriations for and the construction of, Hoover Dam and power plant. Part VII of the appendixes tabulates certain material relating thereto.

Chapter VIII deals with the Boulder Canyon Project Adjustment Act of 1940, under which the Hoover Dam rates were readjusted. Part VIII of the appendixes contains the text of that statute and related material.

Chapter IX summarizes the Hoover Dam power contracts made under the Adjustment Act, and part IX of the appendixes contains the texts of the 1941 regulations and contracts.

Water

Chapter X deals with the Hoover Dam water-storage contracts (other than the All-American Canal repayment contracts, which are treated separately in ch. XI). Part X of the appendixes contains the texts of the corresponding contracts.

Chapter XI is concerned with the All-American Canal and the repayment contracts relating thereto, and part XI of the appendixes collects the statutes and the texts of the contracts on that subject.

Related Projects

Chapter XII refers briefly to the projects which are more or less directly related to the Boulder Canyon project, some of which are integrated with it by statute, others by contract, and all of which utilize waters stored by Hoover Dam. These are Parker Dam, the Colorado River aqueduct and its San Diego branch, Headgate Rock Dam, the Palo Verde weir, the Colorado River front work, the Yuma and Gila projects, Davis Dam, the Morelos Dam in Mexico, and the "comprehensive plan of development." Part XII of the appendixes contains the statutes, principal contracts, and related material, bearing on these projects.

Litigation

Chapter XIII summarizes the four Colorado River cases which have been brought in the Supreme Court, and part XIII of the appendixes contains the texts of the opinions in these cases.

International Problems

Chapter XIV is concerned with the Mexican water treaty, and part XIV of the appendixes brings together the treaty documents and related material.

The net effect of these compacts, statutes, treaties, orders, regulations, and contracts has been to impose upon the use of the Colorado River system certain controls which are in part Federal, in part State, and in part international, and which distinguish it from any other river system.

Acknowledgment

The texts of the Federal contracts printed in the appendixes were made available by the Bureau of Reclamation. The authors desire to express their appreciation to Secretary of the Interior Julius A. Krug, Commissioner of Reclamation Michael W. Straus, and the members of their staffs for these and other courtesies.

R. L. W.
N. E.

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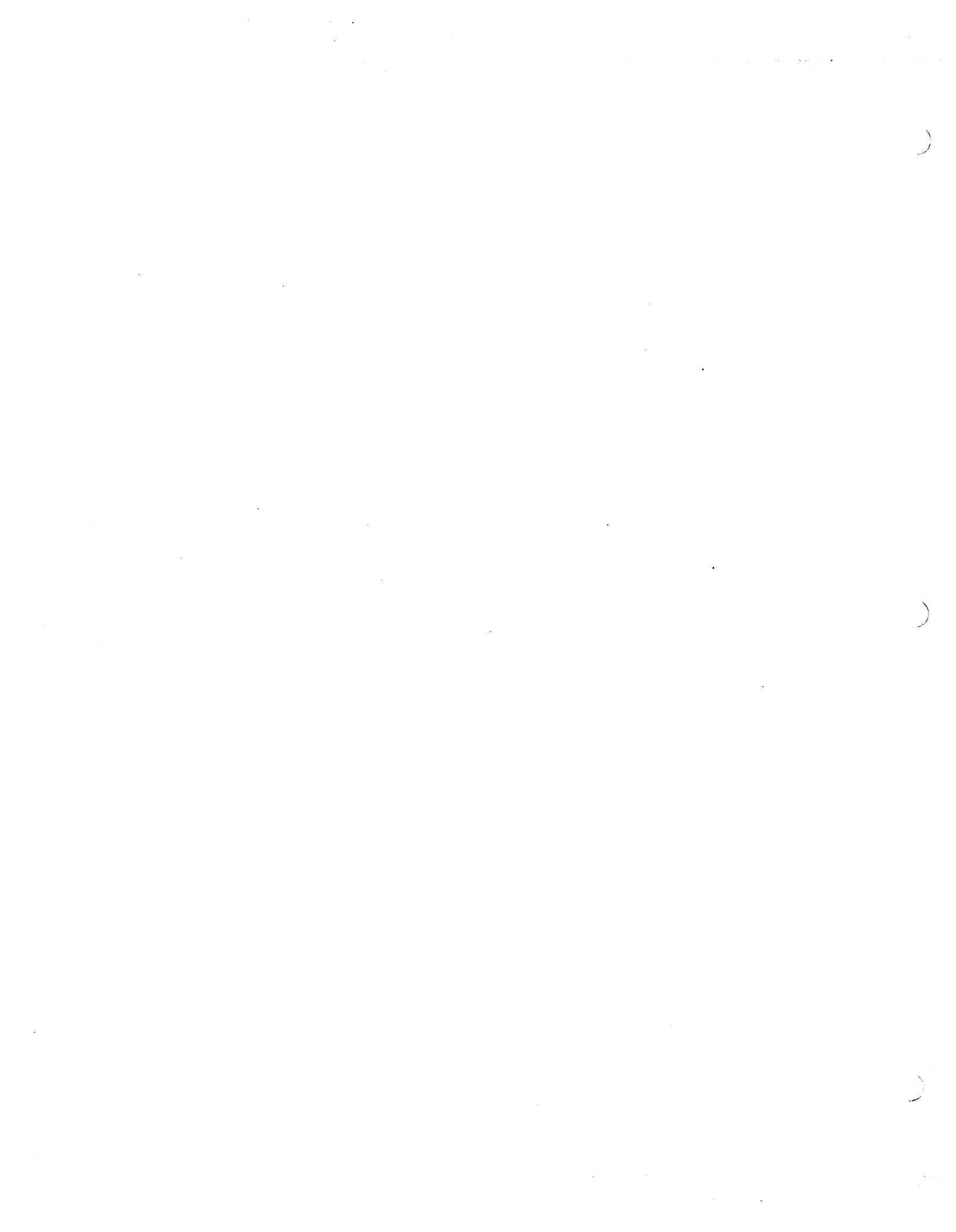
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Chapter I

HISTORICAL BACKGROUND OF THE BOULDER CANYON PROJECT

A. The Scope of the Boulder Canyon Project and Related Projects

The lower Colorado River, in its present stage of development, is controlled by Hoover Dam, at Black Canyon, 325 miles above the upper Mexican boundary, and its waters are impounded or diverted at seven other dams below Hoover. In order, from north to south, they are:

(1) Davis Dam,¹ 67 miles below Hoover Dam. This structure, under construction, will reregulate the discharges from Hoover Dam, and is one of the works contemplated by the Mexican water treaty.²

(2) Parker Dam³ (88 miles below Davis), impounding Lake Havasu, the diversion reservoir of the Metropolitan Water District's Colorado River aqueduct.⁴

(3) Headgate Rock Dam⁵ (14 miles below Parker), a diversion structure for the Colorado River Indian Reservation, Arizona.

(4) Palo Verde Weir⁶ (43 miles below Headgate Rock Dam), the diversion structure for the Palo Verde Irrigation District, California.

(5) Imperial Dam⁷ (90 miles below the Palo Verde Weir and 22 miles above the upper Mexican boundary), the diversion structure for the All-American Canal in California, and the Gila Canal⁸ in Arizona.

(6) Laguna Dam⁹ (5 miles below Imperial Dam) constructed in 1909 to divert water for the Yuma project, Arizona.

(7) Morelos Dam¹⁰ (in Mexico, about 1 mile south of the upper boundary, with its eastern abutment in Arizona). This structure,

¹ See ch. XII (A).

² See ch. XIV; appendix 1405.

³ See ch. XII (B).

⁴ See ch. XII (C).

⁵ See ch. XII (E).

⁶ See ch. XII (G).

⁷ See ch. XI.

⁸ See ch. XII (H).

⁹ See ch. XII (I).

¹⁰ See ch. XIV; appendixes 1408, 1409.

authorized by the Mexican water treaty, will divert water allotted Mexico by the treaty.

In addition, the Alamo Dam,¹¹ authorized but not constructed, on the Bill Williams River just above the margin of Lake Havasu, will control floods discharged into that reservoir.

Of these works, Hoover Dam (with its power plant) and Imperial Dam and the All-American Canal were authorized by the Boulder Canyon Project Act. All of the others, save Laguna Dam (built in 1909), were built or authorized after passage of the project act, although the diversions which they serve were in most cases initiated prior thereto and were originally served by other means.¹² All of these structures are affected in different degrees by the Boulder Canyon Project Act and the Colorado River Compact.

The historical background of the two basic documents, the compact and the project act, is summarized very briefly below, under captions which correspond more or less to the declared subject matter¹³ of the project act: Navigation, flood control, irrigation, "storage and the delivery of the stored waters for reclamation and other uses exclusively within the United States," and the incidental generation of electric energy, all subject to the Colorado River Compact.

B. Navigation

The Colorado River was navigated in the sixteenth century by several Spanish parties of exploration.¹⁴ After a long interval the delta area was navigated and mapped by British and American explorers during the first half of the nineteenth century. Between 1852 and 1877 there was active navigation by a dozen or more vessels, in the trade between California ports and Yuma, cargoes being transhipped at the mouth of the river. The famous exploration by Lieutenant Ives, in the *Explorer*, belongs to this period.¹⁵ This commercial business virtually disappeared when the Southern Pacific Railroad reached Yuma in 1877. The delta portion of the river was dried up by irrigation diversions at intervals after 1901. Navigation from Yuma south was interrupted by the shift of the river's outlet to Volcano Lake in 1909, and from Yuma north was cut off by construction of Laguna Dam in the same year. By the last decade of

¹¹ See ch. XII (D).

¹² See summary in ch. I (D). For the current status of these projects, see "The Colorado River," H. Doc. 419, 80th Cong., 1st sess. (interim report of the Secretary of the Interior), p. 164, et seq.

¹³ Sec. 1 of the act of December 21, 1928 (45 Stat. 1057).

¹⁴ Kleinsorge, "The Boulder Canyon Project" (1941), pp. 15-19; Sykes, "The Colorado Delta" (1937), pp. 2-13; Congressional Record, December 8, 1922, pp. 294, et seq.; First Annual Report of the Reclamation Service, H. Doc. 79, 57th Cong., 2d sess., p. 121.

¹⁵ Sykes, op. cit., pp. 13-34.

the nineteenth century, "the delta south of the international boundary had once more become almost a *terra incognita*."¹⁶

However, before commercial navigation disappeared, the navigability of the river to a point near Fort Callville, above the future site of Hoover Dam, had been established,¹⁷ and the river had been an artery of trade and commerce for an important, if brief, period.¹⁸ This history was to become significant when the constitutional bases for the Boulder Canyon Project Act were subsequently attacked.¹⁹

C. Flood Control

The peculiar character of the flood-control problem on the lower Colorado River was stated as follows in 1922:²⁰

Owing to the gradual upbuilding of its deltaic bed and banks the flood menace from the Colorado River is an increasing and ever-recurring problem of great importance.

The Gulf of California formerly extended northwestward to a point a few miles above the town of Indio, about 144 miles from the present head of the gulf. The Colorado River, emptying into the gulf a short distance south of the present international boundary, carried its heavy load of silt into the gulf for centuries, gradually building up a great delta cone entirely across the gulf and cutting off its northern end, which remains as a great depression from which most of the water has been evaporated, leaving in its bottom the Salton Sea of 300 square miles, with its surface about 250 feet below sea level.

The river flowing over its delta cone steadily deposits silt in its channel and by overflow on its immediate banks, so that it gradually builds up its channel and its banks and forms a ridge growing higher and higher until the stream becomes so unstable that it breaks its banks in the high-water period and follows some other course. In this manner the stream has in past centuries swung back and forth over its delta, until this exists as a broad, flat ridge between the gulf and the Salton Sea, about 30 feet above sea level, and on the summit of this has formed a small lake, called Volcano Lake, into which the river flows at present, the water then finding its way to the southward into the gulf.

The direct distance from Andrade on the Colorado River, where it reaches Mexico, to the head of the gulf is about 75 miles, and the distance to the margin of Salton Sea is but little more. As the latter is about 250 feet lower than the gulf, the strong tendency to flow in that direction needs no demonstration. This, coupled with the inevitable necessity for such an alluvial stream to leave its channel at intervals, constitutes the menace of the lands lying about Salton Sea, called the Imperial Valley. As there is no escape of water from Salton Sea except

¹⁶ Sykes, op. cit., p. 34.

¹⁷ See the interesting tabulation of "Vessels employed in the river and sea service," in Sykes, op. cit., pp. 32-34; also First Annual Report of the Reclamation Service, supra, note 14.

¹⁸ For a tabulation of acts of Congress, State and Territorial legislatures, departmental reports, and other historical references to navigation on the Colorado River, see appendix A to the brief for the Secretary of the Interior, *Arizona v. California*, et al. (283 U. S. 423, 1931).

¹⁹ See *Arizona v. California*, 283 U. S. 423 (1931).

²⁰ "Problems of Imperial Valley and Vicinity," S. Doc. 142, 67th Cong., 2d sess. (1922), pp. 7-8.

by evaporation, the river flowing into this sea would, unless diverted, gradually fill it to sea level or above and submerge the cultivated land and the towns of Imperial Valley, nearly all of which are below sea level. Any floodwaters that overflow the bank to the north must therefore without fail be restrained and not allowed to flow northward into Salton Sea. This is now prevented by a large levee, north to Volcano Lake, extending eastward and connecting with high land near Andrade. This levee is in Mexico and its maintenance is complicated thereby.

In 1905 the river scoured out the channel of the Imperial Canal and turned its entire volume into the Salton Basin, eroding a deep gorge and raising the level of Salton Sea. It submerged the salt works and forced the removal of the main line of the Southern Pacific Railroad. At great difficulty and expense, after several unsuccessful attempts, the river was returned to its old channel in February 1907.²¹

D. Irrigation

Prior to enactment of the Boulder Canyon Project Act, irrigation had been developed on the lower portion of the main stream of the Colorado, primarily by private enterprise, to a point where the unregulated flow had been completely utilized during periods of low water; and further expansion, either in the lower basin or the upper basin, was dependent upon construction of storage works such as Hoover Dam.

The history of irrigation projects dependent upon the waters of the Colorado River below Boulder Canyon is summarized in the report of the Senate Committee on Irrigation and Reclamation on the Swing-Johnson bill²² and the Fall-Davis report of 1922,²³ extracts from which are reprinted in appendix 103.

The status of irrigation on the lower Colorado River prior to the construction of Hoover Dam and the All-American Canal was reviewed as follows in a memorandum by E. B. Debler, of the Bureau of Reclamation, December 9, 1927:²⁴

²¹ For a graphic description of the struggle to maintain the American-built levee system in Mexico, and of flood crises in 1914, 1918, 1919, and 1925, see the report of the Senate Committee on Irrigation and Reclamation (S. Repr. 592, 70th Cong.) on the Swing-Johnson bill (S. 728, 70th Cong.), pp. 18-20.

²² S. Repr. 592, 70th Cong., 1st sess.

²³ "Problems of Imperial Valley and Vicinity," S. Doc. 142, 67th Cong., 2d sess. (1922), p. 47 et seq.

²⁴ Mr. Debler's memorandum was referred to in a statement by Hon. Ward Bannister, reprinted in the Congressional Record during debate on the Boulder Canyon Project Act (Congressional Record, Dec. 7, 1928, pp. 242-243). Its text has been furnished here through the kindness of the Bureau of Reclamation. The legal conclusions stated therein, and in quotations from other sources throughout this volume, do not necessarily coincide with the views of the organizations which have furnished copies nor with those of the authors of this book.

DENVER, COLO., December 9, 1927.

MEMORANDUM ON WATER RIGHTS ON LOWER COLORADO RIVER

(By E. B. Debler)

The rights for diversion of Colorado river waters below Boulder Canyon reservoir and which have been initiated in one form or other for the irrigation of the valley lands adjacent to the river may be divided into three general classes, as follows:

Indian Rights

By an act of Congress approved March 3, 1865 (U. S. Stat. L., vol. 13, p. 559), Indian reservations were created as follows:

Locality	Irrigable Area
Camp Mohave.....	2,000 acres more or less.
Chemehuevis Valley.....	7,000 acres.
Parker Valley.....	110,000 acres.
Yuma Valley, Calif., side.....	15,000 acres.
Yuma Valley, Ariz., side, Cocopah.....	Part of the Yuma project, small.

With the exception of the lands on the Yuma project, the irrigation development on the above-mentioned Indian lands is, up to this time, negligible, being limited to a small amount of pumping on the Parker project. If we accept the decision in the *Winters case* (207 U. S. 564) as applicable in the instant situation, it would appear that the water rights for these Indian lands when developed will be prior to any other water rights now in use on the lower Colorado, as no other rights were exercised prior to the time that these reservations were created. The development in the upper States was also negligible at the time of the setting aside of these reservation rights.

Diversion rights created by acts of Congress

Section 25 of the act of Congress approved April 21, 1904 (33 Stat. 189), authorized the Secretary of the Interior to divert the waters of the Colorado river for the Yuma and the Colorado River Indian reservation projects. With respect to the latter project, this act of Congress reinforces the right that may have accrued by the setting aside of the Indian reservation. An act of Congress approved February 15, 1911 (U. S. Stat. L., vol. 36, p. 909), authorized the Chuca-walla Development Company to build a dam across the Colorado river at or near the mouth of Pyramid Canyon, Arizona. The plan contemplated the irrigation of a large area in Chuca-walla valley. No work has been done on this project looking toward construction and the feasibility of the project is rather doubtful, so that the project may for the present be neglected. The material rights conveyed by acts of Congress are, therefore, limited to the Yuma project having a present estimated irrigable area of 108,000 acres.

Appropriation Rights

The predecessors of the present Imperial Irrigation District initiated water rights for this project by notices filed at the county offices and with the state engineer at various times from May 16, 1895, to April 25, 1899, in each case for the amount of 10,000 second-feet. The earliest activity which might well be claimed by the Imperial district as a basis for the priority of its water rights, was the organization by Mr. C. R. Rockwood and others of the Colorado River Irrigation Company in 1892. This company made surveys for delivering Colorado river water into California practically along the lines followed in the construction

for the Imperial irrigation district. While this work was antedated by a similar plan worked out in 1859 by San Diego parties, the long interval between the time of that plan and of the actual construction would no doubt preclude any effort to relate the two. Actual construction appears to have been undertaken about 1898 or 1899 with the first deliveries of water being made to Mexican and Californian lands in 1901.

On October 23, 1890, filing was made by E. M. Sanford for diversion at Yuma of 1,000,000 miner's inches for lands in the present Yuma project, and in the following year a similar filing by him for 1,500,000 miner's inches. Two smaller filings were later made in the same vicinity. For the Yuma project, notices of proposed diversions were posted and placed on record in the county recorder's office under date of July 10 and July 13, 1905, for the diversion of 3,000 second-feet on the Arizona side of the Laguna dam, and 6,000 second-feet on the California side of the same dam.

The United States purchased, for the benefit of the Yuma project, the property and rights of a number of old canals constructed at various times since 1891. The extent to which these companies planned to develop the Yuma valley is not definitely known but it may safely be presumed that in view of the large filing rights initiated, one or more of these, singly or in combination, no doubt contemplated the irrigation of at least all of the valley lands on the Arizona side comprising about 50,000 acres.

The Palo Verde irrigation district, comprising the irrigable lands in Palo Verde valley centering around Blythe, California, with an irrigable area of 79,000 acres, was formerly the Blythe Rancho, with a large part purchased by Samuel Blythe from the United States government under the Swamp and Overflow Act in 1856. On July 17, 1877, Thomas H. Blythe posted notice for the diversion of 95,000 miner's inches at Black Point on the Colorado river. Subsequently and up to 1911, various additional notices were posted and filings made by Mr. Blythe and his successors in interest to the Blythe Rancho lands, for diversions from Colorado river in amounts up to 300,000 miner's inches.

In the late 70's the first attempt was made to irrigate these lands by diversions from Colorado river and the present development is an outgrowth of the improvement and extension of the first attempts at irrigation. Of the irrigable area of 79,000 acres, about 45,000 acres are now irrigated.

Rights acquired by beneficial use without formal notices of record

The Cotton Land Company in 1910 constructed 19½ miles of canal with a capacity of 100 second-feet for the irrigation of lands in Mohave valley opposite Needles, California. The United States Indian Service in 1913 and 1914 attempted the reclamation of a small area in the same locality. It is believed that these works are all now inactive on account of continued difficulties in maintaining diversions.

In view of the lack of an adjudication covering the lower Colorado river, it is of course impossible to state the full extent and significance of all of the rights initiated on this section of the river. Any attempt to definitely set out the exact extent and priority of the various rights is complicated by the various bases on which such rights could be founded, such as appropriation rights under applicable laws of Arizona and California; riparian rights which are fully recognized in California but not in Arizona; Congressional grants for diversion of waters from a stream so far considered navigable; and rights acquired by beneficial use without formal record.

With present conditions of development, the situation is accurately portrayed by the status of the water supply available for diversion by the Imperial canal having a capacity at this time of about 6,500 second-feet. The water supply available for this canal is measured by the discharge of Colorado river at Yuma and has been less than desired for diversion by the Imperial canal for the following periods when the flows were as indicated:

Year	Period of Shortages		Average flow at Yuma S. F.	Minimum flow at Yuma S. F.
	Period	No. of days		
1915.....	Sept. 1-Oct. 3.....	32	4,400	2,700
1919.....	Aug. 25-Sept. 18.....	24	4,000	2,300
1924.....	Aug. 4-Oct. 16.....	73	3,300	1,200
1928.....	Aug. 26-Sept. 30.....	35	4,600	2,440

In the latter years during these periods the Imperial irrigation district has been diverting the entire flow of the Colorado river by utilizing a temporary sand and brush dam across the entire channel of the river below its heading. There was, of course, a very acute water shortage in 1924 and a very extensive crop damage on account of shortage of water. The Imperial valley irrigation system has been in operation 26 years. The fact that there were no shortages up to 1915 and that the frequency of shortages is increasing, would appear attributable to the double effect of the expansion of irrigation facilities on the Lower Colorado river for the utilization of rights long ago initiated, and the depletion of summer flow of the river thru increasing irrigation diversions in the upper basin.

What the situation will be in the near future, unless storage is provided between the two basins so as to make the lower basin independent of the upper basin with regard to irrigation supplies, can only be conjectured. Of the irrigable area of 515,000 acres in the Imperial irrigation district of California, there are at present approximately 400,000 acres irrigated. There are roughly 300,000 acres now irrigated in Mexico and it is definitely known that a much larger area can easily be irrigated. A greater demand on the Yuma project is only awaiting renewed activity in the development of the Yuma Mesa lands, of which but a little over 1,000 acres is now irrigated out of an irrigable area of 44,000 acres. The heavy cost of maintaining the irrigation and levee systems in the Palo Verde valley has delayed the development of this valley, but active steps in providing drainage and better flood protection in the valley, in recent years, should be followed by an immediate expansion of this area.

The Office of Indian Affairs has for a number of years been desirous of developing the Parker valley with an irrigable area of 110,000 acres. With the development of this valley and of the extension of the irrigated areas in Palo Verde and Yuma valleys and on Yuma Mesa, all or most of which are believed to be prior to right to the Imperial Valley diversion, the waters remaining available for diversion by the Imperial canal will be further reduced with more frequent and more intense shortages of irrigation supplies, particularly in August, when the requirements for water are at a near maximum. The Imperial Valley irrigation rights are in turn undoubtedly prior to a very large part of the rights which have been developed in the upper basin States.

E. Storage Investigations

The need for storage on the Colorado River was recognized at a very early date, but for various reasons its accomplishment was a protracted task.

While a number of early proposals had been made for storage on the Colorado River, particularly by J. W. Powell²⁵ and Elwood Mead,²⁶ a reconnaissance report by A. P. Davis and J. B. Lippincott²⁷ covering examination made in 1901-02 was apparently the first to specifically recommend study of the Boulder Canyon site. This report was also notable for its proposal for a general plan of investigation below Boulder Canyon, corresponding strikingly with the developments which have now been built or authorized. This program envisioned (1) a dam at the Yuma site (later built as Laguna Dam); (2) diversion of water at Black Point for the Blythe area in California (now part of the Palo Verde project); (3) diversion at Headgate Rock above Parker, into canals covering the Colorado River Indian Reservation (later constructed as the Headgate Rock Dam); (4) a dam at the Williams River for storage purpose, and river regulation (substantially the site of Parker Dam now constructed); (5) diversion at Bullshead with canal into lands of the Needles Valley, and investigation of Bullshead for a high dam for storage purposes (approximately the site at which Davis Dam is under construction, but for different purposes); (6) the investigation of reservoir sites at Las Vegas Wash and the Virgin River (substantially the Black Canyon and Boulder Canyon areas). The Reclamation Service suggested, however, the advisability of investigating reservoir possibilities on the Colorado River in Colorado, Utah, and Wyoming—

above the point where streams carrying high quantities of silt enter, so that we may have knowledge of such storage possibilities as exist where provisions do not have to be made for silt.

This was the first reference to the coming contest between advocates of upper-basin versus lower-basin storage.

This early report was followed by others, increasingly specific. For several years, the Reclamation Service concentrated its attention on upper-basin storage,²⁸ returning to the consideration of Boulder Canyon in 1917, when Louis C. Hill and Homer Hamlin called attention to

²⁵ Maj. J. W. Powell. "Exploration of the Colorado River of the West and its Tributaries," U. S. Govt. Printing Office, 1875. Cf. Report of the Secretary of the Interior, November 19, 1902.

²⁶ Letter of Elwood Mead, State engineer of Wyoming, to Capt. E. M. Chittenden, in H. Doc. 141, 55th Cong., 2d sess. (1897).

²⁷ First annual report of the Reclamation Service (1902), H. Doc. 79, 57th Cong., 1st sess., p. 106, et seq.

²⁸ Report of the Reclamation Service for 1914 (p. 71).

the feasibility of a dam 500 to 600 feet high at that site.²⁹ Some of the notable reports are cited in the margin.³⁰ Three, particularly, affected the scope of the Boulder Canyon Project Act: (1) The report of the All-American Canal Board in 1918,³¹ of which Dr. Elwood Mead was chairman, and which specifically recommended legislation which would combine authorization for construction of storage at Boulder Canyon with authorization for construction of an All-American Canal to serve Imperial Valley; (2) the Fall-Davis report of 1922,³² which supplied the basic data on which the negotiation of the Colorado River Compact

²⁹ Cf. letter of Louis C. Hill to George W. Malone, State engineer of Nevada, September 20, 1928.

³⁰ Cf. "Report on the Utilization of the Waters of Colorado River for Irrigation and its Relation to the Imperial Valley, California," by C. E. Grunsky, dated June 30, 1907, addressed to Hon. James R. Garfield, Secretary of the Interior (S. Doc. 103, 65th Cong., 1st sess.).

"Colorado River and Its Utilization," by E. C. LaRue (Water Supply Paper No. 395, U. S. Geological Survey).

"The Lower Colorado and the Salton Basin," by C. E. Grunsky (Transactions American Society of Civil Engineers, vol. LIX, pp. 1-51, December 1907).

"Irrigation and River Control in the Colorado River Delta," by H. T. Cory (Transactions American Society of Civil Engineers, vol. LXXVI, pp. 1204-1453, December 1913).

Unpublished compilation of material on the Colorado River, by John T. Whistler, of the United States Reclamation Service, and on file in the Reclamation Service offices at Washington, Denver, and Yuma (1914).

Eighteenth annual report of the U. S. Reclamation Service, Department of the Interior, 1918-19.

"Preliminary Report on Imperial Valley and Vicinity," A. P. Davis, committee print, published for Committee on Irrigation of Arid Lands, House, 66th Cong., 3d sess. (1921).

"Problems of Imperial Valley and Vicinity," S. Doc. 142, 67th Cong., 2d sess. (1922).

"Report on the Problems of the Colorado River Basin," F. E. Weymouth, Department of the Interior, in manuscript, 8 vols. (1924).

"Water Power and Flood Control of Colorado River below Green River, Utah" (Water Supply Paper No. 556, U. S. Geological Survey, 1925).

Cf. hearings before the Committees on Irrigation and Reclamation on S. 728, H. R. 5773, 70th Cong., 1st sess. (1928).

"Colorado River Development," Geo. W. Malone, S. Doc. 186, 70th Cong., 2d sess. (1928). The latter contains a "Chronology of Colorado River Investigations" (p. 40-41).

See also the references collected in Sykes, "The Colorado Delta" (1937), p. 177 et seq.

For a "selected classified list of references and sources relating to utilization of lower Colorado River" see report of the American Section of the International Water Commission, H. Doc. 359, 71st Cong., 2d sess. (1930), appendix 3, p. 97, by Frank Adams, consulting engineer. Cf. bibliography in "Colorado River and the Boulder Canyon Project," (Colorado River Commission of California, 1931), p. 357 et seq.

³¹ See appendix 101.

³² See appendix 103.

proceeded, and which also recommended Boulder Canyon storage and the construction of the All-American Canal; and (3) the Weymouth report of 1924,³³ which, in far more detail, spelled out the Boulder Canyon project in substantially the form accepted in the Boulder Canyon Project Act. These three reports are referred to again, *infra*.

F. Proposals for Power Development

(1) *Early plans.*—The power potentialities of the various storage sites on the Colorado River were recognized at a very early date,³⁴ and their development was actively promoted by public and private agencies.³⁵ Nevertheless no main stream dams for the generation of power had been constructed in the lower basin prior to Hoover Dam.

(2) *Effect of power on selection of Black Canyon site.*—The selection of the Black Canyon-Boulder Canyon site for the construction of flood control and irrigation storage works was largely dictated by considerations involving the marketing of power to finance the structure. The report by Senator Johnson of the Senate Committee on Irrigation

³³ "Report on the Problems of the Colorado River Basin," by F. E. Weymouth (in manuscript, 8 volumes), U. S. Bureau of Reclamation, 1924.

³⁴ James B. Girard, of Phoenix, was granted a preliminary permit by the Interior Department for the development of a power project on the Colorado River near the outlet of Diamond Creek in the State of Arizona. See first annual report of the Federal Power Commission (1921), pp. 32, 118. It was finally canceled following passage of the Boulder Canyon Project Act. See thirteenth annual report of the Federal Power Commission (1933), pp. 227-28.

On November 5, 1909, Henry C. Schmidt filed an application with the Territory of Arizona for a permit to develop power at Boulder Canyon. A permit was issued by the Secretary of the Interior November 10, 1913, under the act of February 15, 1901 (31 Stat. 790), contemplating a dam to be erected at the mouth of Boulder Canyon, about 125 feet high, to generate approximately 40,000 horsepower. The project was to be financed with French capital, which became unavailable because of the First World War. The permit remained alive until October 24, 1921, when it was revoked.

In April 1910, the Santa Fe Railway initiated studies to determine the feasibility of generating power on the Colorado River by means of generators mounted on vessels anchored in the river channel. The idea was abandoned. More serious studies were undertaken between 1914 and 1917, looking to the electrification of the railroad between Winslow and Seligman. This involved investigation of nine dam sites, of which Boulder Canyon and Diamond Creek were the most favorably considered. Studies were made of a project for a dam 200 to 250 feet high. By 1919, however, changing conditions had caused the investigation to be indefinitely suspended.

³⁵ See testimony of E. F. Scattergood, chief electrical engineer and manager, bureau of power and light, city of Los Angeles: Hearings of Senate Committee on Irrigation and Reclamation on S. Res. 320, 68th Cong., 2d sess., p. 66, et seq. (1925); Geo. W. Malone, "Compilation of Data on the Colorado River," and "Boulder Canyon Hydroelectric and Steam Costs Compared," both in hearings of the House Committee on Irrigation and Reclamation on H. R. 5773, 70th Cong., 1st sess. (1928), appendix, pp. 543, 552.

and Reclamation³⁶ on the fourth Swing-Johnson bill said, as to the choice of this site:

BOULDER (OR BLACK) CANYON PROPER LOCATION FOR DAM

The overwhelming weight of opinion favors the Boulder or Black Canyon site. These two sites are close together and are frequently termed the upper and lower Boulder Canyon sites. A dam at either site will inundate practically the same territory. Natural conditions at this point are extremely favorable for the construction of a great dam at a minimum of cost. An immense natural reservoir site is here available. A development at this point will fully and adequately serve all purposes—flood control, reclamation, and power. It is the nearest available site to the power market; an important element from a business or financial standpoint.

As said by Mr. Hoover, Secretary of Commerce:

“ . . . I can conceive the development of probably 15 different dams on the Colorado River, the securing of 6,000,000 or 7,000,000 horsepower; but the only place where there is an economic market for power today, at least of any consequence, is in Southern California, the economical distance for the most of such dams being too remote for that market. No doubt markets will grow in time so as to warrant the construction of dams all up and down the river. We have to consider here the problem of financing; that in the erection of a dam—or of any works, for that matter—we must make such recovery as we can on the cost, and therefore we must find an immediate market for power. For that reason it seems to be that logic drives us as near to the power market as possible, and that it therefore takes us down into the lower canyon (hearings on S. 320, 68th Cong., 2d sess., p. 601).”

(3) *Applications prior to the Federal Water Power Act.*—Prior to enactment of the Federal Water Power Act in 1920,³⁷ development of water power on the public domain was controlled by the Interior Department. Under the enabling act³⁸ which authorized the admission of Arizona to the Union, all power sites on the river in that State were withdrawn. A number of applications for permits or rights of way within the basin had been filed, and were pending when Congress authorized³⁹ negotiation of the Colorado River Compact, a year after passage of the Water Power Act.

(4) *The Federal Water Power Act.*—The power project applications theretofore filed with the Department of the Interior were transferred to the jurisdiction of the Federal Power Commission. By 1921 the Commission had received 11 applications for permits. With few exceptions, the Federal Power Commission, upon passage of the act authorizing negotiation of the compact, suspended action on all applications for permits and licenses in the basin, at first on its own motion,⁴⁰ and finally

³⁶ S. Rept. No. 592, 70th Cong., 1st sess. (1928).

³⁷ Act of June 10, 1920 (41 Stat. 1063).

³⁸ Act of June 20, 1910 (36 Stat. 557, 570).

³⁹ Act of August 19, 1921 (42 Stat. 172).

⁴⁰ See third annual report of the Federal Power Commission (1923), p. 61; fourth annual report (1924), p. 91; fifth annual report (1925), p. 112; sixth annual report (1926), p. 72.

by congressional direction,⁴¹ until the Boulder Canyon Project Act should become effective. By the latter date, the Federal Power Commission had on file 45 separate applications, contemplating installations aggregating 17,000,000 horsepower.⁴²

While the Colorado River Compact and the Boulder Canyon Project Act were negotiated in the foreground of a very active competition among public and private agencies for the right to develop the power sites on the Colorado River, and many of these issues are reflected in the provisions of those documents, there is very little actual power development to record in the historical background of the compact and the Project Act.

G. The All-American Canal

The historical background of the All-American Canal is outlined in more detail in chapter XI. It was summarized in the report of the Senate Committee on Irrigation and Reclamation (S. Rept. No. 592, 70th Cong., 1928), as follows (p. 13):

HOW THE PROJECT TOOK FORM

As early as January 12, 1907, President Roosevelt submitted to Congress a message upon the problems of the lower Colorado River,⁴³ in which he outlined and urged a development which will become a reality upon the completion of the project here authorized. Thus, he said:

"The construction work required would be: The main canal, some 60 miles in length, from Laguna Dam into the Imperial Valley; the repair and partial construction of the present distribution system in the valley and its extension to other lands mainly public; diversion dams and distribution systems in the Colorado River Valley, and provision for supplementing the natural flow of the river by means of such storage reservoirs as may be necessary."

Proceeding in his message, he said:

"The Imperial Valley will never have a safe and adequate supply of water until the main canal extends from the Laguna Dam. At each end this dam is connected with rock bluffs and provides a permanent heading founded on rock for the diversion of the water. Any works built below this point would not be safe from destruction by floods and cannot be depended upon for a permanent and reliable supply of water to the valley."

On February 16, 1918, by contract between the Secretary of the Interior and the Imperial irrigation district provision was made for the creation of an all-American canal board to consist of one member named by the Reclamation Service, one by the district and one by the University of California, such board to investigate the feasibility of an all-American canal. The engineers selected

⁴¹ Act of March 4, 1927 (44 Stat. 1456), act of December 21, 1928 (45 Stat. 1062, sec. 6), act of March 1, 1929 (45 Stat. 1446).

⁴² See tabulation in Congressional Record, December 10, 1928, pp. 328-329; Kleinsorge, op. cit., p. 54; tenth annual report of the Federal Power Commission (1930), p. 9.

⁴³ Congressional Record, 59th Cong., 2d sess., pp. 1028-1029; cf. act of April 28, 1904 (32 Stat. 591); memorandum of Commissioner A. P. Davis to Secretary Lane, May 9, 1914.

were Dr. Elwood Mead, now Commissioner of Reclamation; W. W. Schlecht; and C. E. Grunsky.⁴⁴

This board reported on July 22, 1919, recommending an all-American canal.⁴⁵

H. Legislative Proposals Prior to the Boulder Canyon Project Act

By 1919 bills to implement the All-American Canal program, and in some cases to provide for storage as recommended in various surveys,⁴⁶ had begun to appear in Congress.

(1) *The Kettner bills.*—On February 3, 1919, Mr. Kettner, of California, introduced a bill⁴⁷ to authorize and direct the Secretary of War to make a preliminary examination of the Colorado River with a view to control of its floods in accordance with provisions of existing law relating to control of the Mississippi River and the Sacramento River. This bill was reported favorably by the House Committee on Flood Control on February 27, 1919.⁴⁸

On the same day, February 3, 1919, Representative Hayden, of Arizona, introduced a somewhat similar bill.⁴⁹

On February 7, 1919, Representative Randolph introduced a bill⁵⁰ to provide for flood control on the Colorado River. This bill was not reported out of committee.

The Secretary of the Interior subsequently suggested that legislation authorizing the Secretary of War to carry on such an investigation would duplicate the work of the Reclamation Bureau and recommended legislation authorizing the Secretary of the Interior to make the necessary investigation.⁵¹

On February 18, 1919, Mr. Kettner introduced a bill⁵² which followed the general lines of the suggestion of the Secretary of the Interior.

On May 19, 1919, Representative Hayden introduced a bill⁵³ authorizing a preliminary examination to be made of the Colorado River with a view to controlling the floodwaters thereof.

⁴⁴ Kleinsorge, op. cit., p. 29; Kelly, "The Colorado River Problem." 88 Transactions of the American Society of Civil Engineers 352 (1925).

⁴⁵ See appendix 101 herein. For full text, see *The All-American Canal: Report of the All-American Canal Board*, Government Printing Office, 1920.

⁴⁶ The more important investigations and reports are cited under ch. I (E).

In 1914 a plan was seriously proposed for damming the Colorado River at Black Canyon by blasting in the canyon walls. S. Doc. 142, 67th Cong., 2d sess., "Problems of Imperial Valley and Vicinity," p. 15, et seq.

⁴⁷ H. R. 15585 (65th Cong., 3d sess.).

⁴⁸ H. Rept. No. 1149 (65th Cong., 3d sess.).

⁴⁹ H. R. 15611 (65th Cong., 3d sess.).

⁵⁰ H. R. 15777 (65th Cong., 3d sess.).

⁵¹ Unpublished memorandum of the Secretary of the Interior.

⁵² H. R. 16023 (65th Cong., 3d sess.).

⁵³ H. R. 460 (66th Cong., 1st sess.).

On the same date Congressman Randall, of California, introduced a bill ⁵⁴ to provide for flood control on the Colorado River.

The Randall bill was the first to propose authorization for storage on the Colorado River. It would have authorized a series of dams in the Grand Canyon and along the tributaries of the Colorado to store, regulate, and control waters of the river to insure a water supply at all times for lands within the United States, and the generation, transmission, and sale of electric energy.

On May 27, 1919, Mr. Kettner introduced a bill ⁵⁵ authorizing and directing the Secretary of War to cause a survey to be made of the Colorado River with a view to controlling the floodwaters of that stream.

On June 17, 1919, Mr. Kettner introduced a bill ⁵⁶ (popularly called the first Kettner bill, but in fact preceded by a number of Colorado River measures by Mr. Kettner) which would have authorized the construction of an All-American Canal. It made no provision for storage. On July 3, 1919, Secretary of the Interior Lane reported favorably on this bill. Extensive hearings were held,⁵⁷ but the bill did not come to a vote.

On August 14, 1919, Congressman Randall introduced a bill,⁵⁸ which would have authorized issuance of bonds and utilization of the proceeds to construct dams, reservoirs, ditches, pipe lines, electric-transmission lines, and generating plants, etc., not particularly described, subject to the limitation that before making any surveys the Secretary must receive binding offers for at least half of the electric power to be generated, at a price not less than \$20 per kilowatt-year, and for a period of not less than 30 nor more than 50 years, and subject to the further limitation that the cost of the power installation should not exceed \$150 per kilowatt.

This bill was referred to the Committee on Ways and Means on August 14, 1919, and no further action was taken.

The Secretary of the Interior reported favorably on this bill, saying in the course of his report:

There are a number of bills before Congress touching the uses and the conservation of the waters of the Colorado River. I suggest that all these bills be gathered in to one committee, which shall have power to investigate the whole matter and to make a report to the House.⁵⁹

⁵⁴ H. R. 555 (66th Cong., 1st sess.).

⁵⁵ H. R. 3475 (66th Cong., 1st sess.).

⁵⁶ H. R. 6044 (66th Cong., 1st sess.).

⁵⁷ Hearings of House Committee on Irrigation and Reclamation on H. R. 6044 (66th Cong., 1st sess.): All-American Canal for Imperial and Coachella Valleys.

⁵⁸ H. R. 8472 (66th Cong., 1st sess.).

⁵⁹ Unpublished.

On December 30, 1919, Congressman Randall introduced a revised bill,⁶⁰ reflecting the suggestion of the Secretary of the Interior's report. The bill received no action.

On January 7, 1920, Congressman Kettner introduced a bill,⁶¹ popularly called the second Kettner bill, or the second All-American Canal bill. This measure included provision for storage, authorizing the Secretary of the Interior to—

construct such storage reservoirs and other works as in his judgment are necessary to provide an adequate supply of water for the successful irrigation of such lands.

The bill was not enacted.

(2) *The Kinkaid Act* (appendix 102).—On May 18, 1920, the Kinkaid Act⁶² was approved. It authorized and directed the Secretary of the Interior to make an examination of the Imperial Valley, and to report on its condition and possible irrigation development. A total of \$400,000 was provided for this work, in part by Federal appropriations, and in part by local contributions.⁶³

(3) *The Fall Davis report* (appendix 103).—The investigation authorized by the Kinkaid Act was made, and a formal report was submitted to Congress on February 28, 1922.⁶⁴

This report, *Problems of Imperial Valley and Vicinity*, sometimes referred to as the "Fall-Davis report," and sometimes simply as "Senate Document 142," was notable for its recommendations for construction of the All-American Canal and a storage reservoir at or near Boulder Canyon, setting at rest the engineering controversy as to whether storage should be provided first in the upper or the lower basin.⁶⁵ It also provided a comprehensive appraisal of the irrigation potentialities and water requirements of both basins.⁶⁶ This report, which became available during the negotiation of the Colorado River compact, supplied much of the data on which the negotiations proceeded.

⁶⁰ H. R. 9627 (66th Cong., 1st sess.), a revision of H. R. 8472 (same session).

⁶¹ H. R. 11553 (66th Cong., 2d sess.). See Congressional Record, vol. 59, pt. 2, p. 1204.

⁶² 41 Stat. 600.

⁶³ H. Rept. No. 918 (70th Cong., 1st sess., 1928), "The Boulder Canyon Project," pp. 9, 10.

⁶⁴ S. Doc. 142 (67th Cong., 2d sess.), "Problems of Imperial Valley and Vicinity," (1922).

⁶⁵ A resolution adopted by the "League of the Southwest" at Salt Lake City August 25-27, 1920, recommended development of the "upper reaches of the river." Cf. report of Delph Carpenter, Colorado River Commissioner of Colorado (appendix 210 herein).

⁶⁶ See Ch. II (B) *infra*.

Its effect on the Commission, as to the choice of storage sites, was reflected by Mr. Hoover, testifying on June 21, 1922, before the House Committee on Irrigation of Arid Lands:⁶⁷

Although there may be many views as to secondary steps and development, they can be neglected at the present time. However, without the Commission having gone onto any particular record in the matter, I think all of the members of the Commission are in agreement that the first step is the construction of a large storage dam somewhere in the neighborhood of Boulder Canyon. There may be some questions of foundations that may shift the site of that dam 15 or 20 miles. I believe the great majority of engineering and public view does not question that this is the first step.

Reasons for coming to this conclusion are, first, the immediate importance of control of flood flow, the large and cheap storage provided at this site, and the probability of an early development of a power market. The location of the dam at or near Boulder Canyon, as against projected dams farther up the river, has been disputed by some, but inasmuch as Boulder Canyon is some 150 miles nearer to a power market, and as the sale of power will be ultimately necessary in order to establish a substratum to finance the operation, that reason alone would seem convincing as to the location of the dam at that point.

This narrative has brought us, in general chronological order, to the period of overlap between the two forces that were now at work in the shaping of legislation: those aimed at the construction of an All-American Canal and a storage dam in Boulder or Black Canyons, and those aimed at securing some sort of reservation of water for the upper basin, via interstate compact, before such works should proceed. By the date of submission of the Fall-Davis report in 1922, work on the Colorado River compact was well under way, and it is now necessary to retrace a few years to pick up the thread of that narrative.

⁶⁷ Hearings on H. R. 11449 (67th Cong., 2d sess., 1922), p. 53.

Chapter II

THE COLORADO RIVER COMPACT

A. Background of the Compact

(1) *Necessity for an interstate agreement.*—Storage on the Colorado River was essential not only for the flood protection and development of the lower basin, but in order to enable the junior appropriations in the upper basin to develop, the unregulated flow of the river having been appropriated by senior appropriators in the lower basin.¹ However, the upper-basin States faced the possibility that water conserved by storage would be put to use in the lower basin more rapidly than the upper-basin States could utilize the normal flow, thereby reestablishing the condition they sought to avoid.²

In general, two methods were open for the protection of the upper basin: a Supreme Court suit predicated on the doctrine of equitable apportionment, as distinguished from the doctrine of priority of appropriation irrespective of State lines,³ or, in the alternative, an interstate compact cutting across the doctrine of appropriation and reserving water against its operation.

Interstate compacts had been utilized for the settlement of controversies involving boundaries, fisheries, criminal jurisdiction, etc.,⁴ but had never been used for the allocation of waters of an interstate stream.⁵

In the following pages are traced the steps by which the Colorado River States reached their decision to attempt an interstate compact in this field. These preliminary discussions took place under the shadow of the case of *Wyoming v. Colorado*,⁶ then at issue in the

¹ See memorandum of E. B. Debler, quoted in ch. I (D), supra; memorandum of Ward Bannister, counsel for city of Denver, Congressional Record, December 7, 1928, pp. 242-243.

² See report of Delph Carpenter, commissioner of the State of Colorado (appendix 210 herein).

³ Cf. *Kansas v. Colorado*, 206 U. S. 46 (1907) *Wyoming v. Colorado*, 259 U. S. 419, 468 (1922).

⁴ See classifications and discussion of interstate compacts in Ely, "Oil Conservation Through Interstate Agreement," pp. 174-206 (1933).

⁵ As early as 1912 Mr. Carpenter is said to have suggested the use of the treaty-making power by the States as a method for settlement of interstate water rights (Communication to Chas. A. Dobbel, 1934).

⁶ 259 U. S. 419 (1922).

United States Supreme Court but undecided, involving a contest between two appropriation States.

(2) *League of the Southwest*.—For some time prior to 1918, an organization for the promotion of western development had existed under the name of the League of the Southwest.⁷

On January 18, 1918, a meeting of the league convened in Salt Lake City on the call of Gov. W. J. Spry of Utah. By that time the Governors of Arizona, California, Nevada, New Mexico, Oklahoma, Texas, and Utah were represented.

At some later time Wyoming was substituted for Oklahoma.

On April 1, 2, and 3, 1920, the league met in Los Angeles and adopted resolutions favoring the development of the Colorado River by the Reclamation Service, and recommending immediate investigation of the Boulder Canyon site.

On August 25–27, 1920, the league met at Denver, Governor Campbell of Arizona presiding.

This meeting was made significant by the debate over upper-versus lower-basin storage sites, and by discussion of an interstate compact. Governor Shoup of Colorado was appointed chairman of a committee on resolutions, and he, in turn, appointed Messrs. Delph Carpenter of Colorado and Sims Ely of Arizona as a subcommittee to report a plan.⁸ The subcommittee reported favorably Mr. Carpenter's proposal to utilize the treaty-making power of the States. After hearing Arthur P. Davis, Director of the Reclamation Service, with respect to water supply and storage questions, the resolutions committee reported out and the league adopted a resolution endorsing storage on the upper reaches of the river, and concluding with the following paragraph:

Resolved, That it is the sense of this Congress that the present and future rights of the several States whose territory is in whole or in part included within the drainage area of the Colorado River, and the rights of the United States, to the use and the benefit of the waters of said stream and its tributaries, should be settled and determined by compact or agreement between said States and the United States, with the consent of Congress, and that the legislatures of said States be requested to authorize the appointment of a commissioner for each of said States for the purpose of entering into such compact or agreement for subsequent ratification and approval by the legislature of each of said States and the Congress of the United States.

This was the genesis of the Colorado River compact.

⁷ See Carpenter, appendix 210. The writers are indebted to Charles P. Squires of Nevada, L. Ward Bannister of Colorado, Francis C. Wilson of New Mexico, and Sims Ely of Arizona, for much of this historical material.

⁸ Sims Ely states that Mr. Carpenter, at the initial meeting of the subcommittee, outlined not only the general scheme of an interstate compact, but a basis for division between the four upper States, as one group, and the three lower States, as another.

(3) *Authorization of negotiations by State legislatures.*—A uniform bill authorizing appointment of commissioners and negotiation of a compact was prepared and submitted to the States.⁹

These bills, in somewhat modified form, were adopted by the seven legislatures during the 1921 sessions. Their citations appear in appendix 202.

On May 10, 1921, following enactment of these authorization bills, the governors of the seven States met at Denver, Colo., and adopted a resolution directing Governor Campbell of Arizona to submit to the President the request of the seven States for the appointment of a Federal commissioner and enactment of a Federal bill authorizing negotiation of a compact.¹⁰

(4) *Authorization of negotiations by Congress.*—As directed by the seven governors, Governor Campbell submitted the proposal to the President and, through his associates, to Congress.

The required Federal legislation¹¹ was enacted as the act of August 19, 1921 (42 Stat. 171), and is printed here as appendix 201.

(5) *Appointment of the Commissioners.*—On December 17, 1921, President Harding appointed Herbert C. Hoover as Federal representative on the Colorado River Commission.

Subsequently, the following Commissioners were named by the governors of the respective States: Arizona, W. S. Norviel; California, W. F. McClure; Colorado, Delph E. Carpenter; Nevada, J. G. Scrugham; New Mexico, Stephen B. Davis, Jr.; Utah, R. E. Caldwell; Wyoming, Frank C. Emerson.

⁹ These measures were drafted by Mr. Carpenter.

¹⁰ The meeting of the Governors on May 10, 1921, was attended by Govs. Thomas E. Campbell of Arizona, Oliver H. Shoup of Colorado, Emmet E. Boyle of Nevada, Merritt C. Meacham of New Mexico, Charles R. Mabey of Utah, Robert D. Carey of Wyoming. The Governor of California, William D. Stephens, was represented by W. F. McClure, State engineer.

¹¹ The draft of the Federal statute was prepared and submitted by Mr. Carpenter and Mr. Sims Ely of Arizona. Its legislative history was as follows:

LEGISLATIVE HISTORY OF THE ACT OF AUGUST 19, 1921 (42 STAT. 171)

H. R. 6877.—June 6, 1921, introduced by Mr. Mondell, referred to the Committee on the Judiciary; June 17, committee report, H. Rept. No. 191 (67th Cong., 1st sess.); June 20, passed House; June 21, referred to Senate Committee on Irrigation and Reclamation; August 4, Committee on Irrigation and Reclamation discharged; August 4, passed Senate; August 19, approved (Public Law No. 56, 67th Cong.) (61 Congressional Record (House), pp. 2174, 2739, 2770-2774, 4833, 4955; 61 Congressional Record (Senate), pp. 2803, 4656, 4657, 4853).

S. 1853.—May 20, 1921, introduced by Mr. Bursum, referred to the Committee on Irrigation and Reclamation; June 27, committee report, S. Rept. No. 180 (67th Cong., 1st sess.); August 4, indefinitely postponed in favor of H. R. 6877 (61 Congressional Record (Senate), pp. 1561, 3054, 4656, 4657).

Mr. Norviel was Arizona State Water Commissioner and a lawyer. Mr. McClure was State engineer of California. Mr. Carpenter was one of Colorado's most eminent water lawyers. Mr. Scrugham was State engineer of Nevada, subsequently governor, and later Congressman and Senator from that State. Mr. Davis was an outstanding attorney, later Solicitor of the Department of Commerce. Mr. Caldwell was State engineer of Utah. Mr. Emerson was State engineer of Wyoming, subsequently Governor of that State.

Mr. Hoover was at that time Secretary of Commerce, and was an engineer by training.

B. Negotiation of the Compact

(1) *First seven meetings, Washington, January 1922.*—The Colorado River Commission convened at the Department of Commerce in Washington January 26, 1922.

Herbert Hoover, Secretary of Commerce, in his opening statement said:¹²

It is fortunate that there is little established right on the river and that we have almost a clean sheet with which to begin our efforts. The importance of the river cannot be overestimated as a national asset. Today there are some 2¼ million acres under irrigation in the drainage basin. With proper development this can be increased to over 6,000,000 acres. There can be developed on the river over 5,000,000 horsepower, and with rapid strides in transmission, this enormous reserve of power will yet harness an enormous asset to the Nation.

Populations depending upon the lower river are in extreme jeopardy through the violations of the river floods and the control of its flood flow has become vital to their very existence.

This conference is unique in its attempt to determine States' rights over so large an area by amiable agreement. Indeed it has wider proportions than this in its realization of common interest, need of joint consideration, etc., in order that the greatest possible benefit may be derived for the whole of our people from one of the most precious possessions of our country.

Mr. Hoover was elected permanent Chairman of the Commission.

Seven executive sessions were held in Washington, concluding January 30, 1922.

The data available, particularly if an allocation to individual States was attempted, was found inadequate, and the meeting adjourned, subject to call of the Chair, with the suggestion that the next meeting take place in the Southwest.

(2) *The Fall-Davis report, February 1922.*—At this point there became available to the negotiators of the compact the so-called Fall-Davis report, Problems of Imperial Valley and Vicinity,¹³ transmitted to Congress February 28, 1922, following submission of a preliminary

¹² Minutes and record of the first meeting, Colorado River Commission (January 26, 1922), p. 3.

¹³ S. Doc. 142 (67th Cong., 2d sess.), "Problems of Imperial Valley and Vicinity" (1922).

report on November 27, 1920. Both were the outcome of investigation authorized by the act of May 18, 1920 (the Kinkaid Act), "An act to provide for an examination and report on the condition and possible irrigation development of the Imperial Valley in California" (appendix 102, 41 Stat. 600).

The report was of significance in indicating the competitive potentialities of the various sections of the basin if development should proceed under the doctrine of priority of appropriation without regard to State lines.¹⁴

(3) *Public hearings.*—The Commission reconvened for public hearings at Phoenix, Ariz., March 15, 16, and 17, 1922.

Hearings continued at Los Angeles, March 20, 1922; Salt Lake City, Utah, March 27 and 28, 1922; Grand Junction, Colo., March 29, 1922; Denver, Colo., March 31 and April 1, 1922; and Cheyenne, Wyo., April 2, 1922.

These meetings developed the full expression of views which has become rather characteristic of Colorado River meetings.

The Commission also carried out inspection trips through the Las Vegas and Imperial Valley areas.

(4) *Effect of decision in Wyoming v. Colorado.*—On June 5, 1922, the United States Supreme Court handed down its decision in

¹⁴ The Fall-Davis report contained, among a large number of tables on water supply and estimated demand, the following, which became of particular significance in the subsequent consideration of the Colorado River Compact:

APPENDIX B. WATER SUPPLY AND DEVELOPMENT

TABLE NO. 4.—*Summary of irrigation, entire basin, by political boundaries (p. 33)*

	Irrigated, 1920 ¹	Additional possible	Total
United States:			
Wyoming.....	367,000	543,000	910,000
Colorado.....	740,000	1,018,000	1,758,000
Utah.....	359,000	456,000	815,000
New Mexico.....	34,000	483,000	517,000
Arizona.....	501,000	676,000	1,177,000
Nevada.....	5,000	2,000	7,000
California.....	458,000	481,000	939,000
Total, United States.....	2,464,000	3,659,000	6,123,000
Mexico.....	190,000	610,000	800,000
Total.....	2,654,000	4,269,000	6,923,000
Total:			
Upper basin.....	1,530,000	2,550,000	4,080,000
Lower basin.....	700,000	1,320,000	2,020,000
Gila Basin.....	430,000	400,000	830,000
Total.....	2,660,000	4,270,000	6,930,000

¹ From United States census, modified by data from State engineers.

² Recently the State engineer has reported 80,000 acres additional possible irrigation in Nevada, of which 50,000 acres are in the upper basin.

Wyoming v. Colorado. In general, it sustained the doctrine of priority of appropriations regardless of State lines, saying (259 U. S. 419, 468):

In neither state was the right to appropriate water from this interstate stream denied. On the contrary, it was permitted and recognized in both. The rule was the same on both sides of the line. Some of the appropriations were made as much as fifty years ago and many as much as twenty-five. In the circumstances we have stated, why should not appropriations from this stream be respected, as between the two states, according to their several priorities, as would be done if the stream lay wholly within either state? By what principle of right or equity may either state proceed in disregard of prior appropriations in the other?

Delph E. Carpenter, Colorado River Commissioner for the State of Colorado, summarized the situation produced by that decision as follows:¹⁵

The upper state has but one alternative, that of using every means to retard development in the lower state until the uses within the upper state have reached their maximum. The states may avoid this unfortunate situation by determining their respective rights by interstate compact before further development in either state, thus permitting freedom of development in the lower state without injury to future growth in the upper.

The final negotiation of the compact took place in the atmosphere produced by that decision.

(5) *The Hoover compromise: Division of the basin.*—During the public hearings and business meetings of the Commission, it became apparent that any attempt to allocate waters individually to the several States would be a protracted and probably unsuccessful undertaking. Participants have stated that the negotiations would have broken up but for Mr. Hoover's proposal: that the Commission limit its efforts to a division of water between the upper basin and the lower basin, leaving to each basin the future internal allocation of its share.

This proposal was later summarized by Mr. Hoover, speaking before the Commonwealth Club of San Francisco, December 1, 1922, immediately after execution of the compact, as follows:¹⁶

The major legal dispute lies between the upper and lower basin. Indeed all the problems very naturally divided themselves into two parts—that is into the two basins of the river separated by the canyon. The character of agriculture, industry and the engineering problems in the two basins are of widely different nature, and it became the natural and logical thing to divide the Colorado River into two parts at the canyon, and to assign to each part a certain portion of the flow of the river permanently, and to develop the two basins as two separate principalities.

¹⁵ Appendix 210 herein.

¹⁶ Transactions of the Commonwealth Club of California, vol. 17, No. 11, p. 451.

(6) *Final 20 meetings of the Commission and execution of the compact.*—The Commission held its eighth business meeting at Phoenix, March 15, and its ninth at Denver, April 1. It convened at Bishop's Lodge, Santa Fe, N. Mex., November 9, 1922, for its tenth meeting, and remained in session there until completion of its work, at the twenty-seventh meeting, on November 24, 1922.

The task of the Commission was complicated by the fact that in the elections of November 1922 new governors had been elected in several of the basin States. The new governors were invited to attend the meeting of the Commission, and several of them did. The prestige of the Commissioners appointed by their predecessors was such that in every case the former Commissioners remained in office to the conclusion of the compact negotiations.

The compact, which is summarized in the pages following, was signed at Santa Fe, N. Mex., November 24, 1922, by the same Commissioners who had initiated negotiations in January of that year in Washington.

C. Summary of the Compact

The Colorado River compact (the text of which is printed as appendix 203) is a document of approximately 1,200 words, divided into 11 articles, dealing with the following general subjects (although the titles used here do not appear as captions of the articles designated):

- Article I. Purposes
- II. Definitions
- III. Allocations
- IV. Priority of uses
- V. Administration
- VI. Arbitration
- VII. Indian Tribes
- VIII. Present Perfected Rights
- IX. Litigation
- X. Termination
- XI. Ratification

A summary of the most important of these articles follows:

(1) *Article I: Purposes.*—The purposes stated are to provide for the equitable division and apportionment of the use of the waters of the Colorado River system; to establish the relative importance of different beneficial uses; to promote interstate comity; to remove causes of present and future controversies and secure the expeditious agricultural and industrial development of the basin; to secure the storage of its waters and the protection of life and property from floods. To those ends the basin is divided into two basins and an apportionment of the use of part of the water of the system is made to each of them with a provision that further equitable apportionment may be made.

(2) *Article II: Definitions.*—Article II (a) defines the Colorado River system as “that portion of the Colorado River and its tributaries within the United States of America.” This definition includes the Gila River, a matter of some controversy, as it later developed.¹⁷

Article II (b) defines the Colorado River Basin to mean all the drainage area of the Colorado River system “and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied.” By this definition the basin includes the Coastal Plain of southern California, the Salton Sink drainage area in California, and the areas to which transmountain diversions may be made in other States.¹⁸

Article II (c) defines the term “States of the Upper Division” to mean the States of Colorado, New Mexico, Utah, and Wyoming.

Article II (d) defines the term “States of the Lower Division” to mean the States of Arizona, California, and Nevada.

Article II (e) defines “Lee Ferry” as meaning a point in the main stream of the Colorado River one mile below the mouth of the Paria River.

Article II (f) defines the term “Upper Basin” to mean those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming “within and from which waters naturally drain into the Colorado River System above Lee Ferry” as well as parts of those States without the drainage area of the system “which are now or shall hereafter be beneficially served by waters diverted from the system above Lee Ferry.” This definition of “Upper Basin” is broader than the definition of the term “States of the Upper Division.”

Article II (g) defines the “Lower Basin” to mean those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry and also parts of those States located without the drainage area “which are or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry.” The term “Lower Basin” as thus defined is broader than the term “States of the Lower Division.”

¹⁷ See Chapter XIII, *Litigation*. See also reservations to the compact proposed by the House of the Arizona Legislature, ch. III B, *infra*.

¹⁸ At the time of the negotiation of the Colorado River Compact, neither the transmountain diversion to the Coastal Plain of California, nor the large diversions into eastern Colorado, now under discussion, had been considered. See comment by Mr. Hoover (ch. XIV, *infra*, S. Doc. 32, 79th Cong., 1st sess., 1945), and comment by A. P. Davis, Commissioner of Reclamation, appendix 206, *infra*. Cf. comments in report of the American Section of the International Water Commission (H. Doc. 359, 71st Cong., 2d sess., p. 18). For a tabulation of demands anticipated in 1922, including transmountain diversions, as considered by the negotiators of the compact, see S. Doc. 142 (67th Cong., 2d sess.), “Problems of Imperial Valley and Vicinity” (appendix B, p. 31, et seq.).

Article II (h) defines domestic uses to exclude the generation of electric power.

(3) *Article III: Allocations.*—Article III of the compact, avoiding any attempt at individual allocation to the seven States, effected an allocation as between the upper and lower basins, leaving to future adjustment the division of the use of water within each basin.

Article III (a) apportionments from the Colorado River system in perpetuity to the upper basin and to the lower basin, respectively—

the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum—

to include—

all water necessary for the supply of any rights which may now exist.

Article III (b) provides that—

In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by 1,000,000 acre-feet per annum.¹⁹

Article III (c) provides in part against the contingency of a treaty between the United States and Mexico, stating that if, as a matter of

¹⁹ See Chapter XIII, Litigation. The relation between the waters referred to in art. III (a) and art. III (b) was argued as follows by Arizona in *Arizona v. California*, et al. (283 U. S. 423) (brief at p. 33):

Under the Compact, then, the only water of which the right to exclusive beneficial use in perpetuity may be acquired in the Lower Basin is the water apportioned to that Basin. Such apportionment is limited to 7,500,000 acre-feet of water per annum by Article III (a). The Colorado brief, page 40, contends that paragraph (b) of Article III operates to increase this apportionment to 8,500,000 for the Lower Basin. This, we submit, is not the case. If it had been intended to apportion the larger amount, the Compact could easily have said so. The difference in language between paragraphs (a) and (b) is plain, and the difference in meaning is clear. Paragraph (b) does not *apportion in perpetuity*, as does paragraph (a), any beneficial use of water. It is very careful not to do this. It is to be read with paragraph (c) and relates solely to the method of sharing between the basins any future Mexican burden which this Government might recognize. This burden is to be satisfied first out of "surplus" waters, and surplus waters are defined, not as surplus over quantities "apportioned," but as surplus over quantities "specified in paragraphs (a) and (b)." Any deficiency remaining is to be borne equally by the two basins. Thus the Lower Basin, which without paragraph (b) might use water in excess of its apportionment without acquiring any exclusive right in perpetuity thereto, is enabled to retain such uses to the extent of 1,000,000 acre-feet per annum against the first incidence of the Mexican burden. Thereafter it is entitled to require the Upper Basin to share from its apportionment equally in the satisfaction of any deficiency. In other words, all that paragraphs (b) and (c) accomplish is to require the Upper Basin to reduce its apportionment in favor of Mexico before the Lower Basin is required to do so, the Lower Basin being entitled to contribute first, to the extent of 1,000,000 acre-feet, water which it may have used but to which it has no exclusive right in perpetuity—that is, water not apportioned to it. The water apportioned is that to which exclusive beneficial use in perpetuity is given in paragraph (a), less any deductions which may have to be recognized as provided in paragraphs (b) and (c).

Compare Report of Delph Carpenter, Colorado River Commissioner, to the Legislature of Colorado, (appendix 210 herein).

international comity the United States shall hereafter recognize in Mexico any right to the use of waters of the Colorado River system—

such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).²⁰

Article III (d) stipulates that—

The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.²¹

Article III (e) provides that the States of the upper division shall not withhold water, and the States of the lower division shall not require the delivery of water, which cannot be reasonably applied to domestic and agricultural uses.

²⁰ Cf. sec. 20 of the Boulder Canyon Project Act (appendix 401 herein).

²¹ One of the frequently quoted analyses of this provision of the compact is that in the brief of Arizona in *Arizona v. California, et al.* (283 U. S. 423), by Messrs. Acheson, Peterson and Matthews (p. 32):

The provision in paragraph (d) of Article III that the Upper Basin States will not cause the flow of the river to be depleted below 75,000,000 acre-feet over ten-year periods, has, as the Colorado brief, page 41, correctly states, no bearing on the amount of the apportionment to the Lower Basin. This 75,000,000 acre-feet is not apportioned to the Lower Basin. It may not be appropriated in the Lower Basin. Only so much of it may be appropriated as together with existing and future appropriations of water in or from tributaries entering the river below Lee Ferry will total 7,500,000 acre-feet per year. The 75,000,000 acre-feet includes all surplus waters which under paragraph (c) must first bear any Mexican burden, which may not be appropriated, and which are subject to apportionment after 1963. It is fundamental to an understanding of the Compact that the annual beneficial consumptive use in perpetuity of 7,500,000 acre-feet of water apportioned by it to the Lower Basin includes all beneficial consumptive use in perpetuity which may be made from the whole river system, and is not merely an apportionment of such uses in main stream water flowing at Lee Ferry. The agreement not to deplete the flow at Lee Ferry below the specified amount does not mean, and cannot under the plain words of the Compact be construed to mean, that the guaranteed flow is apportioned to the Lower Basin or may be appropriated there. As to this, at least, there can be no shadow of doubt.

But for the contrary view, see the brief of Mr. Carson of Arizona (p. 10) in *Arizona v. California, et al.* (292 U. S. 341):

The Compact, therefore, in Article III (a) apportions 7,500,000 acre-feet per annum to the upper basin and 7,500,000 acre-feet per annum to the lower basin in perpetuity and in order to assure delivery to the lower basin of the 7,500,000 acre-feet per annum, apportioned to it, provided further in Article III (d) as follows:

“(d) The States of the upper division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of 10 consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.”

It is very apparent that the foregoing provision was arrived at by multiplying the 7,500,000 acre-feet per annum apportioned to the lower basin, by Article III (a), by ten, thus dividing between the upper and lower basins the benefit of flood waters.

Article III (f) provides that further equitable apportionment of the beneficial uses of the waters of the Colorado River system—

unapportioned by paragraphs (a), (b), and (c) may be made in the manner provided in paragraph (g) at any time after October first, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b).

Article III (g), relating, like article III (f), to “a further apportionment,” provides the machinery to bring it about. Any two signatory States, through their governors, may give joint notice of their desire for further apportionment (after October 1, 1963) to the governors of the other signatory States and to the President, all of whom are thereupon obligated to appoint representatives—

whose duty it shall be to divide and apportion equitably between the Upper Basin and Lower Basin the beneficial use of the unapportioned water of the Colorado River System, as mentioned in paragraph (f), subject to the legislative ratification of the signatory States and the Congress of the United States of America.

The second compact is thus dependent upon unanimous consent for the apportionment of waters unapportioned by the original agreement.

(4) *Article IV: Priority of uses.*—Article IV states that—

* * * the Colorado River has ceased to be navigable for commerce—

and subordinates the use of its waters for navigation to uses for domestic, agricultural, and power purposes. In anticipation that Congress might have other views, it provides:

If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding.²²

Article IV (b) of the compact authorizes the impounding and use of water for generation of electrical power, subject to the provisions of the compact, but stipulates that such impounding and use shall be subservient “to the use and consumption” of such water for agricultural and domestic purposes, and shall not interfere with or prevent use for such dominant purposes.²³

Article IV (c) stipulates that the provisions of this article (relating to preferences) shall not apply to or interfere with the regulation and control by any State within its boundaries of the appropriation, use, and distribution of water.

(5) *Article V: Administration.*—This article authorizes what was apparently intended to be a continuing Colorado River Commission

²² Cf. sec. 1 of the Boulder Canyon Project Act (appendix 401), *infra*, and the decision of the Supreme Court, sustaining the constitutionality of the Boulder Canyon Project Act as an enactment in aid of navigation: *Arizona v. California* (283 U. S. 423) (appendix 1301, *infra*).

²³ Cf. priorities of uses stated in secs. 1 and 6 of the Boulder Canyon Project Act (appendix 401, *infra*), and in art. 3 of the Mexican water treaty (appendix 1405, *infra*).

comparable to that which negotiated the compact. It provides that the "chief official of each signatory State charged with the administration of water rights," together with the Director of the Reclamation Service and the Director of the United States Geological Survey, will cooperate ex officio for three purposes: (a) to promote the systematic determination and coordination of facts, as to flow, appropriation, consumption, and use of water in the basin, and interchange of available information; (b) to secure the ascertainment and publication of the annual flow of the river at Lee Ferry; and (c) to perform such other duties as may be assigned by mutual consent of the signatories from time to time.

To date this provision of the compact has not been put to use.²⁴

(6) *Article VI: Arbitration.*—Article VI provides machinery for arbitration, but in permissive, not mandatory, form.

(7) *Article VII: Indian tribes.*—This article provides simply that—

Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.

(8) *Article VIII: Present perfected rights.*—This article stipulates that—

Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact—

and provides that whenever storage capacity of 5,000,000 acre-feet shall have been provided, then claims of such perfected rights by appropriators or users in the lower basin against appropriators or users in the upper basin—

* * * shall attach to and be satisfied from water that may be stored not in conflict with Article III.

All other rights to beneficial use of waters shall be satisfied solely—

* * * from the water apportioned to that Basin in which they are situate.²⁵

²⁴ The States have operated through officials other than their "chief official * * * charged with the administration of water rights," and there has been no "Colorado River Commission," as such, functioning jointly for all of them. The Boulder Canyon Project Act (appendix 401), in sec. 16, apparently contemplated the service of such commissioners in cooperation with the Secretary of the Interior, in the furtherance of a comprehensive plan for the development of the basin. The States have acted at times through a "Committee of Fourteen" or a "Committee of Sixteen," referred to in connection with the Boulder Canyon Project Adjustment Act (see appendix 801), which broke apart on the issue of the Mexican water treaty (appendix 1405).

²⁵ Hoover Dam was actually constructed to a capacity of approximately 33,000,000 acre-feet. See ch. VII, *infra*. Sec. 6 of the Boulder Canyon Project Act (appendix 401, *infra*) stipulates that the dam and reservoir shall be used "first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River Compact; and, third, for power."

(9) *Article IX: Litigation.*—This article provides that nothing in the compact shall be construed to limit the right of any State to institute or maintain any equitable or legal action for the protection of any right under the compact or for the enforcement of any of its provisions.

(10) *Article X: Termination.*—This article provides that the compact may be terminated by unanimous agreement at any time, but—
In the event of such termination all rights established under it shall continue unimpaired.

(11) *Article XI: Ratification.*—This article provides that the compact shall become binding and obligatory when approved by the legislatures of each of the signatory States and by Congress, and provides for the manner of giving notice of approval.²⁸

D. Resolutions of the Commissioners

At the conclusion of their work, November 24, 1922, the Commissioners adopted and released the following resolutions:

Resolution on Construction of Flood Control Works

The members of the Colorado River Commission have had constantly before them the great menace by annual floods to the lives and property of the people of the Imperial and Palo Verde Valleys in California, and the Yuma Valley in Arizona, and the anxiety of their thousands of citizens:

Therefore, they earnestly recommend and urge the early construction of works in the Colorado River to control the floods and permanently avoid the menace, such construction to be made subject to the Colorado River Compact.

Resolution of Appreciation to Chairman

On behalf of the members of the Colorado River Commission, Mr. Delph E. Carpenter made the following remarks at the conclusion of the final meeting of the Commission held at Bishop's Lodge, Santa Fe, New Mexico, November 24, 1922:

"We have about completed the task assigned to this Commission, which is the first exemplification of greater exercise of interstate diplomacy in the history of our nation. Each member may well reserve unto himself an ample measure of credit for the fortunate conclusion, for such is his just due. It has been frequently remarked in my presence that a like Commission composed of members possessing similar personal qualities and qualifications, seldom will be found, and we may go to our homes with a consciousness of a work well done, and of lasting personal friendships triply cemented.

"But the members of this Commission appreciate that our whole proceedings would be incomplete without a frank statement that to our Chairman, Mr. Hoover, is due the greater measure of credit for this successful termination of our labors. Through all the days of our toil, he has been kind, just, generous and patient. We have come to respect you, Mr. Chairman, not only for your

²⁸ The requirement of seven-State approval was waived by secs. 4 (a) and 13 (a) of the Boulder Canyon Project Act (appendix 401, *infra*). See chs. IV and V, *infra*.

ability, but for your personality; and as we are about to enter upon the concluding chapter of this great undertaking, I am designated by the other members of the Commission to express to you not only our admiration, but our love and esteem. And we assure you that wherever you may go, whatever you may do, you will carry through life the fond esteem, admiration and love of all of us; and if any of us survive you, ours will be a fond recollection."

E. Results of the Compact

The most direct result of the Colorado River Compact was that it made possible the enactment of the Boulder Canyon Project Act; there is not another example of Federal legislation so deliberately integrated with legislation established by the acts of State legislatures. The Colorado River Compact is the first and great instance in which Congress adopted the terms of a compact as part of a Federal statute, and, indeed, subjected the exercise of Federal powers to the control of an interstate compact. The genius of the compact was its isolation and solution of the issues between the two basins which had to be disposed of before storage could be built in either with safety to the other, while avoiding local issues whose solution was not essential in advance of the construction of Hoover Dam.

The Colorado River Compact deliberately left to future adjustment the internal allocation within each basin of the waters available to that basin under the compact. The wisdom of limiting the basic agreement to a division between basins has been emphasized by the quarter century of subsequent effort to write a compact dividing the use of water among individual States.

F. The Lower Basin: Unsuccessful Efforts Toward a Compact

In the Lower Basin, negotiations among Arizona, California, and Nevada during two and a half decades have failed to produce an agreement. The effect of these controversies on the provisions of the Boulder Canyon project is indicated in chapter IV, and, with respect to other developments on the river, in chapter XII.

G. The Upper Basin: Compact of October 11, 1948 (Appendix 231)

In the Upper Basin, for various reasons, the problem of a local compact has been less controversial than in the Lower Basin. On October 11, 1948, at Santa Fe, N. Mex., following preliminary meetings at other points in the basin, a compact among the five States having territory in the Upper Basin was executed. These are the four "upper division" States of Colorado, New Mexico, Utah, and Wyoming, plus Arizona, which has a small area in the Upper Basin, although it is a "lower division" State. The compact was executed

for Arizona by Charles A. Carson, for Colorado by Clifford H. Stone, for New Mexico by Fred E. Wilson, for Utah by Ed H. Watson, for Wyoming by L. C. Bishop, and was approved for the United States by Harry W. Bashore, appointed by the President as the representative of the United States in these negotiations. The full text of the Upper Basin Compact as executed appears herein as appendix 231. As of this writing, it is awaiting action by the five legislatures, and by the Congress.

Comprising 21 articles in all, the document is written around an apportionment made in article III thereof, as follows:

The use of water as such use is apportioned in perpetuity to the Upper Basin and available for use by the States of the Upper Basin under the Colorado River Compact is hereby apportioned among the States of the Upper Basin in perpetuity subject to the provisions and limitations appearing in the Colorado River Compact and in this Compact, as follows: To the State of Arizona the consumptive use of 50,000 acre-feet annually and the remainder to the States of Colorado, New Mexico, Utah and Wyoming in the following proportions:

	<i>Percent</i>
Colorado.....	51. 75
New Mexico.....	11. 25
Utah.....	23. 00
Wyoming.....	14. 00

The apportionment made to each State shall include all water necessary for the supply of any rights which now exist.

No apportionment is hereby made, or intended to be made, of such uses of water as the Upper Basin may be entitled to under paragraphs (f) and (g) of Article III of the Colorado River Compact, and any apportionment of such uses shall be made in accordance with the terms of such paragraphs.

Other articles have to do with purposes (art. I); definitions (art. II); apportionment of the burden to deliver water at Lee Ferry under art. III (d) of the Colorado River Compact of 1922 (art. IV); storage, and reservoir losses (art. V); determinations of consumptive use (art. VI); use of water by the United States (art. VII); creation of an "Upper Colorado River Commission" (art. VIII); interstate projects (art. IX); related compacts involving the La Plata, Little Snake, and Henrys Fork Rivers (arts. X, XI, and XII); collateral agreements involving the Yampa River (art. XIII); the San Juan River (art. XIV); the development of electric power, and State control of waters (art. XV); failure to use water (art. XVI); importations from other watersheds (art. XVII); reservation of rights by Arizona, New Mexico, and Utah as States of the Lower Basin (art. XVIII); obligations to Indian tribes, obligations under the treaty with Mexico, the rights of the United States, etc. (art. XIX); termination by unanimous consent (art. XX); and ratification (art. XXI).

Chapter III

EVENTS INTERVENING BETWEEN EXECUTION OF THE COLORADO RIVER COMPACT AND ENACT- MENT OF THE BOULDER CANYON PROJECT ACT

A. Issues

Six years elapsed after execution of the Colorado River Compact before enactment of Federal legislation ratifying the compact and authorizing construction of the necessary storage works and of the All-American Canal. The project became a national issue during this interval. Arizona opposed it, and was joined in that opposition by the opponents of public power development, by American owners of lands in Mexico who were opposed primarily to the construction of an All-American Canal, and by others who did not believe that the project could pay for itself. The very magnitude of the undertaking constituted a source of inertia. Space does not permit a detailed account of this interesting period of conflict, but representative references may be found in the footnotes.¹

¹ Committee hearings and reports on Colorado River bills during this period (1922-28) include the following:

1922.—Hearings, House Committee on Irrigation, "Protection and Development, Lower Colorado River Basin," on H. R. 11449 (67th Cong., 2d sess.) (June 15, 1922-February 21, 1923).

1923.—Hearings, House Committee on Irrigation, "Protection and Development of Lower Colorado River Basin," on H. R. 2903 (68th Cong., 1st sess.) (April-August 1923). In addition to the formal hearings, Arizona and California each printed extracts, excerpts, and supplements.

1924.—Hearings, House Committee on Irrigation and Reclamation, "Protection and Development of Lower Colorado River Basin," on H. R. 2903 (68th Cong., 1st sess.) (February 9-May 17, 1924). (A supplement, "Information by Citizens of Arizona," was published.)

Hearings, Senate Committee on Irrigation and Reclamation, "Colorado River Basin," on S. 727 (68th Cong., 1st sess.) (December 17, 1924-January 23, 1925).

1925.—Hearings, Senate Committee on Irrigation and Reclamation, "Colorado River Basin," on S. Res. 320 (68th Cong., 2d sess.) (October 26-December 22, 1925).

1926.—Hearings, House Committee on Irrigation and Reclamation, "Colorado River Basin," on H. R. 6251 and H. R. 9826 (69th Cong., 1st sess.) (February 5-May 17, 1926); same title, hearings on H. R. 9826.

Report of the House Committee on Irrigation and Reclamation, on H. R. 9826 (69th Cong., 1st sess.; H. Rept. No. 1657 (1926)).

(1) *The Weymouth report.*—On February 28, 1924, the results of 2 years of additional work under the Kinkaid Act were embodied in a report made by Chief Engineer F. E. Weymouth of the Bureau of Reclamation to the Commissioner of Reclamation. The conclusions of this report (unpublished) were:

(a) That there was immediate need of flood protection in the lower Colorado River Basin for the Imperial Valley, attention being called to the immediate danger during each flood period that the river might break into the valley and destroy it;

(b) That there was a shortage of water in the Imperial Valley in each low-water year, there being only 3,500 second-feet or less available for the entire valley at such times;

¹Continued

Report of the Senate Committee on Irrigation and Reclamation on S. 3331 (69th Cong., 1st sess.; S. Rept. No. 654 (April 19, 1926)).

1927.—Hearings of the House Committee on Rules, "Hearings on Boulder Dam," on H. R. 9826 (69th Cong., 2d sess.) (January 20–22, 1927).

Report of the Senate Committee on Irrigation and Reclamation, "Estimates for Irrigating Lands Under Colorado River Compact," on S. J. Res. 131 (69th Cong., 2d sess.; S. Rept. No. 131 (January 17, 1927)).

Report of the House Committee on Irrigation and Reclamation, "Protection and Development, Lower Colorado River" (H. Rept. No. 2212, 69th Cong., 2d sess.) (February 23, 1927).

1928.—Hearings of the House Committee on Irrigation and Reclamation, "Regulating the Colorado River," on H. R. 5770 (70th Cong., 1st sess.) (January 7, 1928).

Hearings of the House Committee on Irrigation and Reclamation, "Protection and Development of Lower Colorado River," on H. R. 5773 (70th Cong., 1st sess.) (January 6–14, 1928).

Hearings of the Senate Committee on Irrigation and Reclamation, "Colorado River Basin," on S. 728 and S. 1274 (70th Cong., 1st sess.) (January 17–21, 1928).

Report of the House Committee on Irrigation and Reclamation on H. R. 5773 (70th Cong., 1st sess.; H. Rept. No. 918) (March 15–24, 1928).

Report of the Senate Committee on Irrigation and Reclamation on S. 728 (70th Cong., 1st sess.; S. Rept. No. 592) (March 20, April 9, 1928).

Hearings of the House Committee on Rules, "Boulder Dam" (70th Cong., 1st sess.) (April 24–May 2, 1928).

Report of the House Committee on Rules, on H. R. 5773 (70th Cong., 1st sess.) (May 15, 1928).

Each State has also published reports stating its viewpoint:

Arizona.—"Official Report of the Proceedings of the Colorado River Conference Between Delegates Representing California, Nevada and Arizona," August 17, 1925; "The Colorado River Question" (1928); "Proposals as to a Basis for a Lower Basin Compact" (1929).

California.—"California Proposals as a Basis for a Lower Basin Compact" (1929); "Analysis of Boulder Canyon Project Act" (1930); "The Boulder Canyon Project" (1930); "Colorado River and the Boulder Canyon Project" (1931); "California's Stake in the Colorado River" (1947).

Nevada.—"Reports of the Colorado River Commission of Nevada, 1927–35" (1935); "Boulder Canyon-Lower Colorado River Power and Water Set-up" (1928), by Geo. W. Malone, State engineer.

(c) That it was practicable to build reservoirs on the Colorado River sufficient in capacity to provide reasonably uniform flow from year to year;

(d) The results of investigation of eight dam sites on the main river indicated that the most advantageous site from the standpoint of river regulation, flood control, storage for irrigation, and power development was that at Black Canyon;

(e) That the immediately urgent problems of river control and utilization of the Colorado River Basin could be solved by (a) the construction of Boulder Canyon Reservoir with a dam in Black Canyon, raising the water 605 feet and forming a reservoir of 34,000,000 acre-feet capacity; (b) reservation of 8,000,000 acre-feet at the top of the reservoir for flood control, with provision for a decrease of 4,000,000 acre-feet, depending upon upstream development; (c) provision for priority of use of remaining storage for irrigation over power; (d) construction of a powerhouse with 1,200,000 horsepower installed capacity; (e) construction of an All-American Canal from Laguna Dam to Imperial Valley.

(2) *Controversy over a "high dam."*—For some time there was controversy as to whether the storage dam should be a high, i. e., "power" dam, or a low dam built primarily for flood control. Senator Hiram Johnson and Representative Phil D. Swing led the fight for a high power-producing dam.

In a statement on July 14, 1925, Mr. Hoover said:

The high dam is urgently needed now and for the next 25 years in order to accomplish the necessary objectives at the earliest moment.

The needs of the Imperial Valley and Los Angeles are imperative, and any delay courts disaster.

Testifying before the Senate Committee on Irrigation and Reclamation, December 10, 1925, Mr. Hoover said: ²

. . . I believe the largest group of those who have dealt with the problem, both engineers and business folk, have come to the conclusion that there should be a high dam erected somewhere in the vicinity of Black Canyon. That is known usually as the Boulder Canyon site, but nevertheless it is actually Black Canyon. The dam so erected is proposed to serve the triple purpose of power, flood control, and storage. Perhaps I should state them in a different order—flood control, storage, and power, as power is a byproduct of these other works.

There are theoretical engineering reasons why flood control and storage works should be erected farther up the river and why storage works should be erected farther down the river; and I have not any doubt that given another century of development on the river all these things will be done. The problem that we have to consider, however, is what will serve the next generation in the most economical manner, and we must take capital expenditure and power markets into consideration in determining this. . .

² Hearings, Senate Committee on Irrigation and Reclamation, "Colorado River Basin," on S. Res. 320 (68th Cong., 2d sess.) (1925), p. 601; reprinted during debate on the Boulder Canyon Project Act, Congressional Record, December 8, 1928, p. 266; quoted in S. Rept. 592, 70th Cong. (1928), p. 10.

B. Ratification of the Colorado River Compact by All States Except Arizona

The compact, as executed at Santa Fe, November 24, 1922, was unconditionally approved by the legislatures of all States of the basin except Arizona, at the 1923 sessions (appendixes 215 through 220, inclusive). In several of the States, however, there was local opposition. Mr. Hoover made speeches in support of the compact in San Francisco, December 1, 1922; Los Angeles, December 6, 1922; Phoenix, December 8, 1922; and on January 21, 1923, submitted replies to a questionnaire of Congressman Hayden (appendix 205).

These efforts were successful, except in Arizona. The Sixth Arizona Legislature (1923) considered measures ranging from unconditional approval of the compact³ to a declaration that the compact was in direct conflict with the Arizona Constitution.⁴ The Senate passed a bill⁵ ratifying the compact with interpretations, by a vote of 10-9. In the House, a resolution which, as introduced, would have ratified the compact unconditionally,⁶ was amended by adding reservations, (1) requiring payment to Arizona of a royalty of \$5 per horsepower per annum in perpetuity for the use of waters of the Colorado River system; (2) limiting Mexico to 2,000,000 acre-feet per year;⁷ (3) "that the Gila River System, including the waters of said Gila River and streams tributary thereto, be not included, considered or involved in any way with the so-called Colorado River Compact,"⁸ and as amended was passed February 15, 1923.⁹ A motion to strike the reservations was defeated, 23-22.¹⁰ This measure died in the Senate.

³ H. Con. Res. 9, Sixth Arizona Legislature.

⁴ H. Con. Res. 5.

⁵ S. B. 136, Senate Journal, Sixth Arizona Legislature, p. 613. The conditions or interpretations were as follows:

"That Articles IV and VI of such 'Colorado River Compact,' as ratified and approved by this Act, are understood to mean, that the regulation and control of the Colorado River System, as in said compact defined, and limited only by the diversion and apportionment of the use of the waters thereof, for agricultural and domestic purposes, shall, as to that portion of such System, located within the area of any one of the signatory states, and including the full and unrestricted right of taxation by way of the imposition of a royalty in perpetuity or otherwise, upon electrical power generated from any structure within the boundaries of such State, be and remain, in perpetuity, exclusively, in such State."

⁶ H. Con. Res. 1 (House Journal, p. 71).

⁷ Substitute H. Res. 15 (House Journal, pp. 210-212).

⁸ H. Res. 16 (House Journal, pp. 221, 222).

⁹ House Journal, pp. 299, 300.

¹⁰ House Journal, p. 299.

Subsequently, on March 8, 1923, a measure to ratify the compact unconditionally¹¹ failed to pass the Arizona House by a tie vote, 22-22.¹²

By this narrow margin the Compact was subjected to a quarter century of conflict.

The compact was not finally approved by Arizona until 1944 (appendix 230).

C. Negotiations Between Arizona and California

After rejection of the compact in Arizona, an interval of a year or more elapsed, followed by a series of fruitless meetings between representatives of Arizona and California, some of which are cited in the margin.¹³ By 1925 it had become apparent that no agreement could be reached on which Arizona would ratify the Colorado River compact.

D. Ratification as a Six-State Compact

During the interim between the 1923 and 1925 sessions of the legislature, Mr. Delph Carpenter of Colorado initiated the proposal that the compact be ratified as a six-State agreement without awaiting action by Arizona. He stated:

The fact that the river formed a boundary between Arizona, California, and Nevada, and also the further fact that the entire Colorado River Canyon in Arizona is held by the United States as a Federal power reserve prompted me to make the suggestion without the feeling of any hazard to any of the other States in the event that the six or more State plan should be adopted.¹⁴

¹¹ H. Con. Res. 9.

¹² House Journal, p. 564.

¹³ In April and December 1925 conferences were held between a committee appointed by the California Legislature from its membership, and representatives of Governor Hunt of Arizona. In the latter, representatives of Nevada participated.

In December 1926 these conferences were resumed.

In January 1927 the California Legislature authorized a committee to meet with Arizona, and meetings of representatives of California, Nevada, and Arizona were held in Los Angeles. These were continued in February and May.

On August 22, 1927, a conference of governors and commissioners of all the basin States met at Denver, recessing September 5, reconvening September 19, and adjourning October 5.

In December 1927 a conference on power was held by representatives of the three States in San Francisco.

In January and March 1928 conferences were resumed in Washington.

¹⁴ Communication to Mr. Charles A. Dobbel, 1933. See also testimony of Mr. Hoover, hearings of Senate Committee on Irrigation and Reclamation, S. Res. 320 (68th Cong., 2d sess.), p. 600. See also Congressional Record, Senate (70th Cong., 2d sess.), December 8, 1928, p. 266.

In furtherance of this plan legislation was enacted approving the compact as a six-State agreement, and waiving the requirement of seven-State adherence, by Colorado (appendix 222), Nevada (appendix 223), New Mexico (appendix 224), and Wyoming (appendix 226). Utah enacted a similar act (appendix 225) but it was repealed by the act of January 19, 1927 (Laws 1927, p. 1). That State's adherence to the compact as a six-State document was not effected until enactment of the act of March 6, 1929 (appendix 229).

Six-State ratification was recommended to California by Mr. Hoover. A resolution to that effect was introduced in the California Assembly March 12, 1925. However, in its place the so-called Finney Resolution was adopted by the legislature April 8, 1925 (appendix 221), which included a stipulation that California's ratification should not become effective until Congress should authorize the construction of a dam providing at least 20,000,000 acre-feet of storage capacity. This had the effect of making the compact inoperative until further legislation had been enacted by the Federal Government. Subsequent efforts to modify or repeal this condition failed by large majorities.

Mr. Hoover, testifying on the third Swing-Johnson bill, on March 3, 1926, reported the situation as follows: ^{14a}

The compact was ratified by all of the States except Arizona, whose legislature did ratify it subject to certain reservations, but approval was refused by the governor. A subsequent attempt was made to ratify the compact on a six-State basis and failed in California.

The failure to secure solution to this primary question and thus clear the road for construction in the lower basin has been largely due to the desire of some groups in different States to assure themselves as a condition of ratification that their views as to the character of engineering works and their control should be adopted.

Except for one group in Arizona, I do not believe there has been any serious challenge to the equity established by the compact.

As a method for advancing solution of this problem it has been proposed that construction under authority of the act now before the committee should not be undertaken until California unreservedly ratifies the compact on a six-State basis, and that assurances should be given to the northern States that no water rights would accrue to the citizens of any noncompact State from storage of water as the result of this dam.

If adopted, this method at least composes a very large part of the interstate water conflict, leaving only the question of Arizona to be settled. It has been my feeling that if Arizona could confine her discussions with the lower States to the water rights only, solution could be found. The difficulty is that her officials have insisted upon injecting numbers of other questions as a condition for agreement on water rights.

^{14a} Hearings of the House Committee on Irrigation and Reclamation on H. R. 9826 and H. R. 6251, p. 45.

E. The Governors' Conference, 1927

In 1925, after the failure of negotiations among Arizona, California, and Nevada, the Governors of the seven Colorado Basin States met at Denver, Colo., August 22 to September 1, and September 19 to October 5, 1927, in an effort to devise means to bring about a seven-State ratification of the Santa Fe compact. This conference produced several resolutions, the most notable being a proposal for a settlement among the States of the lower basin:¹⁵

The governors of the States of the upper division of the Colorado River System suggest the following as a fair apportionment of water between the states of the lower division subject and subordinate to the provisions of the Colorado River Compact in so far as such provisions affect the rights of the upper basin states:

1. Of the average annual delivery of water to be provided by the states of the upper division at Lees Ferry, under the terms of the Colorado River Compact

- (a) To the State of Nevada, 300,000 acre-feet.
- (b) To the State of Arizona, 3,000,000 acre-feet.
- (c) To the State of California, 4,200,000 acre-feet.

2. To Arizona, in addition to water apportioned in subdivision (b), 1,000,000 acre-feet of water to be supplied from the tributaries of the Colorado River flowing in said State, and to be diverted from said tributaries before the same empty into the main stream; said 1,000,000 acre-feet shall not be subject to diminution by reason of any treaty with the United States of Mexico, except in such proportion as the said 1,000,000 acre-feet shall bear to the entire apportionment in 1 and 2 of 8,500,000 acre-feet.

3. As to all waters of the tributaries of the Colorado River emptying into the river below Lees Ferry, not apportioned in paragraph 2, each of the states of the lower basin shall have the exclusive beneficial consumptive use of such tributaries within its boundaries before the same empty into the main stream, provided the apportionment of the waters of such tributaries flowing in more than one state shall be left to adjudication or apportionment between said states in such manner as may be determined upon by the states affected thereby.

4. The several foregoing apportionments to include all waters necessary for the supply of any rights that now exist, including water for Indian lands for each of said states.

5. Arizona and California each may divert and use one-half of the unapportioned water of the main Colorado River flowing below Lees Ferry, subject to further equitable apportionment between the said states after the year 1963, and on this specific condition, that the use of said waters between the states of the lower basin shall be without prejudice to the rights of the States of the upper basin to further apportionment of water, as provided by the Colorado River Compact.

This proposal was not accepted either by Arizona or by California.¹⁶

F. Attempts at Federal Legislation, 1922-27

(1) *The first Swing-Johnson bill.*—On April 25, 1922, to carry out the recommendations of the Fall-Davis report,¹⁷ the first Swing-Johnson bill was introduced,¹⁸ taking its name from Congressman

¹⁵ The recommendations of the four upper-basin governors appear in 70 Congressional Record 172, 70th Cong., 2d sess. (1928).

¹⁶ See Congressional Record, 70th Cong., 2d sess., December 7, 1928, p. 233, hearings, House Committee on Irrigation, "Protection and Development of the Lower Colorado River" on H. R. 5773 (70th Cong., 1st sess., 1928), p. 292; first report of the Colorado River Commission of Arizona, hearings (supra), p. 29.

¹⁷ S. Doc. 142 (67th Cong., 2d sess.), "Problems of Imperial Valley and Vicinity" (1922).

¹⁸ H. R. 11449 (67th Cong., 2d sess.).

Philip D. Swing, and Senator Hiram W. Johnson, both of California. This bill authorized construction of the All-American Canal and of a dam at or near Boulder Canyon and an appropriation of \$70,000,000 to carry out the construction work. Hearings were held,¹⁹ but the bill was not reported out.

(2) *The second Swing-Johnson bill*²⁰ was introduced December 10, 1923. It was generally similar to the first Swing-Johnson bill, but went into more detail with respect to power. It was not reported out.

(3) *The third Swing-Johnson bill*²¹ was introduced in the House December 21, 1925. This bill was submitted to Secretary of the Interior Hubert Work, and Secretary of Commerce Hoover, who suggested revisions. It would have authorized a reservoir of 20,000,000 acre-feet, thereby satisfying the requirements of the California Finney Resolution.

Following the conference with the Secretary of the Interior, the foregoing bill was redrafted and reintroduced, on February 27, 1926.²² The latter is commonly referred to as the third Swing-Johnson bill, omitting reference to the measure of December 21, 1925.²³ The revised bill increased the capacity of the proposed reservoir to 26,000,000 acre-feet, and increased the authorization for appropriation to \$125,000,000. It directed the construction of a unified power plant by the Federal Government in the place of allocation of power privileges by the Secretary of the Interior, and authorized the issuance of bonds to finance construction.

Secretary Hoover had proposed a similar plan.²⁴ Testifying on the third Swing-Johnson bill on March 3, 1926,²⁵ Mr. Hoover said:

There has been great conflict over the character and location of the first works to be erected in the river. I believe the high dam should be erected in the vicinity of Boulder Canyon, which would serve a triple purpose of flood control, water storage, and development of power as the best compromise in all these views.

There are theoretical engineering reasons for establishing storage works farther up the river and flood-control works lower down the river. They will undoubtedly both be built in time. The practical problem, however, is what we need to do for the immediate generations, and it has always seemed to me that by one construction in this locality we can accomplish three purposes of storage, flood control,

¹⁹ Hearings, House Committee on Irrigation of Arid Lands (67th Cong., 2d sess.), on H. R. 11449; in five parts (1922-23).

²⁰ H. R. 2903 (68th Cong. 1st sess.), hearings, House Committee on Arid Lands, April-August 1923 and February-May 1924; S. 727 (68th Cong., 1st sess.), hearings, Senate Committee on Irrigation and Reclamation, December 1924-January 1925.

²¹ H. R. 6251. S. 1868 (69th Cong., 1st sess.).

²² H. R. 9826 (69th Cong., 1st sess.), hearings, House Committee on Irrigation and Reclamation, February-May 1926; S. 3331 (69th Cong., 1st sess.).

²³ H. R. 6251 (69th Cong., 1st sess.).

²⁴ Department of Commerce press release, January 16, 1926.

²⁵ Hearings of the House Committee on Irrigation and Reclamation on H. R. 9826, H. R. 6251, pp. 45-46 (March 3, 1926).

and power of sufficient extent to cover the next 40 years, and being the nearest point to market for power we would have a larger economic return from works established there.

There has also been great conflict over the method of financing the problem.

* * * * *

* * * In an endeavor to compose this conflict Secretary Work, Dr. Mead, head of the Reclamation Service, and myself proposed a short and, I believe, a simple plan by which the Federal Government should lend its credit to the issuance of bonds that no construction work or the use of this credit should be undertaken until valid contracts had been entered upon for the sale of power, the sale of domestic water, the sale of irrigation water in an amount that would cover amortization and interest on the bond issue necessary to carry out the project. There would, therefore, be no charge upon the taxpayer in the country as a whole. I am glad to say that this proposal seems to have met almost universal approval and has further composed a great line of conflicting interest.

* * * * *

By these three proposals—that is, the six-State ratification of the compact as a condition before any work is undertaken, by the requirement that contracts for the sale of water and power shall amount to a safe amortization and pay interest on any bond issue, and by the settlement of the initial rate—it would seem to me that we would have three compromises on the question of conflict that would settle probably 90 percent of the differences of opinion that have existed in respect to the method of development.

The third Swing-Johnson bill was favorably reported out of committees.²⁶

The bill was prevented from coming to a vote by a filibuster on February 22 and 23, 1927.²⁷

(4) *The fourth Swing-Johnson bill* ²⁸ was introduced by Mr. Swing in the House on December 5, 1927,²⁹ and by Senator Johnson in the Senate on December 6, 1927.³⁰

The House bill was reported favorably by the House Committee on Irrigation and Reclamation with amendments³¹ on March 15, 1928, after lengthy hearings.³² The bill passed the House with further amendments May 25, 1928³³ and went to the Senate.

²⁶ Report of the House Committee on Irrigation and Reclamation (five parts), December 22, 1926–January 28, 1927 (H. Rept. No. 1657, 69th Cong., 2d sess.); report of the Senate Committee on Irrigation and Reclamation (S. Rept. 654 on S. 3331, April 19, 1926, 69th Cong., 1st sess.).

²⁷ Congressional Record, 69th Cong., 2d sess., vol. 67, pt. 4 (1927), pp. 4396–4453, 4495–4563.

²⁸ H. R. 5773, S. 728 (70th Cong., 1st sess.).

²⁹ Congressional Record, 70th Cong., 1st sess., p. 97.

³⁰ Congressional Record, 70th Cong., 1st sess., p. 341.

³¹ Report of the Committee on Irrigation and Reclamation on H. R. 5773, March 15, 1928 (H. Rept. No. 918, 70th Cong., 1st sess.).

³² Hearings of the House Committee on Irrigation and Reclamation on H. R. 5773 (70th Cong., 1st sess.).

³³ Congressional Record, 70th Cong., 1st sess., May 25, 1928, p. 9990.

In the meantime the Senate had held hearings³⁴ on the companion bill, S. 728, and it had been reported favorably by the Committee on Irrigation and Reclamation with amendments.³⁵

The committee report, presented by Senator Johnson, described the purposes of the project as follows (p. 8):

PURPOSES OF PROJECT

The project will serve four main purposes:

(1) It will relieve a very serious and ever-present flood danger to the Imperial Valley as well as other sections along the lower river both in Arizona and California. Imperial Valley occupies a sink or basin lying from 100 to 350 feet below the head of the river. It has no drainage outlet. Hence its flooding means its permanent destruction.

(2) It will end an intolerable situation, under which the Imperial Valley now secures its sole water supply from a canal running for many miles through Mexico, as well as make possible the reclamation of public lands lying around the rim of the present cultivated section of the valley.

(3) It will conserve floodwaters of the river which in addition to providing for irrigation development will make it possible for cities of Southern California to contract for and secure a domestic water supply from the water thus saved.

(4) It will create a large amount of desirable hydroelectric power, making the project a financially feasible one.

The first session of the Seventieth Congress adjourned in May 1928 after considerable debate in the Senate and an Arizona filibuster.³⁶

Before the Congress adjourned, however, it enacted a preliminary measure, next referred to.

G. Creation of the "Sibert Board" (Appendix 301) and Its First Report (Appendix 302)

During consideration of the fourth Swing-Johnson bill a joint resolution was enacted³⁷ providing for a thorough investigation of the economic and engineering features of the proposed project. Under this authorization the Secretary of the Interior appointed the so-called "Sibert board," consisting of Maj. Gen. William L. Sibert, chairman, Charles B. Berkey, Warren J. Mead, Daniel W. Mead, and Robert Ridgway. The board rendered a report (appendix 302) on December

³⁴ Hearings of the Senate Committee on Irrigation and Reclamation on S. 728 (70th Cong., 1st sess.), commencing January 17, 1928.

³⁵ Report of the Senate Committee on Irrigation and Reclamation, March 20, 1928 (S. Rept. No. 592, 70th Cong., 1st sess.).

³⁶ Congressional Record, 70th Cong., 1st sess., p. 10668, et seq.

³⁷ Act of May 28, 1928 (45 Stat. 1011).

The full legislative history of this measure was as follows:

S. J. Res. 164.—May 28, introduced by Mr. Pittman, read twice, amended, and passed Senate; May 29, taken from table and passed House; May 29, approved (Public Res. No. 65, 70th Cong., 1st sess.), 69 Congressional Record (Senate), pp. 10200, 10257-10266, 10618, 10667, 10678; 69 Congressional Record (Senate), pp. 10731-10733, 10751.

3, 1928,³⁸ which was favorable to the project. It recommended certain changes which could be accomplished without significant difficulty.

The creation of this board was preceded by the appointment by Secretary of Interior Work in 1927 of a group of "special advisers," Hon. James R. Garfield, former Secretary of the Interior, Prof. William F. Durand, of Stanford University, Hon. James G. Scrugham, former Governor of Nevada, and Hon. Frank C. Emerson, Governor of Wyoming, who were requested to report on various "engineering, legal and economic phases of the project." The individual reports of these advisers were rendered in January 1928.³⁹

H. Passage of the Fourth Swing-Johnson Bill

Upon reconvening in December 1928 the Senate adopted the parliamentary device of first substituting H. R. 5773 for S. 728 on December 5, 1928, and thereupon by consent amending H. R. 5773 by striking out all after the enacting clause and inserting in lieu thereof the language of the Senate bill, S. 728.⁴⁰ The effect was to make the substance of the Senate bill the basic document for consideration and amendment. The bill was amended during debate and passed by the Senate on December 14, 1928.⁴¹

On December 18, 1928, the House agreed to the Senate amendment, without going to conference.⁴²

The bill was approved by President Coolidge on December 21, 1928.⁴³

The act did not become effective, however, until June 25, 1929, because of conditions precedent, hereinafter referred to. On the latter date, President Herbert Hoover, by proclamation, declared the act effective (appendix 503).⁴⁴

³⁸ See appendix 302: H. Doc. 446 (70th Cong., 2d sess.), "Report of the Colorado River Board on the Boulder Dam Project." For a supplemental report, rendered April 16, 1930, see appendix 303 herein.

³⁹ These reports were printed in hearings of the House Committee on Irrigation and Reclamation on H. R. 5773 (70th Cong., 1st sess., p. 469 et seq.).

⁴⁰ Congressional Record, 70th Cong., 2d sess., p. 67.

⁴¹ Congressional Record, 70th Cong., 2d sess., p. 603.

⁴² Congressional Record, 70th Cong., 2d sess., p. 837-838.

⁴³ 45 Stat. 1057.

⁴⁴ 46 Stat. 3000. The hearings record the important part played in the drafting of this legislation by W. B. Mathews and E. F. Scattergood of Los Angeles, George W. Malone and Charles P. Squires of Nevada, Gov. George Dern of Utah, Delph Carpenter and L. Ward Bannister of Colorado, M. J. Dowd and Charles L. Childers of Imperial Valley, Francis C. Wilson of New Mexico, and Gov. F. C. Emerson of Wyoming, among others, who advised their respective congressional delegations.

The provisions of this act are discussed in the following chapter.⁴⁵

⁴⁵ The complete legislative history of the Boulder Canyon Project Act was as follows:

H. R. 5773.—December 5, 1927, introduced by Mr. Swing, referred to the Committee on Irrigation and Reclamation; January 6, 9, 11, 12, 13, and 14, 1928, hearings by committee; March 15, committee report (H. Rept. No. 918); March 21, minority views (H. Rept. No. 918, pt. 2); March 24, minority views (H. Rept. No. 918, pt. 3); May 25, passed House; December 5, 1928, substituted for S. 728; December 14, passed Senate as amended; passed House; December 21, 1928, approved (Public Law No. 642, 70th Cong.) (69 Congressional Record (House), pp. 97, 4827, 4868, 9486-9513, 9622-9658, 9662-9664, 9759-9786, 9975, 9991, 10731-10733, 10786; 70 Congressional Record (Senate), pp. 56, 67-80, 161-176, 227-245, 264-269, 277-298, 301, 312, 314-340, 381-402, 445, 458-474, 503, 517-530, 565-603, 789, 990; 70 Congressional Record (House), pp. 203, 615-621, 830-838, 862, 897, 1011, 1012-1015).

S. 728.—December 6, 1927, introduced by Mr. Johnson, referred to Committee on Irrigation and Reclamation; January 17, 18, 19, 20, and 21, 1928, hearings by committee; March 20, committee report (S. Rept. No. 592; April 9, minority views (S. Rept. No. 592, pt. 2); December 5, amended by substituting H. R. 5773 (69 Congressional Record (Senate), pp. 341, 5025, 5276-5277, 5378, 5415, 5665, 6060, 6233-6297, 6594-6595, 6806-6808, 7047, 7144, 7198, 7242-7243, 7245-7253, 7346, 7387-7397, 7432-7433, 7437, 7515-7544, 7591, 7622-7627, 7630-7638, 7696-7697, 7704, 8247-8249, 8522-8524, 8527, 9058, 9144, 9223-9224, 9429, 9433-9443, 9449-9464, 9880, 9886-9891, 10058, 10200-10202, 10206, 10257-10266, 10271-10282, 10287-10310, 10460, 10462, 10464, 10465-10513, 10516, 10545, 10555-10571, 10618, 10668).

For annotations showing the legislative history of each section of the project act, see "Analysis of Boulder Canyon Project Act," California Colorado River Commission (1930), p. 17 et seq. For the text of amendments presented but rejected or withdrawn, see *id.*, p. 39 et seq.

Chapter IV

THE BOULDER CANYON PROJECT ACT

(The Swing-Johnson Act)

A. Major Objectives of the Boulder Canyon Project Act

This complex statute attempted to bring into balance two major forces: those seeking the construction of a storage reservoir and of an All-American Canal, and those seeking an interstate agreement for the protection of upper-basin water users if the proposed works should be built in the lower basin.

To these ends the act accomplished the following major objectives, in addition to providing for a number of important but subordinate ones. The major features were:

(1) *Authorization of construction of a storage dam in Boulder or Black Canyon*, for the declared purposes (sec. 1) of—

* * * controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking. * * *

(2) *Authorization of construction of the All-American Canal*, to connect a diversion dam on the Colorado River with the Imperial and Coachella Valleys, the canal and structures to be located entirely within the United States (sec. 1).

(3) *Ratification of the Colorado River Compact* (sec. 13 (a)), with the added provision that in the event that only six States should ratify the agreement, the compact should become effective as a six-State compact, if California should be one of the ratifying States, and if California should limit her use of water for the benefit of the other six States, by a formula stated in the Project Act (sec. 4 (a)).

The act also authorized a subordinate compact among the three States of the lower division, Arizona, California, and Nevada, for division of the water allocated to the lower basin by the compact (sec. 4 (a)); authorized in more general terms other agreements among the seven States (sec. 19); and authorized the Secretary of the Interior to make an investigation and report as to a comprehensive plan of development of the Colorado River (sec. 15).

The act contained also important financial and administrative provisions, discussed infra, which have come to be the identifying features of this project.

B. Conditions Precedent

The statute stated certain conditions precedent which should be met before the act should take effect for any purpose. It stipulated a second group which, after the effective date of the act, must be met before any appropriations should be obtainable under its authorizations. These two groups were as follows:

(1) *Conditions precedent to the effectiveness of the Project Act.*—Section 4 (a) stipulated that—

this Act shall not take effect and no authority shall be exercised hereunder and no work shall be begun and no moneys expended on or in connection with the works or structures provided for in this Act, and no water rights shall be claimed or initiated hereunder, and no steps shall be taken by the United States or by others to initiate or perfect any claims to the use of water appurtenant to such works or structures unless and until—

one or the other of two alternate conditions should be met: (1) Ratification by all seven States of the Colorado River Compact and declaration thereof by the President in a public proclamation; or (2) if seven States should have failed to ratify within 6 months from the date of the passage of the act, then until six of the States, including California, should have ratified it, waiving the requirement of article XI of the compact which stipulates seven-State approval; accompanied, in this second alternative, by enactment by California of a statute in prescribed terms, limiting her use of water; and proclamation by the President of six-State ratification.

(2) *Conditions precedent to appropriations under the authorization of the Project Act.*—Section 4 (b) stipulated that before any money should be appropriated for the construction of the dam or power plant or any construction work done or contracted for, the Secretary of the Interior should make provision for revenues by contract adequate in his judgment to assure repayment of all expenses of operation and maintenance and the repayment of the Federal investment within 50 years from the date of completion of such works, together with interest thereon made reimbursable under the act.

As to the All-American Canal, section 4 (b) stipulated that before money was appropriated for construction, or any construction work done, the Secretary of the Interior should make provision for revenues "by contract or otherwise" adequate in his judgment to assure payment of all expenses of construction, operation, and maintenance in the manner provided in the reclamation law.

C. Financial Structure

As indicated by the conditions precedent referred to supra, a characteristic of the act was its insistence on self-liquidation of the

investment. To implement this, the statute provided the following mechanics:

(1) *Creation of the Colorado River Dam fund.*—All revenues flowing from the Treasury for construction of the project, and all income flowing back from its operation, were required to pass through the Colorado River Dam fund (sec. 2 (a), 2 (b)). Appropriations were required for advances from the Treasury to the fund (sec. 2 (b)), as well as for expenditures out of the fund, including those for operation and maintenance (sec. 2 (c)). Appropriations to the fund of \$165,000,000 were authorized (sec. 2 (b)).

(2) *Separation of financing of irrigation and power features.*—Although the Colorado River Dam fund was established as a common financial channel for the Hoover Dam expenditures and revenues and the All-American Canal expenditures and revenues (sec. 2), the financing of the two project features was sharply segregated. No part of the power revenues of Hoover Dam could be used to reimburse the cost of the All-American Canal (sec. 1); these costs were required to be reimbursed in full under the reclamation law, i. e., by the lands benefited (sec. 1); but these lands, having vested rights to natural flow, were not to be charged for storage (sec. 1).

(3) *Repayment of the investment in Hoover Dam.*—The entire investment in Hoover Dam, power plant, and appurtenant structures was made reimbursable (sec. 2 (b), sec. 4 (b)). No part of the investment was written off, but \$25,000,000 was allocated to flood control, to be repaid out of 62½ percent of the surplus revenues during the amortization period (sec. 2 (b)). This period was set as 50 years from the date when energy was first ready for delivery (sec. 4 (b)). No provision was made for holding any part of the investment in suspense, although it was contemplated that the generating units would be installed over a period of several years. The investment in the dam, power plant, and appurtenant structures was required to be repaid with 4-percent interest, the interest to be included in the calculation of the power rates received by the fund (sec. 4 (b)), and to be paid over by the fund to the Treasury (sec. 4 (d)). The accounting practice later employed by the Reclamation Bureau on other projects, of collecting an interest component in the power rates but accounting for it to the Treasury as available for retirement of capital, was impossible under the Boulder Canyon Project Act.

(4) *Repayment of the investment in the All-American Canal.*—The entire investment in the All-American Canal was required to be repaid under the reclamation law, i. e., in 40 years without interest (sec. 4 (b)). In addition, the Imperial Irrigation District was required (sec. 10) to continue to pay the balance of \$1,600,000 which it had agreed to pay toward the cost of Laguna Dam under its contract of

October 23, 1918 (appendix 1103), although it never in fact utilized that structure as a diversion work.

(5) *Disposition of surplus power revenues.*—In the event that the power revenues should exceed the amortization requirements of the act, three provisions were made:

(a) Current application of 62½ percent of such excess revenues to the retirement of the \$25,000,000 flood-control allocation (sec. 2 (b)).

(b) Current payment of 37½ percent of such excess revenues to the States of Arizona and Nevada, one-half to each (sec. 4 (b)), in lieu of taxes which these States might have collected from the project if built by private capital.

(c) After repayment of all the interest-bearing debt, the revenues were to be kept in a separate fund to be expended in the Colorado River Basin as the Congress might direct (sec. 5).

(6) *Requirement of revenue contracts in advance of appropriations.*—Unlike statutes controlling certain other projects, which simply require that repayment contracts be obtained before water is delivered, the project act required that revenue contracts adequate to liquidate the investment, both in the dam and All-American Canal, be obtained in advance of construction and indeed in advance of appropriations (sec. 4 (b)). Such contracts were thus to be based necessarily on the Secretary of the Interior's judgment as to what the costs of construction would be and what revenues could be anticipated over a protracted period commencing after completion of construction. As noted *infra*, this construction period was about 7 years in the case of Hoover Dam; the All-American Canal is still incomplete, 16 years after execution of the first repayment contract. The requirement of firm revenue contracts, to remain executory until after completion of a long construction period, thus imposed extraordinary responsibilities on both the Secretary and the managements of the contracting agencies, as noted in more detail in chapter VI.

These contracts were, moreover, subject to a number of other controls, outlined below.

D. Provisions Controlling Power Contracts

(1) *Construction and operation of power plant.*—The act provided three alternatives for the installation and operation of the power plant. The Secretary of the Interior was authorized—

(a) To “construct and equip, operate, and maintain” the plant (sec. 1), and “control, manage, and operate the same” (sec. 6); or

(b) To “construct and equip” the plant (sec. 1), and “enter into contracts of lease of a unit or units of any Government-built plant, with right to generate electrical energy” (sec. 6); or

(c) To "enter into contracts of lease for the use of water for the generation of electrical energy" (sec. 6), in which case the lessees would install the machinery.

In any case, the United States was required to retain title to the "dam, reservoir", and also to the "plant, and incidental works" (sec. 6).

And in either of the three alternatives, section 6 required that energy was to be disposed of only by contract, under the controls provided by section 5 (*infra*).

(2) *Basic authority for power contracts.*—The act provided (sec. 5) for disposition of energy by the Secretary of the Interior, under general and uniform regulations (a phrase frequently repeated), at the switchboard (sec. 5), to "responsible applicants therefor who will pay the price fixed by the said Secretary with a view to meeting the revenue requirements herein provided for" (sec. 5 (c)). The applicants were required to execute contracts (sec. 5). In the event of conflicting applications, the act established standards of preferences (sec. 5 (c)), as noted below. It provided a maximum duration for any contract of 50 years from the date when energy was first ready for delivery thereunder (sec. 5 (a)), but provided that the holder, if not in default, should be entitled to a renewal under the laws and regulations existing at such time (sec. 5 (a)). It directed the Secretary to prescribe regulations conforming as nearly as possible to the regulations of the Federal Power Commission in stated respects, and to conform to the Commission's rules in others (sec. 6). And the Secretary and his contractors were subjected in their operations to the Colorado River compact (sec. 8 (a), 8 (b), 13 (b), 13 (c), 13 (d)). These compact requirements are referred to again, *infra*.

Because of their importance in the formulation of the power contracts, referred to in Chapter VI, the provisions relating to preferences, rate determination, and transmission are amplified below.

(3) *Preferences.*—The act provided for preferences to public bodies in the initial disposition of energy, in the event of conflicting applications. All contractors, preferred or otherwise, were required to "pay the price fixed by the said Secretary" (sec. 5 (c)). The conflicts were to be resolved by the Secretary "after hearing, with due regard to the public interest" (sec. 5 (c)), and "in conformity with the policy expressed in the Federal Water Power Act as to conflicting applications for permits and licenses" (sec. 5 (c)). However, preference was to be given first to a State, provided that it exercised its preference by contract made within 6 months after notice by the Secretary "and on the same terms and conditions as may be provided in other similar contracts made by said Secretary" (sec. 5). A reasonable time, to be fixed by the Secretary, was to be allowed for marketing of necessary bond issues by public agencies (sec. 5). However, once the energy

was allocated, no distinction was provided for in the terms of contracts, as between public and private agencies, either as to duration, price, renewal, or other terms, the regulations governing the awarding and renewal of contracts to be "general and uniform" (sec. 5).

(4) *Determination of rates.*—The act contained provisions of three general classes bearing on rates:

- (a) Those governing the initial rate determination;
- (b) Those governing periodic readjustments;
- (c) Those bearing on rates to prevail after the investment was amortized.

These are discussed below.

(a) **INITIAL DETERMINATION:** In general, it will be noted that the standard (1) for the initial determination was self-liquidation of the investment; (2) on periodic readjustment, a competitive level; and (3) after completion of amortization, such basis as Congress might then determine.

The first two of these situations, however, were cut across by the act's references to "excess revenues," to be applied in part to the retirement of the flood-control allocation (sec. 2 (b)), and in part to payments to Arizona and Nevada (sec. 4 (b)), and by the provision in section 5 (a) that contracts "shall be made with a view to obtaining reasonable returns," leaving some uncertainty, from an administrative standpoint, as to both the floor and the ceiling applicable to rate determinations. As noted later, the Boulder Canyon Project Adjustment Act of 1940 (appendix 801) was designed in part to remove these uncertainties.

(b) **READJUSTMENT:** Section 5 (a) required that power contracts contain provisions—

whereby at the end of fifteen years from the date of their execution and every ten years thereafter, there shall be readjustment of the contract, upon demand of either party thereto, either upward or downward as to price, as the Secretary of the Interior may find to be justified by competitive conditions at distributing points or competitive centers, and with provisions under which disputes or disagreements as to interpretation or performance of this contract shall be determined either by arbitration or court proceedings * * *

This was a major feature in which the Project Act was amended by the Boulder Canyon Project Adjustment Act (appendix 801), which substituted the "amortization standard" for the standard of "competitive conditions," and defined and restricted the field of arbitration.

(c) **RATES AFTER THE AMORTIZATION PERIOD:** Section 5 provided that after the repayments to the United States of all money advanced with interest—

charges shall be on such basis * * * as may hereafter be prescribed by the Congress.

(5) *Transmission.*—The Project Act did not authorize the construction of transmission lines by the United States. The provisions of the act relating to transmission all had reference to the transmission lines of the customers; i. e., a provision in section 5 (d) that a holder of a contract for more than 100,000 horsepower might be required to transmit power for a purchaser of less than 25,000 horsepower (sec. 5 (d)), a grant of rights-of-way for transmission lines (sec. 5 (d)), compensation to a contractor for property used for transmission in the event his contract should not be renewed (sec. 5 (b)); etc.

(6) *Summary of provisions controlling power contracts.*—The provisions of the Boulder Canyon Project Act governing power contracts, outlined above, were much more rigid than those of the large Federal projects which followed later. Among the distinctive features of the act in this respect were—

(a) The requirement that power contracts be executed in advance of appropriations and construction;

(b) The requirement that these contracts produce revenues adequate to amortize the entire investment;

(c) The absence of any write-offs whatsoever, the flood-control allocation offering relief only to the extent of possible deferment if revenues were inadequate to retire this allocation within 50 years;

(d) Provision for added payments, in lieu of taxes, to Arizona and Nevada;

(e) Provision for the retention of revenues, after amortization, in a fund for the development of the basin;

(f) Specific accounting procedure between the project and the Treasury, through a separate fund, to assure repayment to the Treasury of principal plus interest;

(g) The requirement that the customers build their own transmission lines;

(h) Provision for the operation of the power plant by the customers at their own expense;

(i) General provisions for preferences to public bodies, and particular provisions for preferences to States, as customers;

(j) After determination of preferences and allocation of energy, general and uniform treatment of all customers as to rates, duration of their contracts, and renewals.

E. Provisions Controlling Water Contracts

(1) *Basic authority.*—The basic authority of the Secretary of the Interior to contract for the storage and delivery of water for irrigation and domestic uses is contained in section 5 of the act, although important provisions appear elsewhere. Section 5, with respect to water contracts, reads:

That the Secretary of the Interior is hereby authorized, under such general regulations as he may prescribe, to contract for the storage of water in said reservoir and for the delivery thereof at such points on the river and on said canal as may be agreed upon, for irrigation and domestic uses * * * contracts respecting water for irrigation and domestic uses shall be for permanent service and shall conform to paragraph (a) of section 4 of this Act. No person shall have or be entitled to have the use for any purpose of the water stored as aforesaid except by contract made as herein stated.

(2) *Subjection to Colorado River Compact.*—All water contracts were subjected to the Colorado River Compact. These provisions are discussed in chapter IV (G).

(3) *Subjection to lower basin compact.*—The lower-division States were authorized to enter into a compact, and the Government's contracts were to be subject thereto, under certain circumstances. These provisions are developed in chapter IV (H).

F. Provisions Relating Specifically to the All-American Canal

(1) *Construction.*—Section 1 of the Project Act authorized the Secretary of the Interior to construct a main canal and appurtenant structures, to be located entirely within the United States, connecting Laguna Dam, or other diversion dam to be constructed, with the Imperial and Coachella Valleys. The investment was to be reimbursable as provided in the reclamation law, i. e., without interest. No charge was to be made for the storage and delivery of water, i. e. on account of Hoover Dam, but the All-American Canal debt was not to be paid out of Hoover Dam power or water revenues. Section 4 (b), discussed supra, required that, before money was appropriated or construction commenced, the Secretary should make provisions for revenues adequate in his judgment to insure payment of all expenses of construction, operation, and maintenance, under the reclamation law (which at that time required payment within 40 years, without interest).

(2) *Authorization for contract with Imperial Irrigation District.*—Section 10, while preserving the existing contract of October 23, 1918 (appendix 1103), between the United States and Imperial Irrigation District, which obligated the district to pay \$1,600,000 of the cost of Laguna Dam, authorized the Secretary to contract with the district for the construction of the canal and appurtenant structures and for the operation and maintenance thereof.

(3) *Status of contracts as water storage and repayment contracts.*—Section 5 authorized the Secretary to contract for the storage of water behind Hoover Dam, and for the delivery thereof "at such points on the river and on said canal as may be agreed upon." Such contracts, like the other storage contracts, were to be for "permanent service." No charge was to be made for such storage (sec. 1), as this area already

had a recognized right to natural flow, which was to be satisfied out of storage.¹ Section 6 of the act directed that the dam and reservoir be used, among other purposes, for "satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River Compact," an article which provided that present perfected rights should "attach to and be satisfied" from water stored "not in conflict with Article III."

The All-American Canal contracts thus were to be dual in character: (1) Water-storage contracts under section 5, and (2) repayment contracts under section 4 (b) and related sections. With respect to the latter function, the contracts were governed by several special provisions, *infra*.

(4) *Title*.—Section 7 authorized the Secretary, in his discretion, after repayment "of all money advanced, with interest" (i. e., after repayment of the advances for Hoover Dam), to transfer the title of the canal and appurtenant structures (except Laguna Dam) down to and including Syphon Drop, to the districts or agencies having "a beneficial interest therein," under some form of organization satisfactory to the Secretary, in proportion to their capital investments.

(5) *Power utilization*.—Section 7 of the act provided that—

The said districts or other agencies shall have the privilege at any time of utilizing by contract or otherwise such power possibilities as may exist upon said canal, in proportion to their respective contributions or obligations toward the capital cost of said canal and appurtenant structures from and including the diversion works to the point where each respective power plant may be located.²

(6) *Application of power revenues*.—Section 7 of the act provided that—

* * * The net proceeds from any power development on said canal shall be paid into the fund (Colorado River Dam fund) and credited to said districts or other agencies on their said contracts, in proportion to their rights to develop power, until the districts or other agencies using said canal shall have paid thereby and under any contract or otherwise an amount of money equivalent to the operation and maintenance expense and cost of construction thereof.³

(7) *Withdrawal of public lands*.—Section 9 directed the withdrawal from public entry of all public lands of the United States found by the Secretary to be practicable of irrigation. The Secretary was thereafter authorized to open them for entry in tracts not exceeding 160 acres, giving preference to persons who had served in the Army, Navy, or Marine Corps.

¹ See ch. I (D).

² Eight power plants are planned on the All-American Canal: Syphon Drop (constructed), Pilot Knob (proposed; see ch. XIV), and two constructed and four proposed on the canal west of Pilot Knob.

³ Cf. art. 14 (b) of the Mexican water treaty, appendix 1405, and correspondence of Imperial Irrigation District and the State Department (appendixes 1410, 1411, 1412).

G. Provisions Relating to the Colorado River Compact

(1) *Status at the time of enactment of the Project Act.*—As of the date of passage of the Boulder Canyon Project Act, December 21, 1928, the record on action by the States stood as follows:

The compact had been ratified as a seven-State document by California, Colorado, Nevada, New Mexico, Utah, and Wyoming.⁴

The compact had been ratified as a six-State compact by Colorado,⁵ Nevada,⁶ New Mexico,⁷ and Wyoming.⁸

Utah's ratification as a six-State agreement⁹ had been repealed.¹⁰

California's ratification¹¹ as a six-State document was conditional upon authorization by Congress of a 20,000,000 acre-foot reservoir.

Thus at the time of consideration of the Project Act only four of the seven States had firmly committed themselves to approval of the compact as a six-State agreement.

(2) *Approval of the Colorado River compact as a six- or seven-State agreement.*—Section 13 (a) of the act stated that the Colorado River Compact signed at Santa Fe on November 24, 1922—

* * * is hereby approved by the Congress of the United States, and the provisions of the first paragraph of Article 11 of the said Colorado River compact, making said compact binding and obligatory when it shall have been approved by the legislature of each of the signatory States, are hereby waived, and this approval shall become effective when the State of California and at least five of the other States mentioned, shall have approved or may hereafter approve said compact as aforesaid and shall consent to such waiver, as herein provided.

Section 4 (a) stipulated that the Project Act should not take effect and no authority be exercised thereunder unless and until—

. . . (1) the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming shall have ratified the Colorado River compact, mentioned in section 13 hereof, and the President by public proclamation shall have so declared,

or, in the alternative—

(2) if said States fail to ratify the said compact within six months from the date of the passage of this act then, until six of said States, including the State of California, shall ratify said compact and shall consent to waive the provisions of the first paragraph of Article XI of said compact, which makes the same binding and obligatory only when approved by each of the seven States signatory thereto, and shall have approved said compact without conditions, save that of such six-State approval, and the President by public proclamation shall have so declared, and, further, until the State of California, by act of its legislature, shall

⁴ Appendixes 215 to 220, inclusive.

⁵ Appendix 222.

⁶ Appendix 223.

⁷ Appendix 224.

⁸ Appendix 226.

⁹ Appendix 225.

¹⁰ Utah Laws 1927, p. 1.

¹¹ Appendix 221.

agree irrevocably and unconditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as an express covenant and in consideration of the passage of this act, that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the State of California, including all uses under contracts made under the provisions of this act and all water necessary for the supply of any right which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact.

The proclamation of June 25, 1929 (appendix 503), announced completion of the second of these alternatives, and the failure of the first.

(3) *Subjection of operations to the compact.*—The act repeatedly subjected all operations thereunder to the Colorado River Compact; thus, as to construction of works (sec. 1), as to the effective date of the act (sec. 4 (a)), as to operation of reservoirs, canals, and other works (sec. 8 (a)), as to the rights of the United States and those claiming under it to the waters of the river (sec. 13 (b)), and as to rights-of-way, etc., for water or power (sec. 13 (c)). Section 13 (d) subjected all uses to the Colorado River Compact, stipulating that the “conditions and covenants” referred to in the act—

shall be deemed to run with the land and the right, interest, or privilege therein and water right, and shall attach as a matter of law, whether set out or referred to in the instrument * * * or not * * * and shall be deemed to be for the benefit of and available to [each of the seven named States of the basin] and the users of water therein or thereunder, by way of suit, defense, or otherwise in any litigation respecting the waters of the Colorado River or its tributaries.¹²

H. Provisions Relating to a Lower Basin Compact

(1) *Authorization.*—Section 4 (a) of the act authorized the States of Arizona, California, and Nevada to enter into an agreement with respect to the waters available to the lower basin. The agreement so authorized, if ratified by the three States in the prescribed terms, would not require further action by Congress, differing in this respect from the usual authorization for negotiation of a compact subject to approval by the Congress after ratification by the States.¹³ The compact authorized by section 4 (a) was spelled out in some detail, as follows:

¹² This provision originated with L. Ward Bannister, Special Counsel, City of Denver.

¹³ Credit for the initial suggestion of a compromise along similar lines was given by Senator Pittman to Francis C. Wilson, Colorado River Commissioner for New Mexico (Congressional Record, 70th Cong., 1st sess., p. 10259, May 28, 1928). As to the character of the consent given here, see remarks of Senator Pittman, Congressional Record, December 12, 1928, p. 471. Cf. discussion of congressional consent to interstate compacts in Ely, “Oil Conservation Through Interstate Agreement” (1933), ch. VII, p. 166 et seq.

The States of Arizona, California, and Nevada are authorized to enter into an agreement which shall provide (1) that of the 7,500,000 acre-feet annually apportioned to the lower basin by paragraph (a) of Article III of the Colorado River compact, there shall be apportioned to the State of Nevada 300,000 acre-feet and to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity, and (2) that the State of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River compact, and (3) that the State of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of said State, and (4) that the waters of the Gila River and its tributaries, except return flow after the same enters the Colorado River, shall never be subject to any diminution whatever by any allowance of water which may be made by treaty or otherwise to the United States of Mexico but if, as provided in paragraph (c) of Article III of the Colorado River compact, it shall become necessary to supply water to the United States of Mexico from waters over and above the quantities which are surplus as defined by said compact, then the State of California shall and will mutually agree with the State of Arizona to supply, out of the main stream of the Colorado River, one-half of any deficiency which might be supplied to Mexico by the lower basin, and (5) that the State of California shall and will further mutually agree with the States of Arizona and Nevada that none of said three States shall withhold water and none shall require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses, and (6) that all of the provisions of said tri-State agreement shall be subject in all particulars to the provisions of the Colorado River compact, and (7) said agreement to take effect upon the ratification of the Colorado River compact by Arizona, California, and Nevada.

The quoted provision was inserted in the Boulder Canyon Project Act during debate in the Senate.¹⁴

¹⁴ For the legislative history of sec. 4 (a), see testimony of Northcutt Ely (p. 63), Hon. Carl Hayden (p. 233) and Hon. E. W. McFarland, (p. 248) hearings of the House Committee on the Judiciary on H. J. Res. 225 (80th Cong., 2d sess.). The principal amendments and references to debate on this provision are as follows (all references, except where noted, being to pages of the Congressional Record 70th Cong.):

(a) As reported by the Senate Committee on Irrigation and Reclamation, 1st sess., p. 5025.

(b) Amendment suggested by Senator Pittman, 1st sess., p. 10259.

(c) Amendment proposed by Senator Bratton, printed April 24, 1928 (not reprinted in the Congressional Record).

(d) Amendment proposed by Senator Phipps, printed May 19, 1928 (not reprinted in the Congressional Record).

(e) Amendment proposed by Senator Ashurst, printed May 29, 1928 (not reprinted in the Congressional Record).

(f) Amendment proposed by Senator Hayden, December 5, 1928 (2d sess., p. 162, et seq.).

(g) Amendment proposed by Senator Bratton, printed December 8, 1928 (not reprinted in the Congressional Record, but referred to in debate, 2d sess., p. 333 et seq.).

(h) Amendment proposed by Senator Phipps, printed December 10, 1928, 2d sess., p. 335, et seq., perfected, p. 339.

(i) Withdrawal of Hayden amendment, item (f) above, 2d sess., p. 382.

No agreement among the three lower-basin States has been entered into, either in the form specified by section 4 (a), or in any other manner.¹⁵

This paragraph, while interposed in an enumeration of conditions precedent to the effectiveness of the Project Act, did not make the ratification of the proposed lower-basin compact a condition precedent, stating it simply as an unconditional authorization.¹⁶ The conditions precedent, as pointed out elsewhere, did include a requirement that California, by act of her legislature, agree to a limitation on her uses.¹⁷ The paragraph requiring the California limitation is complementary and reciprocal to the paragraph authorizing the lower-basin compact, and the two must be read together to indicate the settlement proposed by Congress.¹⁸

(2) *Subjection of United States to operation of lower-basin compact.*— Section 8 (b) provided that the United States—

in constructing, managing, and operating the dam, reservoir, canals, and other works herein authorized—

and likewise—

all users of water thus delivered and all users and appropriators of waters stored by said reservoir and/or carried by said canal—

should be controlled by the terms of any compact entered into between the States of Arizona, California, and Nevada or any two thereof—

for the equitable division of the benefits, including power—

to which Congress might give its consent on or before January 1, 1929. If approved by Congress after that date—

¹⁴ Continued

(j) Amendment proposed by Senator Hayden to Phipps amendment, item (h) above, 2d sess., p. 383.

(k) Amendment proposed by Senator Bratton to Phipps amendment, 2d sess., p. 385.

(l) Second amendment proposed by Senator Hayden to Phipps amendment, item (h) above, 2d sess., p. 388.

(m) Perfecting amendments to the Phipps amendment, item (h) above, 2d sess., p. 459.

(n) Third amendment proposed by Senator Hayden to the Phipps amendment, item (h) above, 2d sess., p. 460.

(o) Revision proposed by Senator Pittman to the third Hayden amendment (item (n) above), to the Phipps amendment (item (h) above), 2d sess., p. 469.

(p) Adoption of Phipps amendment as amended, 2d sess., p. 472.

(q) Subsequent discussion, 2d sess., p. 576.

¹⁵ See references to lower-basin conferences in chs. III (C) and VI (B).

¹⁶ See colloquy between Senators Pittman and Johnson, Congressional Record, 70th Cong., 2d sess., p. 472.

¹⁷ See ch. IV (G) supra.

¹⁸ Cf. Arizona Laws 1939, ch. 33, containing the text of a proposed lower-division compact, combining the provisions as to California found in sec. 4 (a) of the Project Act with provisions as to Arizona derived from, but modifying, the proposal contained in the last paragraph of that section.

such compact shall be subject to all contracts, if any, made by the Secretary of the Interior under section 5 hereof prior to the date of such approval and consent by Congress.

In short, if two of the three States should agree upon a compact with the approval of Congress prior to January 1, 1929, the contracts would be subject to the lower-basin compact; but if the compact should be entered into after the contracts, then the compact itself should be subject to the terms of prior contracts.

As pointed out in chapter VI, negotiation and execution of the power contracts was withheld for a protracted period to enable the States to attempt to work out an agreement among themselves, but none was reached.¹⁹

I. Provisions for Further Development of the River

(1) *Investigations.*—Section 15 directed the Secretary to make investigations and public reports of the feasibility of projects in the seven States of the basin and to formulate a comprehensive scheme for control and the improvement and utilization of the waters of the river and its tributaries. It authorized the appropriation of \$250,000 for that purpose from the Colorado River Dam fund.²⁰ Section 11 authorized an investigation of the Parker-Gila project in Arizona.

(2) *Comprehensive plan: Administration.*—Section 16 of the act directed that in furtherance of any comprehensive plan formulated hereafter and to the end that the Boulder Canyon project might be administered as a unit in such control, improvement, and utilization, any commission or commissioner authorized by a ratifying State should have the right to act in an advisory capacity with the Secretary of the Interior in the exercise of any authority under the provisions of sections 4, 5, and 14 of the act (secs. 4 and 5, dealing with finances and authorization for a lower-basin compact; sec. 5, dealing with power and water contracts; and sec. 14 dealing with the reclamation law) and should at all times have access to records of all Federal agencies empowered to act under those sections.²¹

(3) *Supplemental compacts.*—Section 19 authorized the seven States to enter into compacts supplemental to the Colorado River compact and consistent with the Project Act—

* * * for a comprehensive plan for the development of the Colorado River and providing for the storage, diversion, and use of the waters of said river * * *

¹⁹ See report of Hon. William J. Donovan, Federal representative in tri-State negotiations, to Secretary of the Interior Wilbur, February 14, 1930 (Congressional Record, June 26, 1930, p. 12202).

²⁰ For subsequent activity under this authorization, see ch. XII (L).

²¹ Cf. art. V of the Colorado River Compact. For references to activities of the "Committee of Fourteen" and "Committee of Sixteen," representing the basin States, see chs. VIII (A) and XIV (C), *infra*.

Subject, however, to the participation by a Federal representative in the negotiations and conditioned upon subsequent approval by the legislatures of each State and by the Congress. Such compacts were authorized to include the subjects of construction of dams, headworks, and other diversion works or structures for flood control, reclamation, improvement of navigation, division of water, or other purposes, the construction of powerhouses or other structures for the development of water power and the financing of the same and the creation of interstate commissions and corporations, authorities, or other instrumentalities.

No compact under that authorization has been consummated.

(4) *Investigation of Parker-Gila project.*—Section 11 authorized investigation of the proposed Parker-Gila Valley reclamation project in Arizona and authorized appropriations for such purpose.²²

J. General Provisions

The act contained a number of miscellaneous or general provisions. Thus—

(1) *Regulations.*—The act was explicit in requiring that all operations thereunder be controlled by general regulations, in section 5, with respect to storage and delivery of water and generation and delivery of electrical energy; section 5 (b), with respect to renewals; section 5 (d), authorizing the Secretary to require certain purchasers of electrical energy to transmit energy for others; section 6, as to—

maintenance of works, * * * maintenance of a system of accounting, control of rates and service in the absence of State regulation or interstate agreement, etc.

(2) *Provisions respecting acquisition or use of property.*—Section 1 of the act authorized the Secretary—

to acquire by proceedings in eminent domain, or otherwise, all lands, rights-of-way, and other property necessary for said purposes.

Section 5 (d) authorized the use of public and reserved lands of the United States necessary or convenient for the construction, operation, and maintenance of main transmission lines.

(3) *Title.*—Section 6 of the act stipulated that—

The title to said dam, reservoir, plant, and incidental works shall forever remain in the United States.

Note, however, the authorization in section 7 for transfer of title after repayment, with respect to one portion of the All-American Canal below Syphon Drop.

²² For subsequent references to this project, see chs. XII (B) and XII (H).

(4) *Claims of the United States.*—Section 17 stipulated that—
Claims of the United States arising out of any contract authorized by this Act shall have priority over all others, secured or unsecured.²³

(5) *Reference to the reclamation law.*—Section 14 provided that—
This Act shall be deemed a supplement to the reclamation law, which said reclamation law shall govern the construction, operation, and management of the works herein authorized, except as otherwise herein provided.

(6) *Preservations of rights of the States.*—Section 18 provided that nothing in the act should be construed as interfering with such rights as the States now have—

* * * either to the waters within their borders or to adopt such policies and enact such policies and enact such laws as they may deem necessary with respect to the appropriation, control, and use of waters within their borders, except as modified by the Colorado River compact or other interstate agreement.²⁴

(7) *Mexico.*—Section 20 of the act directed that—
Nothing in this Act shall be construed as a denial or recognition of any rights, if any, in Mexico to the use of the waters of the Colorado River system.

The following chapter outlines the manner in which the conditions precedent to the effectiveness of the project act were met, and the manner in which the statute was proclaimed to be in operation.

²³ In *Malan v. Imperial Irrigation District*, Superior Court, Imperial County, Nos. 15460, 15454, in re the validation of the All-American Canal repayment contract, the Court's opinion, dated May 24, 1933, held that this provision was intended to establish priority over private claims, but not to interfere with the taxing power of the State.

²⁴ Cf. art. IV (c) of the Colorado River Compact; act of June 17, 1902 (Reclamation Act), sec. 8, 32 Stat. 390; act of July 26, 1866, 14 Stat. 251.

Chapter V

COMPLIANCE WITH CONDITIONS PRECEDENT TO EFFECTIVENESS OF THE BOULDER CANYON PROJECT ACT

A. Ratification of the Compact by Six States (Appendix 501)

As previously noted, as of the date of approval of the Boulder Canyon Project Act, December 21, 1928, only four of the seven States had approved the agreement as a six-State document: Colorado,¹ Nevada,² New Mexico,³ and Wyoming.⁴

California had approved it as a seven-State compact unconditionally,⁵ and as a six-State compact subject to the condition that Congress should authorize construction of a dam providing a reservoir capacity of at least 20,000,000 acre-feet.⁶

Although the Project Act met this condition of the California ratification, by authorizing a dam to store not less than 20,000,000 acre-feet⁷ and presumably further ratification by California would not have been required, the California Legislature at the 1929 session adopted three acts bearing on ratification: (1) the act of January 10, 1929,⁸ ratifying the agreement as a seven-State document; (2) the act of March 4, 1929,⁹ approving it as a six-State agreement, and deleting the provisions of the so-called Finney Resolution, which made the action of the California Legislature conditional upon authorization by Congress of a 20,000,000 acre-foot reservoir; and (3) the "limitation act" of March 4, 1929,¹⁰ discussed in chapter V (B), *infra*.

Utah, by the act of March 6, 1929,¹¹ thereafter approved the agreement as a six-State document.

¹ Appendix 222.

² Appendix 223.

³ Appendix 224.

⁴ Appendix 226.

⁵ Appendix 215.

⁶ Appendix 221.

⁷ Section 1 of the project act (45 Stat. 1057).

⁸ Appendix 227.

⁹ Appendix 228.

¹⁰ Appendix 502.

¹¹ Utah (appendix 229): The Attorney General, in an opinion dated June 22, 1929 (36 Ops. Atty. Gen. 72), held that the ratification by Utah (act of March 6, 1929, Laws 1929, ch. 31), which had been challenged as being conditional, satisfied the requirements of sec. 4 (a) of the Boulder Canyon Project Act.

It was ruled informally by the Solicitor of the Department of the Interior that it was unnecessary for the Legislatures of Colorado, Nevada, New Mexico, and Wyoming to reenact ratification of the compact as a six-State agreement following the passage of the Project Act, and that their ratifications prior thereto complied with the conditions of the act.

B. Enactment of the California Limitation Act (Appendix 502)

The Legislature of California, in compliance with section 4 (a) of the Project Act, enacted the act of March 4, 1929,¹² stating:

In the event the Colorado river compact * * * is not approved within six months from the date of the passage of * * * the "Boulder canyon project act" * * * by the legislatures of each of the seven states signatory thereto, * * * then when six of said states, including California, shall have ratified and approved said compact * * * and the President by public proclamation shall have so declared * * * the state of California as of the date of such proclamation agrees * * *.

to the limitation proposed by section 4 (a) of the project act.

C. Proclamation of Effectiveness of the Compact as a Six-State Compact, 1929 (Appendix 503)

Proclamation.—On June 25, 1929, President Hoover promulgated Public Proclamation No. 1882,¹³ reciting:

(a) That the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming have not ratified the Colorado River Compact mentioned in Section 13 (a) of said act of December 21, 1928, within six months from the date of the passage and approval of said act.

(b) That the States of California, Colorado, Nevada, New Mexico, Utah and Wyoming have ratified said compact and have consented to waive the provisions of the first paragraph of Article XI of said compact, which makes the same binding and obligatory only when approved by each of the seven States signatory thereto, and that each of the States last named has approved said compact without condition, except that of six-State approval as prescribed in Section 13 (a) of said act of December 21, 1928.

(c) That the State of California has in all things met the requirements set out in the first paragraph of Section 4 (a) of said act of December 21, 1928, necessary to render said act effective on six-State approval of said compact.

(d) All prescribed conditions having been fulfilled, the said Boulder Canyon Project Act approved December 21, 1928, is hereby declared to be effective this date.

¹² Appendix 502: California Stats. 1929, p. 38.

¹³ 46 Stat. 3000.

D. Ratification by Arizona as a Seven-State Compact, 1944 (Appendix 230)

Arizona, by the act of February 24, 1944,¹⁴ undertook to ratify the Colorado River compact as a seven-State compact, notwithstanding the declarations in the Presidential proclamation of June 25, 1929. There has been no determination as to the effect of Arizona's ratification upon the legislation collectively comprising the six-State compact.¹⁵

E. Conditions Precedent Remaining To Be Met

President Hoover's proclamation of June 25, 1929, formalized compliance with the conditions precedent to effectiveness of the act. There remained, however, the conditions precedent to the making of appropriations under the authorization of the project act: these were the requirement of revenue contracts to liquidate the cost of Hoover Dam and power plant, discussed, *infra*, in chapters VI, VII, and VIII; and the requirement of repayment contracts with respect to the All-American Canal. These are discussed in chapters X and XI.

¹⁴ Arizona Laws 1944, p. 427.

¹⁵ Appendix 501.

Chapter VI

THE HOOVER DAM POWER CONTRACTS OF 1930

A. Determinations Preceding the Contract Negotiations

Before negotiating the power contracts required by the project act, it was necessary to determine: (a) The costs to be amortized; (b) the quantity of energy, etc., available, involving a forecast of the water supply during the amortization period; and (c) the competitive value of the energy. These determinations are referred to below.

The following is reprinted from the first edition (p. 15):

[1. *Costs to be amortized*].—Since these contracts must provide revenue to amortize the cost of the dam, the first undertaking was to verify the estimates of the dam's costs and to set up a definite goal for revenues. The exhaustive studies made under the Commissioner of Reclamation, Dr. Elwood Mead, Chief Engineer R. F. Walter, and their predecessors, Arthur P. Davis and F. E. Weymouth, had been supplemented by the review of the so-called Sibert board. The latter was a commission of engineers appointed pursuant to an act of Congress, whose principal function was to pass upon safety features of the proposed works. The result of all these studies, as reported by Commissioner Mead, fixed the estimated cost of the Boulder Canyon Dam and power plants at \$109,446,000. Interest upon this sum during construction was estimated to amount to \$11,554,000, or a total estimated cost of \$121,000,000. During the negotiation of the contracts the Sibert board authorized an increase in the height of the dam, to raise the water level 25 feet; and, while that board estimated that the higher dam could be built within the original estimate, the Bureau of Reclamation added for safety another \$4,392,000 to the estimate, making an aggregate investment of \$125,392,000. But as the project act provided that \$25,000,000 of this cost might be allocated to flood control, to be repaid out of surplus revenues, the amount remaining to be met by firm power sales became fixed at \$100,392,000. But of this sum, \$17,717,000 was estimated to be the cost of power machinery, which it was contemplated would be financed by the lessees of the power plant. This reduced the net investment, exclusive of flood control and the cost of machinery, to \$82,675,000. Computed against an amortization period of 50 years, interest at 4 percent on this investment (required by the project act to be paid to the Treasury) was estimated at \$108,107,007. The total which the Secretary was required to recover from sale of power during a 50-year period thus became \$206,920,024.¹

[2. *Quantity of water available for power generation*].—Preliminary studies of the quantity of water available for generation of power had been carried forward under the direction of Mr. E. B. Debler, hydraulic engineer of the Bureau of

¹ For tables and graphs, see appendix 43 to the first edition: "Financial operation."

Reclamation.² Revised to January 31, 1930, these computations showed that with a dam 557 feet high, we would have available on completion 3,600,000,000 kilowatt-hours of firm energy per year; with a dam 575 feet high, 4,240,000,000; and with a dam 582 feet high, 4,330,000,000. During the negotiation of the contracts the figure 4,240,000,000 was assumed. During negotiations the decision of the Sibert board, permitting an increase in the water level to 582 feet, raised this output by 90,000,000 kilowatt-hours, and this increment was separately disposed of.³

[3. *Competitive value of energy*].—The third basic element of information required before undertaking negotiations was the price which could be realized for this power. That price was subject to control by two factors:

(a) The Secretary was required by the Project Act to obtain a sufficient rate to amortize the cost of the dam, but (b) the act required that the amount be determined by "competitive conditions at distributing points or competitive centers"; and this latter would have been a determining factor even in the absence of statutory direction. As the only market large enough to absorb sufficient energy to yield the required revenues lay in southern California, and was located over large oil and gas deposits, the cost of energy provided by oil and gas necessarily fixed the comparative value of Boulder Canyon power. A study was accordingly undertaken by R. F. Walter, Chief Engineer, L. N. McClellan, chief electrical engineer for the Bureau, Prof. W. F. Durand, of Stanford University, and others. Their report, rendered on September 10, 1929, computed the value of Boulder Canyon power at the switchboard on a series of assumptions as to costs of private and public development, all of which reckoned back to a value for the use of falling water, amounting to about 1.63 mills per kilowatt-hour.⁴

The amount of money to be brought in by sale of power at the rate stated would, of course, be subject to certain assumptions. First, the Project Act required the readjustment of rates to accord with competitive conditions at competitive centers 15 years after the date of the contract, and every 10 years thereafter. Second, the amount of water available for generation of power would decrease by virtue of upstream use and gradual silting of the reservoir. Third, the amount would be affected by the number of years covered by each power contract. * * *

² A report, "Hydrology of Boulder Canyon Reservoir," by E. B. Debler (summarized by its author in "The Hoover Dam Contracts," first edition, appendix 29, pp. 473, 477), gave the following estimate of the water supply during the 50-year amortization period:

Development above Boulder Canyon

	1928	1938	1988
Irrigated area.....acres..	1,717,000	2,040,000	3,368,000
Capacity of irrigation reservoirs.....acre-feet..	662,000	-----	2,933,000
Capacity of power reservoirs.....do.....	10,000	-----	8,100,000
Transmountain diversions.....acre-feet annually..	116,000	180,000	621,000
Surface area of irrigation reservoirs.....acres..	27,800	} 60,000	{ 86,400
Surface area of power reservoirs.....do.....	2,000			172,000
Mean depletion for irrigation consumptive use, transmountain diversions and reservoir losses.....acre-feet annually..	2,760,000	3,481,000	6,595,000
Mean annual inflow to Boulder Canyon.....acre-feet..	15,730,000	15,009,000	11,895,000

³ Appendix 303.

⁴ See appendix 30 to the first edition.

B. Negotiations

(1) *Invitations for applications.*—The following is reprinted from the first edition (p. 17):

Invitations for applications for the purchase of power were published on September 10, 1929. October 1 was fixed as the application date. Upon that date the Secretary had at hand applications from 27 parties. Some of these applications were conditional and others were indefinite; but the three principal applicants were the City of Los Angeles, the Southern California Edison Co., and the Metropolitan Water District of Southern California. Each of the first two asked for the entire power output, which was assumed at that date, prior to decision on the final height of the dam, to be 3,600,000,000 kilowatt-hours. The Metropolitan Water District asked for about half that amount of energy and the State of Nevada asked for a third of it. The total of the applications was thus well over three times the amount of power available.⁵

(2) *Tentative allocation.*—The following is reprinted from the first edition (p. 18):

The Secretary was accordingly faced with the problem of allocating the energy available among the conflicting applicants.

The allocation of the energy was undertaken on the premise that the Project Act required that the public interest be the governing factor, and that the first requisite in protecting the public interest was to provide adequate security for the taxpayers' money. It was recognized that the absorption of this quantity of power represented a serious problem and that adequate security for the Government required that the risk be spread among several agencies. It was recognized also that it was desirable that as broad a regional benefit be obtained from this power as was consistent with financial soundness. The dam would rest on the border between Arizona and Nevada, and it was desired to give them an opportunity to use its energy; but neither of them was in a position to make a firm contract for use of any power within its borders. The California applicants included agencies serving cities, great rural areas, and the Metropolitan Water District, which proposed to construct an aqueduct from the Colorado River to the Coastal Plain. It was recognized that the water needs of this area were the great motive force behind the financing of the dam.

On October 21 the Secretary announced a tentative allocation of power.

November 12, 1929, was set for hearings on protests to the proposed allocation.⁶

(3) *Hearing, November 12-13, 1929.*—All of the major parties interested in power except Arizona were represented at the hearing held by the Secretary of the Interior, November 12-13, 1929, in Washington. Arizona declined to attend.

During the hearing Secretary Wilbur announced three points of policy. These concerned (1) the desirability of spreading the benefits of the project as widely as possible; (2) the limitations imposed by

⁵ For a tabulation of the applications, see appendix 32 to the first edition.

⁶ The tentative allocation of October 21, 1929, appears as appendix 33 to the first edition.

the necessity for a sound economic basis; and (3) the desirability of having all parties contract with the Government rather than with each other.

At the close of the hearing, November 13, 1929, Secretary Wilbur made the following statement:⁷

I propose not to complete these contracts before the second week in December in the hope that we can bring Arizona into the picture, and I assign each of you and all of those who represent you as agents to make this if possible a seven-State compact.

It will be a most unfortunate thing in this great series of epochs that the West is necessarily to go through in the development of the water, not to carry this thing through upon a uniform program. This must go through so when the Flaming Gorge and all the other projects come on, as they will, we can have a united front against all of those who do not have the vision to see the necessity. Do not forget in your particular thing that you are involved in that your real interest is in this country and its development, and that the western part of the United States must depend upon water and its controlled use for its further development. We must not lose this first battle since otherwise years must elapse before we can do as we should in the maturing of the necessary plans for the West. The easy things have all been done. We are now facing the hard things like this where we must all get together. I hope we may close this conference in that spirit.

Active negotiation of the contracts was suspended until the latter part of February, 1930 to afford an opportunity for further negotiations among the lower-basin States.

(4) *Negotiations among the States.*—Section 8 (b) of the Project Act held out an invitation to the States of Arizona, California, and Nevada “or any two thereof” to enter into a compact for division of the water allocated to the lower basin by the Colorado River compact and—

for the equitable division of the benefits, including power, arising from the use of water accruing to said States.

If such compacts should be negotiated and approved by the States and by Congress prior to January 1, 1929, section 8 (b) stipulated that the United States and its contractors “shall observe and be subject to” such compact; but if the States should approve the agreement or Congress give its consent after January 1, 1929, it was provided—

that in the latter case such compact shall be subject to all the contracts, if any, made by the Secretary of the Interior under section 5 hereof prior to the date of such approval and consent by Congress.

⁷ Appendix 33-A, first edition.

While plans for construction of the dam went forward, the Department made a series of efforts to bring the three States into accord.⁸ None of these attempts was successful.⁹

(5) *Conferences with congressional committees.*—Following the breakdown of the final attempt at a lower-basin agreement, Secretary Wilbur invited the members of the House and Senate Committees on Irrigation and Reclamation to a conference in his office, held February 15, 1930, to advise as to further course of action: whether to continue with an effort to reach a settlement of water and power questions by compact, or to abandon the effort and (4) *Negotiations among the States* between the Interior Department and the proposed compact.

The consensus of opinion was that negotiations should proceed at once with the negotiation of the new compact that appropriations could be sought before adjournment of the present session of Congress.

⁸ From February 14 to March 5, 1929, representatives of the lower-basin States was held at Salt Lake City and March 6 to 8 at Albuquerque, N. Mex. Col. W. J. Donovan presided as representative of the Federal Government. Representatives of the upper-basin States attended as observers.

On April 5 to 7, 1929, informal conferences between California and Arizona were held at Los Angeles.

On May 28 to June 16, 1929, the lower-basin State commissioners met informally in Washington.

On August 28, 1929, at Salt Lake City, representatives of Arizona, California, Nevada, Colorado, New Mexico, Utah, and Wyoming met primarily on power matters.

On January 21, 1930, the lower-basin commissioners resumed formal conference at Reno, Nev., under the chairmanship of Chairman W. J. Donovan. At the suggestion of the Secretary of the Interior, advisers were added by each State: For Arizona, Senator Carl Hayden; for Nevada, Senator Pittman and Thomas Cole; for California, W. J. Carr.

On February 6 to 9, 1930, the commissioners met at Phoenix, having recessed at Reno. They failed to agree.

Matters remained in this inconclusive state. Extended conferences were held in 1933-34 and again in 1940, and once more in 1943-44 with reference to the proposed Arizona contract. (See ch. IV.)

⁹ For a summary of the negotiations between Arizona, California, and Nevada, 1929-30, see the testimony of Col. William J. Donovan, hearings on the second deficiency appropriation bill for 1930 (46 Stat. 860), Senate, pp. 173-185, 192-193; Congressional Record, 71st Cong., 2d sess., June 26, 1930, p. 12203 et seq.

(6) *Negotiations in the field.*—Negotiations among the conflicting applicants, and among the lower-basin States, having failed to crystallize in an agreement, direct negotiations with the individual power applicants were initiated in Los Angeles in February 1930.¹⁰

On March 20, 1930, an agreement was reached among the southern California applicants in the form of a recommendation to the Secretary for the allocation of 64 percent of the total firm energy which the Secretary's tentative allocation of October had proposed be made available to California.¹¹

The formulation of an acceptable formula, which would commit California interests to pay for 100 percent of the firm energy, but enable the Secretary to draw back 36 percent of it for use in Arizona and Nevada at any time during 50 years, proved to be one of the most serious difficulties in the negotiations.

Agreement on all of these points was finally reached on April 25, 1930, and embodied in general regulations, a lease, and energy contracts, referred to below.¹²

C. Regulations and Contracts

(1) *"Underwriting" contracts of 1930.*—On April 25 regulations were promulgated, and on April 26 two contracts executed thereunder, satisfying the revenue requirements of the Boulder Canyon Project Act. The first was a lease of power privileges,¹³ to which the United States, the city of Los Angeles (through its department of water and power), and the Southern California Edison Co., Ltd., were parties. The second was a contract for the purchase of electric energy to which the United States and the Metropolitan Water District of Southern California were parties.¹⁴

The general framework of these instruments established the city and company as several, not joint, lessees of the power plant, obligated to generate at cost for certain other allottees, of which the Metropolitan Water District was the major one. Allottees other than the Metropolitan Water District were accorded by these regulations and contracts various time periods within which to execute their separate contracts with the United States for the purchase of energy. Ultimately, the Los Angeles Gas & Electric Corp., the Southern

¹⁰ See first edition, pp. 20-24. The negotiations, under the direction of Secretary Wilbur and Commissioner of Reclamation Elwood Mead, were carried on for the Department by Northcutt Ely, assistant to the Secretary, R. J. Coffey and L. N. McClellan of the Bureau of Reclamation, and Louis C. Hill, consulting engineer.

¹¹ Appendixes 34 and 35, first edition.

¹² Appendixes 1-9, first edition.

¹³ Appendix 2, first edition.

¹⁴ Appendix 3, first edition.

Sierras Power Co. (now California Electric Power Co.), the cities of Pasadena, Burbank, and Glendale and (considerably later) the States of Nevada and Arizona entered into such contracts. Each of these agreements carried a uniform clause on allocation of energy, the general effect being to obligate the California contractors for 100 percent of the firm energy, but requiring them to yield 36 percent thereof to Arizona and Nevada, under a "draw-back" provision which entitled those States to take blocks of power on specified notice and to relinquish its use on like notice. The city and the Edison Co. were required to underwrite these State allotments in the sense that they were required to take all energy not contracted for by the States. This allocation is illustrated by table 1, infra.

(2) *Completion of other power contracts, 1931.*—By November 16, 1931, the periods for execution of firm contracts (other than by Nevada and Arizona) had expired, and contracts had been executed under which the following became the fixed allocations, in terms of percentages of 4,240,000,000 kilowatt-hours of firm energy annually:

TABLE 1.—Allocation of Hoover Dam energy under regulations of Apr. 25, 1930, as amended to Nov. 16, 1931

Allottee	Firm energy (4,240,000,000 kilowatt-hours per year, diminishing 8,760,000 kilowatt-hours per year)			Secondary energy (percentage)
	Minimum which United States must supply (percentage)	Allottee's obligation if energy is available (percentage)	Maximum which allottee may demand under various conditions (percentage)	
Arizona	18	None	22	None.
Nevada	18 (To each State for use in the State only.)	None (Each State has the option to take and relinquish energy on specified notice.)	22 (Its own allocation plus 4 percent not taken by the other State prior to Apr. 25, 1950; the total for both States not to exceed 36 percent.)	None.
Metropolitan Water District	36 (For pumping Colorado River water into and in its aqueduct.)	36	72 ¹ (Its own minimum, plus first call on unused energy allotted to States.)	First call on all secondary energy.
Los Angeles	14.9054	32.9054 (Its own minimum, plus 50 percent of unused State allocation, 36 percent.)	50.9054 (Its own minimum, plus 50 percent of unused State allocation, 36 percent, plus ½ of unused district allocation, 36 percent.)	50 percent, subject to district's first call.
Pasadena	1.6183	1.6183	1.6183	None.
Glendale	1.8867	1.8867	1.8867	None.
Burbank	.5806	.5806	.5806	None.
Southern California Edison Co., Ltd.	7.2	21.6 (Its own minimum, plus 40 percent of unused State allocation, 36 percent.)	39.6 (Its own minimum, plus 40 percent of unused State allocation, 36 percent, plus ½ of unused district allocation, 36 percent.)	40 percent, subject to district's first call.

Southern Sierras Power Co. (now California Electric Power Co.).	.9	2.7 (Its own minimum, plus 5 percent of unused State allocation, 36 percent.)	2.7 (Its own minimum, plus 5 percent of unused State allocation, 36 percent.)	5 percent, subject to district's first call.
Los Angeles Gas & Electric Corp. (afterward acquired by city of Los Angeles).	.9	2.7 (Its own minimum, plus 5 percent of unused State allocation, 36 percent.)	2.7 (Its own minimum, plus 5 percent of unused State allocation, 36 percent.)	5 percent, subject to district's first call.
Total	100.00	100.00		100.00
Additional firm energy (90,000,000 kilowatt-hours per year) made available by increase in height of dam				
Los Angeles	All	All	All	

The district also had first call on firm energy allotted to but unused by the city of Los Angeles and the companies, but such energy was all firmly contracted for by the allottees named.

The State of Nevada thereafter exercised its draw-back privilege and contracted for various quantities of energy within its 18-percent allotment.¹⁵ Arizona did not enter into a contract until 1945, and gave its first notice of withdrawal of energy in 1948.

It will be noted that if these "draw-backs" should be fully exercised, 36 percent of the firm energy would be taken by States, 55 percent by other public agencies, and 9 percent by private power companies.

References to subsequent amendments appear in the margin.¹⁶

D. Compliance With Conditions Precedent to Appropriations

In June 1930, Secretary Wilbur reported to the congressional appropriations committees as follows, in support of a budget estimate of \$10,660,000:¹⁷

THE SECRETARY OF THE INTERIOR,
Washington, D. C., June 16, 1930.

The CHAIRMAN, COMMITTEE ON APPROPRIATIONS,
United States Senate.

MY DEAR MR. CHAIRMAN: Estimates for construction work on the dam and incidental works authorized by the Boulder Canyon Project Act (45 Stat. 1057) for the fiscal year commencing July 1, 1930, have been submitted to Congress and referred to your committee. The amount asked is \$10,660,000. I recommend the appropriation of that amount and will, if it is appropriated, direct the early commencement of construction.

¹⁵ Power contracts were made by the United States with the Nevada Colorado River Commission under the 1930 regulations as follows (references are to symbol numbers): I2R-6052, May 6, 1936; I2R-6052, Supplement No. 1, April 23, 1938; I2R-6052, Supplement No. 2, December 7, 1939; I2R-6052, Supplement No. 3, December 19, 1940; I2R-6392, August 10, 1936.

¹⁶ In 1938 the Department of Water and Power of the City of Los Angeles entered into a contract with the Secretary of the Interior ("third circuit" contract, July 6, 1938), under which it agreed to construct a third transmission circuit, bringing to 390,000 kilowatts the effective capacity of its Hoover Dam transmission lines, and to take stipulated quantities of secondary energy on which the regulations of 1930 gave it an option. In consideration of these undertakings, the United States agreed (1) to maintain the existing ratio between rates for secondary energy and firm energy on any subsequent rate adjustments; (2) to extend the amortization period on generating equipment to the full period (50 years) of the city's lease; (3) grant an absorption period with respect to the allocation made originally to the Los Angeles Gas & Electric Corp., which the city had acquired in purchasing the properties of that company.

Concurrently, the Metropolitan Water District of Southern California entered into a contract with the United States (July 13, 1938), providing for the deferment of the district's obligation to take energy in excess of its pumping requirements, but obligating it to pay interest upon the amounts deferred.

The 1938 contracts are omitted from this volume, as they were superseded by the agreements made under the Boulder Canyon Project Adjustment Act, *infra*, which incorporated these provisions in modified form.

¹⁷ Appendix 42, first edition.

All conditions required by the Boulder Canyon Project Act to be performed prior to appropriation for such construction have been fulfilled. There are four such conditions, as follows:

(1) As required by section 4 (a) of the Boulder Canyon Project Act, six of the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, including the State of California, ratified the Colorado River compact, mentioned in section 13 of the act, and consented to waive the provisions of the first paragraph of article XI of the compact, which makes the same binding and obligatory only when approved by each of the seven States signatory thereto, and approved the compact without conditions, save that of such six-State approval.

Copies of the statutes of the six States of California, Colorado, Nevada, New Mexico, Utah, and Wyoming, effecting such ratification are handed to this committee, herewith.

(2) As provided by section 4 (a) of the act, the President, by public proclamation dated June 25, 1929, has declared the approval of the compact by six States, including California.

True copy of the proclamation is handed the committee herewith.

(3) As required by section 4 (a) of the act, the State of California, in the statute, copy of which has been handed you, has agreed irrevocably and unconditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, that the aggregate annual consumptive use of water of and from the Colorado River shall not exceed 4,400,000 acre-feet of the waters apportioned to the lower-basin States by paragraph A of article III of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by the compact, such uses always to be subject to the terms of the compact.

(4) As required by section 4 (b) of the Boulder Canyon Project Act, I have made provision for revenues by contract in accordance with the provisions of the act, adequate, in my judgment to insure payment of all expenses of operation and maintenance of the dam and power plant incurred by the United States, and the repayment within 50 years from the date of the completion of said works of all amounts advanced to the Colorado River Dam fund under subdivision (b) of section 2 of the Project Act for such works, together with interest thereon made reimbursable under that act.

These contracts are two in number: (1) A contract for lease of power privilege executed severally by the city of Los Angeles and the Southern California Edison Co. (Ltd.), and (2) a contract for electrical energy executed by the Metropolitan Water District of Southern California. In addition, under authority of section 5 of the act, I have executed with the Metropolitan Water District of Southern California a contract for the delivery of water to be stored in the Boulder Canyon Reservoir.

True copies of the two power contracts required by section 4 (b) of the act, and of the contract for delivery of water, are submitted to the committee herewith.

With particular reference to the power contracts, I wish to advise you that—

(a) The power contracts between the United States and the Metropolitan Water District of Southern California, the City of Los Angeles, and the Southern California Edison Co. (Ltd.) are adequate in my judgment to insure payment of all expenses of operation and maintenance of the dam and power plant incurred by the United States and the repayment within 50 years from the date of the completion of said works of all amounts advanced to the Colorado River Dam fund under subdivision (b) of section 2 of the Project Act for such works, together with interest thereon reimbursable under that act. This finding applies to the contracts both as originally drawn, and amended as suggested before the House Committee on Appropriations.

(b) The finding stated above is reported to you regardless of whether the City of Los Angeles, or only its Department of Water and Power, or both the city and the department, as separate entities, are thereby obligated.

(c) The finding stated in paragraph (a) would be reported to you regardless of whether or not the Metropolitan Water District of Southern California was thereby obligated.

As required by Senate Joint Resolution 164, Seventieth Congress, approved May 29, 1928 (45 Stat. 1011), the Secretary of the Interior, with the sanction and approval of the President, appointed a board of five eminent engineers and geologists, one of whom is an engineer officer of the Army on the retired list, who examined the proposed site of the dam to be constructed under the Boulder Canyon Project Act, reviewed the plans and estimates made therefor, advised the Secretary as to matters affecting the safety, the economic and engineering feasibility, and adequacy of the proposed structure and incidental works, and approved the plans for construction to date. Plans are proceeding satisfactorily, and construction can start as soon as this appropriation is available.

Report of this board (commonly known as the Sibert board) was submitted to the Secretary, November 24, 1928, and transmitted by him to the Speaker of the House on December 3, 1928. The Boulder Canyon Project Act thereafter became law. A supplemental report of the board was submitted to the Secretary on April 16, 1930.

True copies of both reports are handed to this committee herewith.

Annexed to this report, as a part of it, are two memoranda on the following subjects:

- I. Financial operation of the project.
- II. Analysis of the power contracts.

Submitted separately are the following memoranda:

Engineering:

1. Present status of Boulder Dam designs.
2. Hydrology of Boulder Canyon Reservoir.
3. Basis of the rates for power.
4. Charts on financial operation.

Legal:

1. Opinion of the Attorney General on authority of the contractors and minimum obligations of the contracts.
2. Opinion of the Attorney General on funds required by the act to be repaid.
3. Opinion by the Solicitor of the Interior Department on 16 questions involving construction of the act.

Economic:

1. Audit of the Los Angeles Bureau of Power and Light, 1929.
2. Annual Report of the Southern California Edison Co., 1929.

Very truly yours,

RAY LYMAN WILBUR.

(For enclosure see appendixes 43 and 44 to the first edition.)

A supplemental report, June 17, 1930, gave the following background:¹⁸

¹⁸ Appendix 45, first edition.

THE SECRETARY OF THE INTERIOR,
Washington, D. C., June 17, 1930.

The CHAIRMAN, COMMITTEE ON APPROPRIATIONS,
United States Senate.

MY DEAR MR. CHAIRMAN: Supplementing my formal report to your committee, and with reference to the Boulder Dam power contracts, I would suggest that analysis of these contracts will be assisted by keeping certain points in mind which were made objectives in drafting these instruments.

1. A wide regional benefit from this power was desired and obtained: 18 percent is allocated to Arizona; 18 percent to Nevada; 36 percent to the Metropolitan Water District of Southern California for pumping a domestic water supply from the Colorado; 13 percent to Los Angeles; 6 percent to 11 smaller cities; in all, 91 percent of the firm energy to 15 public agencies, to be generated by machinery leased and operated by the City of Los Angeles. The remaining 9 percent was allocated to four public utilities who alone can serve the great agricultural back country.

2. This wide distribution was not possible, however, if the States of Arizona and Nevada were required to firmly obligate themselves now for power which they cannot yet use. The same was true to a lesser extent of the 11 smaller cities. Yet the act requires firm contracts in advance of appropriations, adequate to return the Government's investment. It was found that sale of 64 percent of the firm energy would accomplish this. Two applicants had sufficient resources and market to be able to guarantee to take that amount of power, which is in excess of two-thirds of the entire present southern California consumption. These were the City of Los Angeles and the Southern California Edison Co. But to allot 64 percent to these two agencies would have meant a restriction of the regional spread of this power. The problem was solved by requiring the city to underwrite purchase of 37 percent and the company 27 percent of the firm power, of which these two only acquired title respectively to 13 and 9 percent; the balance of the 64 percent being available to them only until the States of Arizona and Nevada and the smaller municipalities might need it. The smaller municipalities were allowed 1 year within which to contract for their 6 percent, and the two States the entire 50-year period of amortization within which to contract for their 36 percent. And this State power may be taken and relinquished, taken again and relinquished again, on notice, as the cycles of mining or other development in these two growing States may require; their energy will thus be available for them for the entire 50 years, without any firm obligation to take it. This arrangement was only made possible by the earnest desire of the city and the company to facilitate the building of the dam as a solution of the water problem of the Coastal Plain.

Solution of the water problem is undertaken with the balance of the power, 36 percent, which is allocated to the Metropolitan Water District, a municipal corporation comprising 11 cities with an assessed valuation of \$2,300,000,000, which has firmly contracted for this 36 percent and will use it to pump Colorado River water through an aqueduct. It is also allotted all the secondary power (surplus power fluctuating with wet and dry season cycles). But as this district, although capable of making this firm contract has not yet undertaken to finance its aqueduct and indeed could not be expected to do so until it was assured of a power and water supply by contract with the United States, this 36 percent was

not considered in our estimates of the minimum assured return to the Government of the United States. As previously stated, it was found that without this 36 percent and without any revenues from the sale of secondary power or the sale of stored water, we were still assured of all the revenues required by the act. Nevertheless, revenues under the district's power contract and from secondary energy and stored water will provide a large surplus available for payment to the States of Arizona and Nevada and to the Colorado River Dam fund.

Allocation of the California power among the city of Los Angeles, the 11 smaller cities, the Metropolitan Water District, and the four utilities, follows exactly two agreements among them which they submitted to the Secretary of the Interior. Faced by a common water problem whose solution required the marketing over an oil and gas field of power generated 250 miles away, in sufficient quantity to make the building of Boulder Dam possible, these various elements—large cities, small cities, public utilities, municipal power systems, water supply organizations—have resolved their power problem in a way which appeared to them to best afford a basis for solution of the dominant water question.

Copies of these two agreements are enclosed, and in addition, a letter to me from the chairman of the board of the Southern California Edison Co., all of which will indicate the background of cooperation on which the financial structure of these contracts is based.

Very truly yours,

RAY LYMAN WILBUR.

(For enclosures see appendixes 34, 35, and 36 to the first edition.)

E. Contest With Arizona Over the First Appropriation

The following is quoted from the first edition (p. 26):

The State of Arizona appeared in opposition to the appropriation, although the contracts reserved 18 percent of firm energy for that State to be taken by it any time within 50 years, and also provided surplus revenues which were estimated to yield that State under provisions of the project act between \$22,000,000 and \$31,000,000 during the life of the contracts. At the hearings the opposition centered upon the contracting capacity of Los Angeles and phraseology of certain clauses of the contracts. While testimony was presented on behalf not only of the Department but of each of the contractors refuting the Arizona position, it was decided, in view of the brief time remaining before adjournment of Congress, and the possibility of a filibuster, to eliminate the Arizona objections by amendment of the contracts. The amendments were signed on May 28 and 31, 1930, and effected no change in the tenor of the instruments. The contracts were thereupon submitted to the Attorney General for opinion. He reported that "all the requirements of section 4 (b) of the Boulder Canyon Project Act which are made conditions precedent to the appropriation of money, the making of contracts, and the commencement of work for the construction of a dam and power plant in Boulder Canyon have been fully met and performed by the Secretary of the Interior in securing the contracts referred to in his letter." As the city and company contracts were found adequate, the objections made to the Metropolitan contract, principally the lack of funds to build an aqueduct, were not passed upon, but: "Even if the aqueduct financing were construed as being a prerequisite, the Secretary's reservation of energy for the district is within his authority under the second paragraph of section 5 (c) of the act."¹⁹

¹⁹ Opinion of the Attorney General, June 9, 1930 (36 Ops. Atty. Gen. 270).

Later the State of Arizona filed its objections with the Comptroller General, and he concurred with the Attorney General.²⁰

The full appropriation was approved by both Houses, notwithstanding Arizona's opposition.²¹

On October 13, 1930, 3 days after the Comptroller General's opinion, Arizona filed an original action in the United States Supreme Court against the Secretary of the Interior and the six States of the basin to enjoin construction of the dam, and praying that the compact and the project act be declared unconstitutional. The decision dismissing the bill is discussed in chapter XIII (A) and the opinion (283 U. S. 448 (1931)) is printed as appendix 1301.

²⁰ Opinion of the Comptroller General, October 10, 1930 (Decision A-32702).

²¹ Second Deficiency Act, fiscal year 1930 (46 Stat. 860, 878). For a full statement of the efforts made by Secretary Wilbur to protect the position of Arizona in the negotiation of the power contracts, notwithstanding Arizona's refusal to participate, see letter of Secretary Wilbur to Governor Phillips of Arizona, May 14, 1930 (appendix 46, first edition). This letter, and Governor Phillips' reply, appear in The Congressional Record 12225-12228, June 26, 1928.

Chapter VII

THE CONSTRUCTION AND OPERATION OF HOOVER DAM

A. Construction of the Dam

The history of the construction of Hoover Dam is outside the scope of this volume. A list of references appears in appendix 702.¹

The Black Canyon site was selected by A. P. Davis, Director of the Reclamation Bureau, and approved by a group of advisers to the Secretary: F. C. Emerson, W. F. Durand, J. G. Scrugham, and James R. Garfield. Extensive geological investigations, technical design studies, hydraulic research, and concrete investigations preceded the writing of specifications. Two boards of eminent engineers advised the Secretary and Commissioner: The Hoover Dam Consulting Board, comprising Louis C. Hill, David L. Henry, William F. Durand, F. L. Ransome, and Andrew J. Wiley, and the Colorado River Board (appendixes 301-303), comprising Maj. Gen. William L. Sibert, Charles P. Berkey, Daniel W. Mead, Warren J. Mead, and Robert Ridgway.²

Construction of the project was formally initiated July 3, 1930, by President Hoover's signature of the Second Deficiency Act for the fiscal year 1930,³ and issuance by Secretary Wilbur of an order on July 7, 1930 (appendix 701), to Commissioner Mead to commence construction. Work under the first contract began September 17, 1930, when Secretary Wilbur drove a silver spike, inaugurating construction of the Union Pacific branch railroad from Las Vegas to Boulder City.⁴

The planning and construction of the dam were under the general direction of Chief Engineer R. F. Walter. The dam itself was designed under the direction of John L. Savage, and the power plant

¹ A comprehensive account of the various construction phases may be found in Wilbur and Mead, "The Construction of Hoover Dam" (1933), containing the full text of the plans and specifications; Nelson, "The Boulder Canyon Project," Smithsonian Institution report for 1935; Nielson, "Boulder Dam" (extract from "Dams and Control Works, U. S. Bureau of Reclamation," 1938).

² Wilbur and Mead, "The Construction of Hoover Dam" (1933), pp. 1-5.

³ Act of July 3, 1930 (46 Stat. 860).

⁴ See ch. VII (B), *infra*.

under the direction of L. N. McClellan. Walker R. Young was construction engineer in charge for the Bureau of Reclamation. His immediate staff was headed by Ralph Lowry, assistant construction engineer, and John C. Page, office engineer, later Commissioner of Reclamation.

The plans and specifications for the dam and appurtenant works were advertised in December 1930. Bids were opened March 4, 1931. The low bidder was Six Companies, Inc., of San Francisco, Calif., a company composed of six western contracting firms: Utah Construction Co., Pacific Bridge Co., Kaiser Paving Co., Ltd., McDonald & Kahn Co., Morrison-Knudsen Co., and J. F. Shea Co. The contract was awarded April 20, 1931. The contract allowed 2,565 days, from March 11, 1931, to April 11, 1938, for completion. The great work was accomplished under the direct supervision of Frank Crowe, the contractor's engineer in charge. The dam and power plant structures covered by this contract were completed and accepted by the Secretary of the Interior on March 1, 1936, or over 2 years ahead of schedule. A summary of the construction schedule achieved on this project appears in the margin.⁵

The dam is 726.4 feet high, 1,282 feet long at the crest, 660 feet thick at the base, and 45 feet thick at the crest. It contains 3,250,000 cubic yards of concrete. Water is released from the reservoir through four intake towers feeding four 30-foot diameter steel pen stocks, which in turn lead into the turbines and to outlet headers through branch pen stocks.

⁵ The program of construction at Hoover Dam was as follows:

Feature	Date started	Date completed
Diversion tunnels.....	June 1931.....	March 1933.
Upstream cofferdam.....	September 1932.....	Do.
Downstream cofferdam and rock barrier.....	November 1932.....	Do.
Removal of the same.....		May 1935.
Excavation for dam.....	October 1932.....	June 1933.
Intake towers.....	February 1932.....	March 1935.
Spillways.....	do.....	Do.
37-foot penstock tunnels.....	February 1933.....	May 1934.
Installation of 30-foot-diameter outlet pipes in upper tunnels:		
Arizona.....	January 1935.....	September 1935.
Nevada.....	October 1934.....	August 1935.
Installation of 30-foot-diameter outlet pipes in lower tunnels:		
Arizona.....	January 1935.....	June 1936.
Nevada.....	February 1935.....	July 1936.
18-foot penstock tunnels.....	December 1932.....	August 1934.
Installation of 13-foot-diameter penstock pipes in branch tunnels.....	December 1934.....	January 1936.
Canvon wall outlet works.....	November 1932.....	August 1935.
Tunnel plug outlet works.....	July 1935.....	April 1936.
Stoney gates at downstream portal of inner diversion tunnels.....		
Tunnel plugs in inner diversion tunnels.....	March 1934.....	November 1935.
Tunnel plugs in outer diversion tunnels.....	December 1934.....	March 1935.
Concrete in dam.....	June 1933.....	May 1935.
Power plant.....	December 1932.....	
Initial generating units ready for operation.....		September 1936.

Two spillways, one on each side of the canyon, are designed to pass 400,000 second-feet. Each spillway channel is 670 feet long, 75 to 128 feet deep, and 40 feet wide at the bottom.

The generating equipment is installed in a U-shaped power-plant building 1,650 feet in length. The two main wings are each 650 feet long, about 120 feet wide, and 230 feet above the lowest foundation elevation.

The power plant is designed for fifteen 115,000 horsepower generators, two 55,000 h. p. units, and two station service sets, making a total ultimate installation of 1,835,000 horsepower.⁶

B. The Name of Hoover Dam

(1) *Dedication by Secretary Wilbur.*—On September 17, 1930, on initiating construction, Secretary Wilbur issued the following order:

THE SECRETARY OF THE INTERIOR,
Washington, D. C., September 17, 1930.

DR. ELWOOD MEAD,
Commissioner of Reclamation,
Washington, D. C.

MY DEAR DOCTOR MEAD: This is to notify you that the dam which is to be built in the Colorado River at Black Canyon is to be called the Hoover Dam.

Sincerely yours,

RAY LYMAN WILBUR.

(2) *Confirmation by Congress.*—When the Interior Department appropriation bill for the fiscal year ending June 30, 1932, came to the floor of the House in December 1930, Congressman Taylor, then ranking Democratic member of the Interior Department Subcommittee on Appropriations and later chairman of the full Appropriations Committee, who had introduced a bill⁷ to name the structure Hoover Dam, called the attention of the House to the fact that the committee had designated the dam as Hoover Dam in the appropriation bill, saying:⁸

This is the first time that name has ever appeared in any bill or official act of Congress. This Interior Department Appropriations Committee thought that following the precedents of the naming of the Roosevelt Dam during President Roosevelt's administration, and the Wilson Dam during President Wilson's administration, and the Coolidge Dam during his administration, that President Hoover was very justly entitled to the same distinction, so we unanimously and very gladly wrote into this action those words making the naming of that great dam the Hoover Dam by the action of Congress that will be a monument to him for centuries after every other act of his administration, and of this Congress

⁶ U. S. Bureau of Reclamation, "Dams and Control Works" (2d edition), Boulder Dam.

⁷ H. J. Res. 81, 71st Cong., 1st sess., introduced May 27, 1929.

⁸ Congressional Record December 12, 1930, p. 646.

will have passed into utter oblivion * * * so that the dam is now officially named by both the Secretary of the Interior and by Congress.

Mr. Taylor's views were approved by the House, the Senate concurred and the bill became law confirming the name of Hoover Dam.⁹ In the next four succeeding appropriation acts the dam was designated as "Hoover Dam." These were the acts approved April 22, 1932,¹⁰ July 1, 1932,¹¹ July 21, 1932,¹² and February 17, 1933.¹³

(3) *Subsequent action.*—After Mr. Hoover left office, the Interior Department, although failing to take any formal action,¹⁴ avoided the use of the name "Hoover Dam," and publicized the names "Boulder Canyon Dam" or "Boulder Dam."

(4) *Legislation restoring the name of Hoover Dam.*—Early in the Eightieth Congress, a number of bills were introduced to restore the name of Hoover Dam.¹⁵

On March 4, 1947, Chairman Welch, for the House committee on Public Lands, reported¹⁶ House Resolution 140, by Mr. Anderson of California, with the following statement:

Herbert Hoover, while Secretary of Commerce, in 1922 presided as the representative of the Federal Government over two score meetings of the representatives of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming for the formulation of the Colorado River compact. He had a major part in bringing the States into agreement. This compact, signed November 24, 1922, made construction of the dam possible by allocating the waters of the river system, between the upper and lower Colorado River Basins, settling a 25-year-old controversy. The Boulder Canyon Project Act, enacted December 21, 1923, when Mr. Hoover was President-elect, ratified the compact and authorized construction of a dam in Black Canyon or Boulder Canyon, leaving to the Secretary of the Interior the choice of sites. It also laid upon him and the Secretary of the Interior extraordinary responsibilities.

As President, Herbert Hoover took an active part in settling the engineering problems and location of the dam in Black Canyon; was required by the Project Act to obtain power and water contracts adequate to assure some \$200,000,000 of revenues before construction was begun; settled the difficult and controversial questions involved in the allocation of the power, and made the revenue contracts which Congress required; and proclaimed the Boulder Canyon Project Act to be in effect on June 25, 1929. This act ratified the Colorado River compact, which Mr. Hoover had signed 7 years before, and subjected all operations of the

⁹ Act of February 14, 1931 (46 Stat. 1115, 1146).

¹⁰ Act of April 22, 1932 (47 Stat. 118).

¹¹ Act of July 1, 1932 (47 Stat. 535).

¹² Act of July 21, 1932 (47 Stat. 717).

¹³ Act of February 17, 1933 (47 Stat. 845).

¹⁴ See letter of Secretary of Interior Harold L. Ickes to Hon. Allen T. Treadway, Congressional Record, Senate, April 21, 1947, p. 3835.

¹⁵ H. J. Res. 59 (80th Cong.), by Mr. Anderson; H. J. Res. 117, by Mr. Foote; S. J. Res. 45, by Mr. Hawkes; S. 673, by Mr. Baldwin. See also the speech of Congressman Phillips of California, Congressional Record, August 2, 1946.

¹⁶ H. Rept. No. 87 (80th Cong., 1st sess.).

Boulder Canyon project to that compact. He subsequently reported to Congress, through Secretary Wilbur, compliance with its mandate that this project be built on a self-liquidating basis; Congress made the necessary appropriations (in acts which five times named the dam in his honor); the construction contracts were signed under his administration, and when he left office construction had been pushed to a point where it was more than a year ahead of schedule.

After Mr. Hoover left office, the Interior Department, for reasons that need not be referred to in detail here, avoided the use of the name "Hoover Dam" where possible, and used the names "Boulder Canyon Dam" or "Boulder Dam."

After hearing testimony relative to the need for clarifying the present situation with regard to the name of this dam, it is apparent to this committee that affirmative legislative action by Congress is desirable.

It is particularly timely that this measure honoring Mr. Hoover should come to the floor of the House at a time when he is completing the second of his great humanitarian missions for President Truman in the relief of world-wide suffering.

The resolution passed the House on March 6, 1947, without a dissenting vote, after a series of speeches from both sides of the aisle in tribute to Mr. Hoover.¹⁷

On March 17, 1947, a companion resolution¹⁸ by Senator Hawkes of New Jersey was reported favorably.¹⁹ It was passed by the Senate on April 23, 1947.²⁰

The resolution restoring the name of Hoover Dam, signed by President Harry S. Truman April 30, 1947,²¹ reads:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the name of Hoover Dam is hereby restored to the dam on the Colorado River in Black Canyon constructed under the authority of the Boulder Canyon Project Act, approved December 21, 1928 (45 Stat. 1057), and referred to as Hoover Dam in the Act approved February 14, 1931 (46 Stat. 1146); in the Act approved April 22, 1932 (47 Stat. 118); in the Act approved July 1, 1932 (47 Stat. 535); in the Act approved July 21, 1932 (47 Stat. 717); and in the Act approved February 17, 1933 (47 Stat. 845). Any law, regulation, document, or record of the United States in which such dam is designated or

¹⁷ See remarks of Mr. Brown, Congressional Record (80th Cong., 1st sess.), March 6, 1947, p. 1788; Mr. Rankin, id., p. 1788; Mr. Knutson, id., p. 1789; Mr. Herter, id., p. 1790; Mr. Barrett, id., p. 1791; Mr. Sabbath, id., p. 1791; Mr. Kefauver, id., p. 1792; Mr. Dirksen, id., p. 1792; Mr. Halleck, id., p. 1792; Mr. Welch, id., p. 1794; Mr. Murdock, id., p. 1794; Mr. Rockwell, id., p. 1794; Mr. Vorys, id., p. 1795; Mr. Jenkins of Ohio, id., p. 1795; Mr. Russell, id., p. 1797; Mr. Elliott, id., p. 1797; Mr. Gross, id., p. 1797; Mr. Bender, id., p. 1797; Mr. Phillips of California, id., p. 1798; Mr. Johnson of California, id., p. 1791, 1798; Mr. Chenoweth, id., p. 1798; and Mr. Ramey, id., p. 1798. During the hearings of the House Committee on Public Lands, Congressman Anderson of California, Jensen of Iowa, and Phillips of California testified in support of the measure.

¹⁸ S. J. Res. 45 (80th Cong., 1st sess.).

¹⁹ S. Rept. No. 55 (80th Cong., 1st sess.), Senate Committee on Public Lands.

²⁰ See remarks of Senator Hawkes, Congressional Record (80th Cong., 1st sess.), April 21, 1947, p. 3829; Senator Smith, id., p. 3837; Senator Hawkes, April 23, 1947, p. 3956; Senator Eastland, id., p. 3956; Senator Flanders, id., p. 3957; Senator McCellan, id., p. 3957; Senator Saltonstall, id., p. 3957; Senator Chavez, id., p. 3961; Senator Morse, id., p. 3962; and Senator Knowland, id., p. 3963. Contra: Senator McCarran, id., p. 3837; Senator Taylor, id., p. 3957.

²¹ Act of April 30, 1947 (Public Law 43, 80th Cong., 1st sess.).

referred to under the name of Boulder Dam shall be held to refer to such dam under and by the name of Hoover Dam.

Approved April 30, 1947.

C. The Reservoir: Lake Mead

The Reservoir created by Hoover Dam, Lake Mead, is appropriately named for Dr. Elwood Mead, who was Commissioner of Reclamation during the definitive phases of its planning and construction. Dr. Mead was identified with the project in many other ways. As State engineer of Wyoming, on October 27, 1897, he wrote advocating storage on the Colorado.²² As a member of the All-American Canal Board, he was responsible for the official endorsement of that project. (See chs. I (F) and XI (A) and appendix 101.) He was chairman of the American section of the International Water Commission which conducted negotiations with Mexico. (See ch. XIV (B), *infra*.) As Commissioner of Reclamation, he supervised the planning of Hoover Dam,²³ the negotiation of the construction contracts on Hoover Dam, Imperial Dam, the All-American Canal, Parker Dam, and several of the related projects referred to in chapter XII, and the negotiation of many of the power and water contracts which appear in this volume.

Lake Mead extends upstream 115 miles from the dam, has a shore line of approximately 550 miles, and surface area of about 162,700 acres, or 254 square miles, and a storage capacity of 32,359,000 acre-feet.²⁴

Plans for operating the reservoir contemplate that the upper 9,500,000 acre-feet of storage capacity will be reserved for flood-control purposes, with incidental production of secondary energy; that 3,207,000 acre-feet, comprising the dead storage below access to the intake towers, will be used for silt retention, and that the remaining 19,672,000 acre-feet will be "live storage" available for regulating the reservoir for irrigation and domestic water supply, and for the production of firm power.

D. Boulder City

On May 19, 1931, the United States, proceeding under an act of Nevada²⁵ ceding exclusive jurisdiction to the United States over lands

²² Letter to Capt. H. M. Chittenden (H. Doc. 141, 55th Cong., 2d sess., 1897).

²³ See "The Construction of Hoover Dam," Ray Lyman Wilbur and Elwood Mead (Government Printing Office, 1933).

²⁴ Hearings before subcommittee of the Committee on Appropriations, House of Representatives (76th Cong., 3d sess., pt. 1, p. 475). See also hearings on H. R. 10630, Interior Department appropriation bill for 1937 (74th Cong., 2d sess., pp. 1165-1166).

²⁵ Act of February 24, 1921 (secs. 2895-2898, Nevada Comp. Laws, 1929).

acquired by the United States for certain purposes, established the Boulder Canyon Project Federal Reservation (appendix 26, first edition). The validity of this reservation was subsequently challenged in litigation²⁶ to which the United States was not a party. Notwithstanding the adverse outcome of that litigation, the United States has continued to assert jurisdiction over this area, and has constructed a substantial town, Boulder City, which operates under a city manager and other employees appointed by the Secretary of the Interior.²⁷

Subsequently a number of other Federal activities were located in this area.²⁸ Some of the problems occasioned thereby are referred to in chapter VIII (D).

E. Transmission Lines

Transmission lines are not included in the Federal project, but were built by the power allottees. The major portion of the electric power generated at Hoover power plant is delivered to the coastal areas of southern California. Three 287,500-volt lines, the highest voltage lines in commercial service in the country at this writing, transmit Hoover power to the city of Los Angeles and the municipalities of Burbank, Glendale, and Pasadena. Operating at 230,000 volts, another pair of circuits service territory of the Southern California Edison Co. A third 230,000-volt circuit, which has a branch to Parker power plant and is owned by the Metropolitan Water District, extends south to the district's aqueduct to supply power for pumping water for the needs of the 3,425,000 people in the district's service area of California. From this circuit's western terminus at Hayfield pumping plant, the Southern California Edison Co. has a 230,000-volt line connecting the Metropolitan Water District circuit to the Edison Co.'s system at Highgrove. Two short 230,000-volt lines connect Hoover Dam to the Basic Magnesium project located between Boulder City and Las Vegas, Nev.; a 138,000-volt line transmits the California Electric Power Co.'s Hoover allocation to the Victorville and San Bernardino areas; and 69,000-volt circuits serve

²⁶ *Six Companies, Inc. v. F. C. DeVinney*, 2 F. Supp. 693 (D. C. Nev. 1933); *Six Companies, Inc. v. Stinson*, 2 F. Supp. 689 (D. C. Nev. 1933).

²⁷ The first city manager, 1930-31, was Louis C. Cramton; the second, 1931-41, Sims Ely.

²⁸ The Boulder Canyon Wild Life Refuge was established by Executive order of March 3, 1933. It became the Boulder Canyon National Wild Life Refuge by Proclamation No. 2416, July 25, 1940. The refuge was revoked by Public Land Order 501, July 22, 1948, appearing in the Federal Register, August 3, 1948, p. 4403. A memorandum of agreement between the National Park Service and the Bureau of Reclamation, establishing the Boulder Canyon Recreational Area (surrounding and including Lake Mead), was approved by the Secretary of the Interior, October 13, 1936.

Boulder City, the Colorado River Commission of Nevada's wholesale customers, such as the Southern Nevada Power Co. in Las Vegas and the mining districts at Pioche, and the Metropolitan Water District's resale customers at Needles, Calif., and Kingman, Ariz.

Further details relating to the Hoover Dam transmission system are shown in appendix 703.

F. Operation

Storage in Lake Mead was begun February 1, 1935. Generation of power was formally initiated at 12:22 p. m., September 11, 1936, but the energy delivered was sold under an interim contract; the 50-year period covered by the contracts entered into in 1930 commenced June 1, 1937. Power from Hoover Dam was first transmitted to Los Angeles on October 9, 1936.

Chapter VIII

BOULDER CANYON PROJECT ADJUSTMENT ACT

A. Background

The Boulder Canyon Project Adjustment Act¹ modified and superseded, without specific amendment, provisions of the Boulder Canyon Project Act relating to fixed charges, determination of rates, and disposition of revenues.

The act came into existence as the result of events intervening between the execution of the power contracts of 1930, and the first delivery of energy by the Government thereunder, in 1937.

This background is stated in the Senate report on the bill which became the Adjustment Act,² as follows:

Construction of Boulder Dam was initiated in 1930; the first unit of the power plants went into service on June 1, 1937, and the 50-year period covered by the power contracts began to run on that date.

During the 7-year interval between execution and initial operation of these contracts, however, several factors had developed which emphasized the excessive costs which were reflected in the power rates set in 1930. The competitive value of Boulder Dam energy had fallen, in consequence of improvements in the art of

¹ Act of July 19, 1940 (54 Stat. 774) (appendix 801 herein).

LEGISLATIVE HISTORY

H. R. 9877.—May 23, 1940, introduced by Mr. Scrugham, referred to the Committee on Irrigation and Reclamation; May 2, 4, 7, 9, 11, 14, 16, 21, 27, and 28, 1940, hearings by committee; May 28, committee report (H. Rept. No. 2328); June 17, passed House; June 18, placed on Senate Calendar; June 21, amended and passed Senate (in lieu of S. 4039); June 22, both Houses agree to conference; June 22, July 1, conference report submitted in Senate and debated; July 3, conference report recommitted; July 10, conference report (H. Rept. 2745) (second) submitted in House; July 11, conference report (second) submitted in Senate; July 11, conference report agreed to in House and in Senate; July 19, 1940, approved (Public Law No. 756, 76th Cong., 3d sess.) (86 Congressional Record (House), pp. 6766, 7071, 8437-8444, 9036, 9037, 9290, 9424, 9539, 9540, 9570; 86 Congressional Record (Senate), pp. 8460, 8844, 8845, 8955, 8983, 8993, 8999, 9006, 9102, 9209, 9479, 9485, 9494, 9495).

S. 4039.—May 24, 1940, introduced by Mr. Hayden (for himself, Mr. Ashurst, Mr. Johnson of California, Mr. Downey, Mr. Adams, Mr. Johnson of Colorado, Mr. Hatch, Mr. Chavez, Mr. Thomas of Utah, Mr. O'Mahoney, Mr. Schwartz, Mr. Pittman, and Mr. McCarran), referred to the Committee on Irrigation and Reclamation; May 28, 29, 31, and June 3, hearings by committee; June 6, committee report (S. Rept. No. 1784); June 21, indefinitely postponed (H. R. 9877 passed in lieu) (86 Congressional Record (Senate), pp. 6768, 7636, 8844, 8845).

² S. Rept. No. 1784 (76th Cong., 3d sess.) on S. 4039.

generating power by steam, decreases in the cost of fuel and in the capital costs of steam plants, and for other reasons. The United States had constructed the Tennessee Valley Authority and Bonneville projects and had initiated other projects, such as Fort Peck, on a rate basis which abandoned the competitive rate basis in force at Boulder Dam in favor of a rate fixed by the amount needed to amortize such part of the investment as is allocable to power, plus costs of operation, maintenance, replacements, etc. This policy was made general, as to reclamation projects, by the Reclamation Project Act of 1939 (Public, No. 260, 76th Cong., 1st sess., ch. 418). Consequently, the southwestern area served by Boulder Dam found itself obligated to pay, until 1945, a rate which was excessive whether measured internally by the requirements of the Project Act or externally by the standards of the newer projects.

Accordingly, the power allottees filed with the Secretary of the Interior, in 1937, a request for a review of the rates. In 1930, in making the initial allocation of energy, the Secretary of the Interior had proposed that "when the dam and powerhouse are actually in operation the lessees may have the right to ask for a review of the actual cost of units of power and be entitled to deductions which will still permit the charge made to return to the Government all advances and interest in accordance with the Boulder Dam Act: *And provided further*, That if such review indicates that a higher rate should be paid for power to meet the obligation to the Federal Government such an advance in rate will be put into effect."

The recasting of the rates on an amortization basis, however, involved differences of interest among the seven States of the basin, and 2 years of negotiation, from 1937 to 1939, were necessary before all these interests were brought into agreement, as they now are, upon the bill herewith reported.

The differences among the States arose from two provisions of the Project Act.

First, section 4 (b) of the Project Act provided that if, during the period of amortization, the Secretary should receive revenues in excess of amounts needed to meet the periodical payments to the United States "as provided in the contract or contracts executed under this act," then immediately after the settlement of such periodical payments he should pay 18 $\frac{3}{4}$ percent of such excess to Arizona and 18 $\frac{3}{4}$ percent to Nevada. These percentages are the complement of the 62 $\frac{1}{2}$ percent of excess revenues payable on the flood-control allocation. The legislative history of this provision made it clear that these payments were in lieu of taxes which the States might have collected had the project been built by a taxable entity, and which they cannot collect because the project is a Federal one. Manifestly, if the rates were stabilized at the amortization level the chance of obtaining excess revenues would disappear.

Second, section 5 of the Project Act provided that—

"After the repayment to the United States of all money advanced with interest, charges shall be on such basis and the revenues derived therefrom shall be kept in a separate fund to be expended within the Colorado River Basin as may hereafter be prescribed by the Congress."

The elimination of excess revenues would eliminate the possibility, however remote, that the amortization period would be shortened by the application of the remaining 62 $\frac{1}{2}$ percent excess revenues to the early retirement of the flood-control allocation under section 2 (b) and thereafter to the acceleration of the retirement of the balance of the investment.

The governments of the 7 States appointed a committee of 16, including 2 representatives of the power allottees, to reconcile these differences. In conference with the Interior Department a compromise bill was gradually evolved,

approved by the Interior Department, the 7 States, and the power contractors. This is that measure.³

* * * * *

B. Provisions of the Act

The Boulder Canyon Project Adjustment Act accomplished the following major objectives:

(1) *Stabilization of rates.*—In lieu of a rate adjusted every 10 years upon a basis of competitive conditions, the Adjustment Act substituted a rate stabilized for the period June 1, 1937, to May 31, 1987, calculated to provide revenues large enough to meet four requirements: (a) Operation, maintenance, and replacements (sec. 1 (a)); (b) repayment to the Treasury, with interest, of its reimbursable advances, excluding an allocation for flood control, referred to below (sec. 1 (b)); (c) payment of \$300,000 annually to each of the States of Arizona and Nevada in commutation of the share of excess revenues which was earmarked for those States by section 4 (b) of the Project Act (sec. 1 (c) 2(c)); (d) payment of \$500,000 annually to the Colorado River development fund, in substitution for the "separate fund" established by section 5 of the Project Act (secs. 1 (d), 2 (d)). The first \$1,500,000 of income to this development fund was directed to be used for preparation of a plan for the comprehensive development of the basin; its receipts through the year 1955 were dedicated to the construction of projects in the four States of the upper division; and receipts thereafter were earmarked for the investigation and construction of projects in the basin generally (sec. 2 (d)).

(2) *Reduction of interest.*—The interest rate chargeable on the Treasury's advances, and carried forward into calculations of the rates, was reduced from 4 to 3 percent per annum (sec. 6).

(3) *Reimbursement.*—The reimbursement provisions of the Project Act were clarified through (a) definitely deferring (but not writing off) the \$25,000,000 allocated to flood control by section 2 (b) of the Project Act, making that amount reimbursable (without interest) after the balance of the investment shall have been retired (sec. 7), and (b) stipulating a definite amortization period commencing June 1, 1937, and ending May 31, 1987 (sec. 7), in substitution for the somewhat indefinite provisions of the Project Act relating to the period of amortization (secs. 2 (b), 4).

Other portions of the act provided for diminution of payments to Arizona and Nevada in the event they should attempt to tax the project or certain features of its operations (sec. 2 (b)); stipulated feasibility standards for the projects receiving the benefit of the \$500,000 annually paid to the development fund (sec. 2 (d)); provided

³ See hearings of the House Committee on Irrigation and Reclamation on H. R. 9877 (76th Cong.).

for the diminution of payments to Arizona, Nevada, and the development fund in the event of reduction of revenues through unavoidable causes (sec. 3); provided for a retroactive adjustment of rates to June 1, 1937 (sec. 4 (a)), and for adjustments with allottees who might be burdened with taxes of Arizona and Nevada of the type provided against in section 2 (sec. 4 (b)); set up a fiscal system for readvances to the Colorado River Dam fund for the making of replacements (sec. 5); authorized the Secretary to promulgate regulations, provided "that no allotment of energy to any allottee made by any rule or regulation heretofore promulgated shall be modified or changed without the consent of such allottee" (sec. 8); authorized the Secretary to substitute an agency operating contract for the lease held by the City of Los Angeles and the Southern California Edison Co. (sec. 9), but protected their tenure by an authorization for a suit for specific performance against the Secretary (sec. 9 (c)); and directed the Secretary to place the act in effect by a proclamation if contractors responsible for 90 percent of its firm energy had executed contracts thereunder prior to June 1, 1941 (sec. 10).

The act also contained a section on definitions (sec. 12), one requiring an annual report (sec. 13), provisions preserving the Colorado River compact (sec. 14) and the right of the States to enact their own laws respecting appropriation, control, and use of waters within their borders (sec. 14), and a section on prevailing wages (sec. 15).

C. Operations Under the Act

The administration of the Adjustment Act is developed in more detail in chapter IX with reference to the 1941 contracts made thereunder.

The act was placed in effect May 29, 1941, by a proclamation of the Secretary (appendix 802) required by section 10, the required contracts having been executed that date, pursuant to regulations promulgated May 20, 1941 (appendix 901), following hearings and findings by the Secretary.

Section 13 of the act requires the Secretary of the Interior to render annual reports. These reports cover operation, maintenance, and construction activities of the project during the contract year which ends May 31. They also contain tables indicating the financial status of the project, and the calculation of the energy rates and generating charges for the year in question.

D. Amendments

(1) *Nonproject costs: Provisions of the Interior Department Appropriation Act for the fiscal year 1949.*—Boulder City, initially a construction camp for Hoover Dam, developed into a permanent city, the third in population of Nevada. The United States located a

number of activities there not directly related to the project, as defined in the Boulder Canyon Project Act and the Boulder Canyon Project Adjustment Act. These included large operations by the Bureau of Mines, the National Park Service, the War Department, and the establishment of the regional offices of the Bureau of Reclamation. The Secretary of the Interior construed the Adjustment Act as requiring the annual operation and maintenance appropriation for the project to be included in its entirety in the calculation of rates, notwithstanding the fact that a portion of the investment and operating costs of Boulder City was attributable to these nonproject activities.

After two earlier acts⁴ directing the Secretary to make reports⁵ segregating project and nonproject costs and expenditures, the Interior Department Appropriation Act for the fiscal year 1949⁶ (appendix 803) disposed of this question by requiring the Secretary of the Interior to submit annually to the Appropriations Committees a justification showing all investments and expenditures made or proposed out of the Colorado River Dam fund for the joint use of the project and of other Federal activities at or near Boulder City; directing that these investments or expenditures should be deemed nonproject items, in the proportion that they were made for the use of other Federal activities; and directing that the obligation under the provisions of section 2 of the Boulder Canyon Project Adjustment Act to repay advances, which in turn is the basis for computation of rates under section 1 of that act, be diminished in the amount that nonproject investments or expenditures are made from that fund. On June 17, 1948, the Comptroller General ruled that this provision "should be regarded as permanent legislation" (decision B-77260).

(2) *The McCarran Act, 1948.*—By the act of May 14, 1948,⁷ section 2 (e) was added to the Boulder Canyon Project Adjustment Act (and is printed therein in appendix 801), authorizing appropriations for the fiscal years 1948, 1949, 1950, and 1951 for payment to the Boulder City school district of tuition not to exceed \$65 per semester per pupil, who are dependents of any employee of the United States living in the immediate vicinity of Boulder City.⁸ The Interior Department

⁴ Act of July 12, 1943 (57 Stat. 451) (Interior Department Appropriation Act for fiscal year 1944), act of June 28, 1944 (58 Stat. 463) (Interior Department Appropriation Act for fiscal year 1945).

⁵ A report was rendered under the first act, December 30, 1943, and under the second, on May 2, 1946.

⁶ Act of June 29, 1948 (Public Law 841, 80th Cong., 2d sess.).

⁷ Act of May 14, 1948 (Public Law 528, 80th Cong., 2d sess.).

⁸ See hearings, House Committee on Appropriations, Interior Department Appropriation Act for fiscal year 1949, p. 2334 et seq., for the background of the McCarran Act and of the legislative provisions in the 1949 Interior Department Appropriation Act referred to above.

Appropriation Act for the fiscal year 1949⁹ conforms to that authorization.

(3) *The Barrett Act, 1948.*—By the act of June 1, 1948,¹⁰ section 2 (d) of the Boulder Canyon Project Act was amended (and as amended appears in appendix 801), to direct that the \$500,000 transferred to the Colorado River development fund annually, for the fiscal years 1949 to 1955, inclusive, shall be distributed for investigation among the four States of the upper division “on a basis which is as nearly equal as practicable.”¹¹

⁹ Act of June 29, 1948 (Public Law 841, 80th Cong., 2d sess.).

¹⁰ Act of June 1, 1948 (Public Law 570, 80th Cong., 2d sess.).

¹¹ The terms of the Boulder Canyon Project Adjustment Act, and of the contracts made under it, were actually negotiated to some extent simultaneously. The United States was represented, under the general direction of Secretary Harold L. Ickes and Commissioner of Reclamation John C. Page, by Nathan R. Margold, solicitor, Fred Kirgis and Bernard Kammerman, assistant solicitors, and Kennard Cheadle, Clifford E. Fix, chief counsel, Bureau of Reclamation. Leland Olds, Joel D. Wolfsohn, W. F. Durand, and Benjamin Cohen participated. The power contractors were represented by E. F. Scattergood, S. B. Robinson, James H. Howard, Roy V. Reppy, Alfred Merritt Smith, Alan Bible, and others; the “Committee of Sixteen” by Clifford H. Stone, Alma Davis, Donald Scott, R. J. Tipton, Grover Giles, and others.

Chapter IX

HOOVER DAM POWER CONTRACTS MADE UNDER THE BOULDER CANYON PROJECT ADJUSTMENT ACT

A. Regulations of May 20, 1941 (Appendix 901)

On July 27, 1940, Secretary Ickes designated Mr. R. V. L. Wright as his special representative to hold hearings in preparation for the promulgation of regulations and the determination of charges. Mr. Leland Olds, Chairman of the Federal Power Commission, and Dr. W. F. Durand, of Stanford University, were designated to act as advisers.

Hearings were held under that authorization from August 12, 1940, to December 6 of that year. Mr. Wright submitted his recommendations on February 19, 1941, and they were approved and regulations promulgated on May 20, 1941.

Below are summarized the more important features of these regulations:

Operation and maintenance.—The United States reserved operation and maintenance of the dam and appurtenant works, but provided for operation of the generating machinery and equipment by the city of Los Angeles and the Southern California Edison Co. under an agency contract (art. 2).

Firm and secondary energy.—Firm energy was defined as 4,330,000,000 kilowatt-hours (being the 4,240,000,000 kilowatt-hours defined by the regulations of April 25, 1930, plus 90,000,000 additional made available by an increase in the height of the dam, and allocated to the city of Los Angeles by the supplemental regulations of November 16, 1931). The same annual diminution (8,760,000 kilowatt-hours per year) was stipulated in the new regulations as in the old. Secondary energy was defined to be all electrical energy available in any year of operation in excess of the amount of firm energy; but for the purpose of computing energy rates, it was assumed that 40,000,000,000 kilowatt-hours of secondary energy would be available in the 50-year period ending May 31, 1987 (art. 3).

Allocation of energy.—Energy was allocated in the same proportions as under the regulations of November 16, 1931, but by virtue of the increase of the base from 4,240,000,000 to 4,330,000,000 kilowatt-hours (art. 4) the percentages were necessarily restated to afford to

each allottee the same number of kilowatt-hours. Substantially the same provisions relating to allocations to the States, disposition of unused energy, etc., were provided for as under the original regulations, the schedules relating to the States' withdrawal and relinquishment of energy being restated somewhat. During the 10-year period intervening since promulgation of the regulations of 1931, the City of Los Angeles had acquired the properties of the Los Angeles Gas & Electric Corp. and its revised allocation reflected that change.

The table (p. 94) shows the commitments and entitlements of the various allottees.

Components of charges.—The 1941 regulations, like those under the original Project Act, separated the charges into two components: (a) An energy charge which was primarily related to the investment in the dam, and (b) a generating charge primarily related to the investment in the power plant machinery (art. V).

Basis of energy rates.—The basis of energy rates stated by article VI of the regulations conforms to the elements of section 1 of the Adjustment Act, spelled out in somewhat more detail with respect to annuities for replacements, etc., and with the necessary provisions to exclude from this calculation the annuities relating to the generating machinery (art. VI).

Uniformity of energy rates.—Article VII stipulated that the rates for firm energy should be uniform for all allottees and the rates for secondary energy uniform for all users of that class of energy (art. VII).

Relationship between rates for firm and secondary energy.—These regulations carried forward a stipulation originating in the City of Los Angeles "third-circuit contract" dated July 6, 1938, establishing a permanent ratio between the rates for firm energy and secondary energy (art. VIII).

Firm energy rate.—Subject to minor revision and adjustment as provided for below, a rate for firm energy 1.163 mills per kilowatt-hour was established for the period June 1, 1937, to May 31, 1987 (art. IX).

Secondary energy rate.—Subject to similar provisions for a readjustment, a rate for secondary energy of 0.34 mill per kilowatt-hour was established for the period of June 1, 1937, to May 31, 1987, and it was provided that energy taken by any allottee in excess of its obligation for firm energy should be charged for at the secondary rate (art. X).

Credits for allottees not taking their full firm energy obligations.—Article XI provided that if any allottee should take less than its obligation but another allottee should take more, the excess revenues paid by the latter should be credited at the secondary energy rate against the obligation of the former.

Credits to adjust payments occasioned by energy rate reduction.—Provision was made for retroactive adjustment to June 1, 1937, to place the modified rates in effect for the amortization period (art. XII).

TABLE 2.—Allocation of Hoover Dam energy under regulations of May 20, 1941

Allottee	Firm energy (4,330,000,000 kilowatt-hours per year, diminishing 2,760,000 kilowatt-hours per year)			Secondary energy (percentage)
	Minimum which United States must supply (percentage)	Allottee's obligation if energy is available (percentage)	Maximum which allottee may demand under various conditions (percentage)	
Arizona	17.6259	None	21.5428	None.
Nevada	17.6259 (To each State for use in the State only.)	None (Each State has the option to take and relinquish energy on specified notice.)	21.5428 (To each State its own allocation plus 3.9169 percent not taken by the other State prior to Apr. 26, 1950; the total for both States not to exceed 35.2518 percent.)	None.
Metropolitan Water District	35.2517 (For pumping Colorado River water into and in its aqueduct.)	35.2517	70.5035 ¹ (Its own minimum, plus first call on unused energy allotted to States.)	First call on all secondary energy.
Los Angeles	17.5554	36.9439 (Its own minimum, plus 55 percent of unused State allocation 35.2518 percent.)	36.9439 (Its own minimum, plus 55 percent of unused State allocation, 35.2518 percent.)	55 percent, subject to district's first call.
Pasadena	1.5847	1.5847	1.5847	None.
Glendale	1.8475	1.8475	1.8475	None.
Burbank	.5773	.5773	.5773	None.
Southern California Edison Co., Ltd.	7.0503	21.1510 (Its own minimum, plus 40 percent of unused State allocation, 35.2518 percent.)	21.1510 (Its own minimum, plus 40 percent of unused State allocation, 35.2518 percent.)	40 percent, subject to district's first call.
California Electric Power Co. (formerly Nevada-California Electric Corp., previously Southern Sierras Power Co.).	.8813	2.6439 (Its own minimum, plus 5 percent of unused State allocation, 35.2518 percent.)	2.6439 (Its own minimum, plus 5 percent of unused State allocation, 35.2518 percent.)	5 percent, subject to district's first call.
Total	100.00	100.00		100.00.

¹ The district also has first call on firm energy allotted to but unused by the city of Los Angeles and the companies, but such energy is all under firm contract to the allottees named.

Payments to States and transfers to Colorado River development fund.—Mechanics were established for the transfers to Arizona, Nevada, and the development fund of the amounts provided for in the Adjustment Act (art. XIII).

Adjustment of energy rates.—Provision was made for three types of adjustments: (1) some on a periodic 5-year basis, primarily to reflect differences between the estimated quantities of firm and secondary energy on which the rates were calculated, and the quantities actually available; (2) annual adjustments to reflect variations between estimated costs of operation, maintenance, and replacements and actual costs as well as to reflect additional investments not taken into account in previous estimates; (3) an adjustment at the end of the amortization period June 1, 1987, to accomplish the result that the revenues during that period should be "sufficient but not more than sufficient" to provide the amounts required by the regulations (art. XIV).

With respect to the first category, the assumption was made that during the 50-year amortization period a total of 205,769,000,000 kilowatt-hours of firm energy would be available, and provision was made for adjustment if the firm energy actually available should be short as much as 30 percent in any 1-year or 25 percent in any 5-year period, or 3 percent short of the total assumed for the 50-year period. Details were spelled out with respect to these calculations.

In like manner it was assumed that during the 50-year period a total of 40,000,000,000 kilowatt-hours of secondary energy would be utilized, and provision was made for adjustment in the event the quantity actually used should vary from that figure.

With respect to the second category of the adjustments, i. e., those made on an annual basis, provision was made for hearings on the Secretary's annual estimates.

As to the investment prior to June 1, 1937, a fixed amortization period of 50 years, ending May 31, 1987, was stipulated; as to investments subsequent to June 1, 1937, a 50-year period commencing June 1 following the year of operation in which the funds were advanced; and in the event of a deficiency in revenues for firm energy occasioned by act of God, major catastrophe, etc., it was provided that such deficiency should not be reflected in any adjustment of the energy charge, but only in the amount to be amortized within the period ending May 31, 1987 (art. XV).

It will be noted that all of the foregoing relates to energy charges, and not to generating charges, which are treated separately in article XVI.

Division of generating machinery and equipment.—These regulations (art. XVI) continued the policy established by those of 1930, in segregating the main generating facilities, transforming and switching facilities, etc., into groups to be operated separately by the Depart-

ment of Water and Power of the City of Los Angeles, and the Southern California Edison Co. Whereas the original regulations of 1930 had been written in advance of construction of the power plant, those of 1941 were promulgated after the equipment was largely installed, and hence designated in detail the elements to be included in the various groups. The assignment of facilities, and responsibility for amortizing investments or various sections thereof, were spelled out in subsequent articles.

Adjustment of generating charges.—The operating agents are required to furnish as of May 1 each year their estimates of the costs of operation and maintenance for the coming year of operation. Monthly bills for generating charges are rendered by the United States to the various allottees, based on those estimates (art. XIX).

Under these regulations, the Secretary has entered into the contracts summarized in the following pages.

B. Agency Contract (Appendix 902)

The agency contract of May 29, 1941, between the United States, the Department of Water and Power of the City of Los Angeles, and the Southern California Edison Co., Ltd., effectuates those portions of the regulations which provide for substitution of an agency contract for the outstanding lease between the same parties. In general, it terminates the lease (art. 14), designates the city and the Edison Co. severally as operating agents, the first with respect to the equipment serving the public agencies and the latter with respect to equipment serving the privately owned utilities (art. 15); fixes a term ending May 31, 1987, for the agency contract (art. 15 (d)); specifies the properties to be operated by each agent (art. 16); specifies the duties, powers, and rights of each operating agent (art. 17); specifies the powers and duties of the power-plant director to be appointed by the Secretary (art. 18); and provides for metering and keeping of records, etc. (art. 19). The foregoing provisions parallel, more or less, comparable provisions in the preexisting lease.

Article 20 contains a new provision relating to integration of operations, its general effect being to recognize the statutory directions of the Project Act with respect to operation of the reservoir but, subject thereto, to grant to each operating agent the assurance that—

the operation of Boulder power plant shall be reasonably integrated with the operation of other projects on the Colorado River owned and operated by the United States at which power is or may be developed, and with the operations by the operating agents of their respective systems, including their other sources of electrical energy.

An integrating committee is provided for, representing the operating agents and the Secretary, to set up annually a program for integra-

tion of operations of the Boulder Canyon plant, other plants on the river, and the plants of the respective agents. Arbitration is provided for in the event of disputes over integration of operations (art. 20 (b) (ii), (iv)).

Other provisions of the contract preserve the Secretary's right of inspection and access (art. 21), require the operating agents to generate energy in accordance with the energy contracts which the Secretary reserves the right to enter into with each of the allottees (art. 22) and provide for compensation to the operating agents for their costs, etc. (art. 23).

Article 24, captioned "Remedies for breach of contract," effectuates the interesting provisions of section 9 of the Adjustment Act. The act therein provided, in effect, that in consideration of the termination of the lease the Secretary was authorized to agree (a) that the lessees be named as operating agents, (b) that such agency contract should not be revocable or terminable except by consent or in accordance with provisions for default specified in the contract, (c) that suits or proceedings to restrain the termination of any such agency contract or for other appropriate equitable remedies might be maintained against the Secretary. Jurisdiction was conferred upon the District Court of the District of Columbia. The Secretary was authorized to act for the United States in arbitration proceedings. Article 24 of the contract, coupled with article 27, spells out procedure.

The remaining articles of the contract comprise clauses which have become more or less standard in Hoover Dam contracts.

Annexed to the agency contract are exhibit A (specifications of properties of the United States to be operated, maintained, and replaced by the City of Los Angeles) and exhibit B (specifications of properties of the United States to be operated, maintained, and replaced by the Southern California Edison Co., Ltd.). This contract also carries as exhibit 2 the full text of the general regulations dated May 20, 1941, printed herein as appendix 901.

C. The Energy Contracts

Nine energy contracts have been entered into with the allottees of energy named in the general regulations of May 20, 1941. These collectively dispose of all firm and secondary energy to be generated at Hoover Dam during the period June 1, 1937, to May 31, 1987. Each contract has annexed to it, as exhibits:

- (1) The agency contract (printed herein as appendix 902), together with exhibits A and B of that contract.
- (2) The general regulations of May 20, 1941 (printed herein as appendix 901).

The contracts are tabulated below:

TABLE 3.—Hoover Dam energy contracts in force 1948

Allottee	Symbol	Date	Printed herein as appendix No.
States:			
Nevada.....	11r-1338	May 29, 1941	903
Arizona.....	11r-1455	Nov. 23, 1945	904
Public agencies:			
Metropolitan Water District.....	11r-1336	May 29, 1941	905
Pasadena.....	11r-1337	do.....	906
Burbank.....	11r-1339	do.....	907
Glendale.....	11r-1340	do.....	908
Los Angeles.....	11r-1344	do.....	909
Companies:			
Southern California Edison Co.....	11r-1335	do.....	910
California Electric Power Co.....	11r-1341	do.....	911

Provisions of the energy contracts.—In general, the energy contracts, which are uniform in character, subject all operations to the regulations and to the terms of the agency contract (art. 8); provide for the delivery of energy to the contractor in accordance with the allocation stated in the regulations (art. 9); obligate the United States to deliver water for the generation of energy allocated (art. 10); provide for measurement of energy (art. 11); provide for the payment of energy rates and generating charges stipulated in the regulations (art. 12); provide for billing and payment (art. 13); stipulate minimum annual payments, representing the quantity of allocated energy multiplied by the rate in effect at the time (art. 14); make the contract contingent on the final effectiveness of the Adjustment Act which, in turn, required the execution of contracts representing 90 percent of the firm energy before the act should be fully effective (art. 15); stipulate a period ending May 31, 1987, as the duration of the contract (art. 16); stipulate that no energy shall be delivered without payment (art. 17); provide for termination in the event of default (art. 18); preserve the Secretary's rights of access to the contractors' books and records (art. 19); grant the use of public and reserved lands to the United States for transmission lines (art. 20); reserve to each allottee the right to the benefit of any modification, extension, or waiver granted any other allottee (art. 21); provide for arbitration of certain disputes and disagreements (art. 22); and contain the other standard clauses of the type which have appeared in all the Boulder Canyon power contracts re priorities of claims (art. 23), title (art. 24), waiver (art. 25), transfer of interests in contracts (art. 26), notices (art. 27), contingency on appropriations (art. 28), Member of Congress clause (art. 29).

The 1941 contracts, it will be observed, follow closely the provisions of those made under the regulations of 1930.

Nevada and Arizona, by entering into the contracts referred to above, did not commit themselves to take specific quantities of energy, but merely formalized the options accorded them by the regulations, under which they may take and relinquish energy on specified notice from time to time. Each State has exercised its option as to specified blocks on various occasions, but as this is written no energy has as yet been actually taken by Arizona thereunder.

D. Proclamation of Effectiveness of the Act (Appendix 802)

On May 29, 1941, Secretary of the Interior Harold L. Ickes issued the finding required by section 10 of the Adjustment Act that provision had been made for the termination of the lease and for the operation thereof by agents, as authorized in section 9 of the act; that the allottees obligated under contracts in force on the date of the Adjustment Act to pay for at least 90 percent of the firm energy had entered into contracts under the new act; and announcing the Adjustment Act to be in full force and effect.

E. Wartime Contracts

The interesting wartime contracts under which Hoover Dam contributed spectacularly to the prosecution of the war are necessarily omitted because of their transitory character and the space required. One group of these agreements, relating to the furnishing of power for Basic Magnesium plant at Henderson, Nev., had a permanent effect on the contract structure, because it involved the installation of an additional generating unit, N-7, and the disposition of unused Metropolitan Water District energy, leading into a group of contracts made in 1945 and 1947, also relating to unused district energy, and involving this unit. These latter are referred to below.

F. 1945 Resale and Related Contracts; 1947 Amendments

Demand for energy in southern California having continued at a high level, notwithstanding the termination of the war, the Metropolitan Water District, the Department of Water and Power of the City of Los Angeles, the Southern California Edison Co., the California Electric Power Co., and the Defense Plant Corporation entered into the "1945 resale contract" (appendix 912), and the California entities entered into a collateral contract, relating to generating equipment.

Under these agreements as amended in 1947 by the four-party 1947 Parker-unit contract (appendix 1206), the net result is to dispose of

all unused District firm energy for the balance of the amortization period ending May 31, 1987. Such unused power is taken by the City, 55 percent; Southern California Edison Co., 40 percent; and California Electric Power Co., 5 percent, subject to the gradually increasing load requirements of the District. Provision is made for the possibility that the District's use may exceed the rate of growth assumed, in which event the District is charged with the cost of substitute energy, under a stated formula.

The collateral agreement, May 31, 1945, provides for the cooperative use of generating equipment so that, in general, the capacity of the generating equipment assigned to the District under the general regulations (appendix 901), the agency contract (appendix 902), and the District's energy contract (appendix 905), but not from time to time required for the District's service, may be used for the benefit of certain other purchasers of energy. An agreement between the District and the Edison Co., May 31, 1945, provides for use of transmission facilities resulting from these rearrangements.

By the four-party 1947 Parker-unit contract (appendix 1206) the District undertook to exercise its right to have the use of units 3 and 4 at Parker power plant transferred to its service immediately after December 13, 1952, which it had the right but not the obligation to do under its basic Parker Dam contracts with the United States (appendixes 1201, 1203, 1204), and thereafter to use Parker energy for the service of the aqueduct, in preference to using energy from Hoover Dam. This results in making more energy available to the purchasers of District unused energy at Hoover Dam, and has the same financial effect on the District as though its share of Parker energy had been sold at the rate for firm energy at Hoover Dam.

At this point, having traced the development of the Hoover Dam power contracts from their beginning in 1930 to date, we revert to the activities under the project act dealing with water contracts, which also took form first in 1930.

Chapter X

THE HOOVER DAM WATER CONTRACTS

A. Statutory Background

The provisions of the Boulder Canyon Project Act controlling the water contracts have been summarized in chapter IV (E). In brief, section 5 authorized the Secretary of the Interior to enter into contracts for the storage and delivery of water, and forbade anyone to use the stored water except by such a contract. Section 4 (a) authorized a compact among Arizona, California, and Nevada. Section 8 (b) subjected the Secretary's contracts to the terms of any compact among these States if approved by Congress before January 1, 1929, otherwise the compact, if made later, to be subject to the Secretary's prior contracts. Sections 8 (a), 13 (b), and 13 (c) subjected the United States and all its contractors to the Colorado River Compact. Section 6 directed that the dam and reservoir be used for various purposes, including satisfaction of present perfected rights in pursuance of article VIII of the compact. That article, in turn, it will be recalled from chapter II (C), directed that whenever storage capacity of 5,000,000 acre-feet should be provided, claims of rights by appropriators or users in the lower basin against appropriators or users in the upper basin should attach to waters stored, not in conflict with article III.

The period which was granted by section 8 (b) of the act to the States of the lower basin, to negotiate a compact which should control the water contracts authorized by section 5, expired January 1, 1929. The 6-month period allowed by section 4 (a) for consummation of a seven-State compact expired June 25, 1929, on proclamation of President Hoover on that date (appendix 503).

B. Negotiations Among the States

Not only were the States of the lower division unable to reach an agreement by January 1, 1929, the date contemplated in section 8 (b) of the Project Act, but the subsequent efforts made while the Department withheld negotiation of the power and water contracts were likewise fruitless. Interstate conferences were held in February, March, April, May and June, 1929, without results. On June 25, 1929, President Hoover proclaimed the Project Act in effect and the compact operative as a six-State agreement. On November 13, 1929, at the close of the hearings on power applications, the Secretary

announced that no action would be taken until the three lower-basin States had again attempted a compact; meetings were accordingly held again in January and February 1930, but without result.¹ For that matter, no agreement has been reached to this date.

C. The Water Contracts: In General

(1) *Necessity for early conclusion of water contracts.*—The studies of the Reclamation Bureau on the disposition of Boulder Canyon energy were based on the assumption that a substantial block of the firm power, perhaps as high as 50 percent, would necessarily be allocated to the Metropolitan Water District of Southern California for pumping into and in its aqueduct.² As negotiation of the power contracts, initiated finally in February 1930, proceeded, it became apparent that the District could not enter into a firm contract for energy over a 50-year period, limited to pumping of water in its aqueduct, unless it held a water contract. Similarly, it became apparent that if the Secretary was to carry out the mandate of the Project Act for the construction of the All-American Canal, involving assumption by the Imperial Irrigation District of a very large repayment obligation, such a contract would involve questions of water storage and delivery under section 5, as well as repayment under section 1 and section 4 (b) of the act.

Accordingly, it became necessary to proceed with water contracts with those agencies which were required by the Project Act to assume the repayment obligation for the project, without further delay, or else indefinitely postpone the project. It was contemplated that storage and delivery contracts would be entered into, governing the deliveries in Arizona and Nevada, as well as California, but inasmuch as the Metropolitan Water District and the Imperial Irrigation District, two entities whose commitments were essential to meet the revenue requirements with respect both to Hoover Dam and the All-American Canal, were located in California, the solution of the California water-contract problem necessarily preceded the submission of the first estimates for construction appropriations.

(2) *Available data as to water supply.*—In the absence of a determination of water rights in the lower basin by interstate agreement or Supreme Court adjudication, either of which might take several years (and neither of which, in fact, has been accomplished to this date), the contracts proposed for these conflicting States were drawn in the light of the then-existing knowledge of the water supply, and the relative contentions of the States at that time.

¹ See ch. VI (B).

² See memorandum of Commissioner Mead, January 10, 1930 (appendix 37, first edition); tentative allocation of October 21, 1929 (appendix 33, first edition). The water contracts were negotiated under the direction of Secretary Wilbur and Commissioner Mead, by Northcutt Ely, R. J. Coffey, and E. B. Debler.

As to water supply, the studies upon which the repayment capabilities of Hoover Dam were calculated were those contained in "Hydrology of Boulder Canyon Reservoir," by E. B. Debler (1929).³ These showed the following estimates:

Development above Boulder Canyon

	1928	1938	1948
Irrigated area.....acres	1,717,000	2,040,000	3,368,000
Capacity of irrigation reservoirs.....acre-feet	662,000		2,933,000
Capacity of power reservoirs.....do	10,000		8,100,000
Transmountain diversions.....acre-feet annually	116,000	180,000	621,000
Surface area of irrigation reservoirs.....acres	27,300	60,000	80,400
Surface area of power reservoirs.....do	2,600			172,000
Mean depletion for irrigation consumptive use, transmountain diversions and reservoir losses.....acre-feet annually	2,760,000	3,481,000	6,595,000
Mean annual inflow to Boulder Canyon.....acre-feet	15,730,000	15,000,000	11,895,000

Debler, "Hydrology of Boulder Canyon Reservoir," appendix 29 to "The Hoover Dam Contracts," first edition p. 477.

(3) *Assumptions as to demand.*—

(a) **THE MEXICAN BURDEN.** With respect to the anticipated Mexican burden, the United States section of the International Water Commission, of which Commissioner of Reclamation Elwood Mead was chairman, had notified the Mexican section of the Commission (August 30, 1929) that the United States:

* * * proposed, as an equitable division of the waters of the Colorado, to deliver to Mexico the greatest amount which had been delivered to irrigators in that country from the stream in any one year. That year was 1928, during which time Mexican irrigators received 750,000 acre-feet of water. The certainty of delivery of this water by the United States was conditioned on the construction by the United States of Boulder Dam within its territory, until which time the existing unregulated flow of the river must continue.⁴

This was followed by the formal report of the Commission, March 22, 1930, stating that:

* * * the Commission decided to adjourn without date and to report the situation to their respective governments for such further action as the proper authorities might regard advisable to bring the questions to an authoritative determination.⁵

So far as this Government was concerned, it was not prepared at that time to concede more water to Mexico than Commissioner Mead had offered.⁶

(b) **CONFLICTING CLAIMS OF ARIZONA AND CALIFORNIA.** The status of the controversy between Arizona and California at that time,

³ See appendix 29 to the first edition.

⁴ Report of the American section of the International Water Commission, United States and Mexico (H. Doc. 359, 71st Cong., 2d sess., 1930), p. 5.

⁵ Id., p. 29.

⁶ See letter of former President Hoover to Senator Hawkes of New Jersey (S. Doc. 32, 79th Cong., 1st sess.), printed in ch. XIV (K).

reflected in the interstate conferences of January-February 1930, was reported by the Federal mediator, Hon. William J. Donovan, to Secretary Wilbur, February 14, 1930,⁷ as follows:

Then there was submitted the following proposal:

1. Gila and all Arizona tributaries out, except return flow.
2. From the main stream water following divisions to be made:

3-A:	A. California	4,400,000
	B. Arizona	2,800,000
	C. Nevada	300,000
3-B:	1,000,000	50-50

Fifty-fifty main stream surplus.

Fifty-fifty Mexican burden—main stream.

Any shortage in main stream without preference or priority.

Reduction from Santa Fe and Washington, 200,000.

Arizona urged the adoption of this suggestion. It was pointed out that it followed the theory of compromise indicated in the Swing-Johnson bill, that all discussions brought us back to such a compromise, and that its embodiment in the bill was the result of many weeks of discussion by the congressional representatives of the States concerned.

In order to reduce this proposal to figures a table was prepared and submitted to Arizona and California. This table was based on the assumption of engineers that 10,500,000 acre-feet of water would pass through Boulder Canyon Dam per annum. If that assumption were correct, then, it was said that there would be below the dam 9,400,000 acre-feet of water for diversion by all other interests except the Metropolitan Water District, which it was estimated would need 1,100,000 acre-feet at the dam.

The following schedule of diversions for the 10,500,000 acre-feet was suggested:

	3-A	3-B	Surplus	Total
California	4,400,000	500,000	1,000,000	5,900,000
Arizona	2,800,000	500,000	1,000,000	4,300,000
Nevada	300,000			300,000
	7,500,000	1,000,000	2,000,000	10,500,000

Assumed Mexican burden of 800,000 acre-feet divided 50-50 between Arizona and California.

On this set-up, this would leave diversions out of physical water present in the main stream, as follows:

	<i>Acre-feet</i>
California	5,500,000
Arizona	3,900,000
Nevada	300,000
Mexico	800,000
	10,500,000

⁷ See report of Col. William J. Donovan to Secretary of the Interior Ray Lyman Wilbur, February 14, 1930, Congressional Record, June 26, 1930, pp. 12203, 12204.

California's counterproposal, as reported by Colonel Donovan, was:⁸

On Saturday, February 8, at California's suggestion, a conference was held between the States of Arizona and California. At this conference, California submitted the following proposal:

"California, anxious to make one more effort to bring about an agreement, makes the following proposal for the division of the waters of the lower Colorado River system:

"To Nevada, 300,000 acre-feet of water.

"Utah and New Mexico to have all water necessary for use on areas of those States lying within the lower basin.

"Arizona to have all waters of the Gila system and her other tributaries, excepting such water as reaches the main stream, also her present uses from the main stream, within the State.

"California to have water now diverted in California for agricultural and domestic use in California.

"Balance of water in main stream to be divided one-half to Arizona and one-half to California.

"Mexican obligations to be met one-half by Arizona and one-half by California from main-stream water.

"All other points to be left to determination of the Secretary of the Interior, under the act."

Each State objected to the other's proposal.⁹

(c) QUANTITIES APPARENTLY AVAILABLE FOR CONTRACT. The contracts authorized by Secretary Wilbur's regulations of 1930-31, as hereinafter summarized, are within the foregoing limits,¹⁰ aggregating 5,362,000 acre-feet for California and 2,800,000 acre-feet for Arizona, subject in each case to availability thereof under the Colorado River Compact and the Boulder Canyon Project Act.

⁸ Congressional Record, June 26, 1930, p. 12205.

⁹ Id., pp. 12204-12206. Commissioner Ward of Arizona was quoted by Colonel Donovan (id., p. 12205) as translating California's proposal: "With 8,500,000 acre-feet available, the division would be as follows: California, 5,400,000; Arizona, 2,800,000; Nevada, 300,000," assuming present diversions in California to be 2,850,000 acre-feet, and in Arizona 250,000 acre-feet.

¹⁰ The California contracts were before the United States Supreme Court in *Arizona v. California et al.* (298 U. S. 558), appendix 1304 herein. In that case, the Court, adopting, for the purpose of the decision, figures used by Arizona in her bill of complaint (art. XVIII, "California's Maximum Legal Rights," p. 25-27), said (p. 563-564):

"The compact was duly ratified by the six defendant States, and the limitation upon the use of the water by California was duly enacted into law by the California Legislature by act of March 4, 1929, supra. By its provisions the use of the water by California is restricted to 5,484,500 acre-feet annually.

"The Secretary of the Interior, acting under authority of sec. 5 of the Boulder Canyon Project Act, has entered into contracts with California corporations for the storage in the Boulder Dam Reservoir and the delivery, for use in California, of 5,362,000 acre-feet of water annually."

Arizona asked that the project act be ignored and that an equitable apportionment be made by the Court. The Court refused to take jurisdiction in the absence of the United States as a necessary party.

As stated in the first edition (p. 42):

* * * inasmuch as an entirely new factor, i. e., the building of Hoover Dam and providing of 30,000,000 acre-feet of storage, has intervened after the execution of the Colorado River Compact, there is every reasonable assurance that water adequate to supply all of Arizona's and California's needs can be supplied under these contracts, leaving to the future the settlement of a question which in practice will probably never arise: The technical classification of the water discharges under various provisions of the compact.

The effect of subsequent changes in available data is referred to in chapters X (G), and XIII (E), *infra*.

In the following pages appear a summary of the California, Arizona, and Nevada water contracts. The All-American Canal contracts are separately discussed in chapter XI.

D. The California Storage Contracts

(1) *Conflict among California applicants.*—The department was faced by a serious internal conflict among California claimants to waters of the Colorado River. Plans had been definitely made, or were under consideration, for irrigating lands in California from the Colorado River, aggregating nearly 1,500,000 acres, and involving an estimated annual use of Colorado River water of over 6,000,000 acre-feet.¹¹ In general, these fell into two groups, the agricultural interests on the one hand, and the Metropolitan or Coastal Plain areas on the other.

(2) *Agreement of February 21, 1930 (appendix 1001).*—On February 21, 1930, an agreement was entered into between representatives of the Metropolitan group on the one hand, and the agricultural group on the other.¹² Following the pattern of the Colorado River compact, this agreement made no attempt to allocate priorities internally within each group, but made the following general division:

	<i>Acre-feet per annum</i>
Class A water:	
Agricultural groups.....	3, 850, 000
Metropolitan district.....	550, 000
Total.....	4, 400, 000
Next 550,000 acre-feet per annum, available for California use:	
Metropolitan district.....	550, 000
All water in river available for California use in excess of above 4,950,000 acre-feet per annum: Agricultural group.....	All

The agreement recited:

We recognize that California has been so limited as to make infeasible otherwise feasible projects including several hundred thousand acres of land.

¹¹ See figures cited by Senator Hiram Johnson, Congressional Record, December 7, 1928 (70th Cong., 2d sess.), p. 236 et seq. Cf. "The Colorado River," H. Doc. 419, 80th Cong. (interim report of the Secretary of the Interior, 1947), table CII, p. 172.

¹² Appendix 1001.

(3) *Regulations of April 23, 1930 (appendix 1004) and contract with Metropolitan Water District of April 24, 1930 (appendix 1007).*—On April 23, 1930, the Secretary promulgated regulations in very general form (appendix 1004). On April 24, 1930, in advance of execution of the power contracts (appendix 602), an agreement was signed with the Metropolitan Water District (appendix 1007), providing for the storage and delivery of water up to 1,050,000 acre-feet annually. This was somewhat less than the quantity of 1,100,000 acre-feet recognized by the internal agreement of February 21, 1930 (appendix 1001), a margin being left for certain areas which at that time had not joined the Metropolitan Water District. The Metropolitan Water District contract was subsequently amended (appendix 1008) to accord with a further agreement among California claimants, as indicated in chronological order below.

(4) *Necessity for further allocation.*—Negotiations between the Interior Department and Imperial Irrigation District respecting the All-American Canal contract meanwhile proceeded. During these negotiations the necessity for a more definite internal allocation of the water claimed by California became manifest, since the "agricultural" allocation included, en bloc, the Imperial Irrigation District, the Coachella Valley County Water District, and the Palo Verde Irrigation District. Some dispute had also arisen between the Metropolitan Water District and the agricultural group as to the relative priorities of the water allocated to each group within the so-called class A block.

(5) *Request by the Secretary for recommendations by the State (appendix 1002).*—On November 5, 1930, Secretary Wilbur wrote the Imperial Irrigation District and all other California agencies who might contract with the United States, requesting that they ask the cooperation of the State in effecting an allocation which they could join in recommending to the Secretary of the Interior. From November 5, 1930, until August 18, 1931, conferences were held in California under the chairmanship of Mr. Edward Hyatt, State engineer.

(6) *Seven-party water agreement of August 18, 1931 (appendix 1003).*—On August 18, 1931, the seven principal California claimants to waters of the Colorado River executed an agreement, which was approved by the State Division of Water Resources and submitted as a recommendation to the Department of the Interior for inclusion in all California water contracts.

This agreement provides that—

The waters of the Colorado River available for use within the State of California under the Colorado River compact and the Boulder Canyon Project Act shall be apportioned in amounts and with priorities stipulated.

The following table summarizes briefly the system of priorities set up in this agreement:

TABLE 4.—California water priorities

Priority No.	Agency and description	Annual quantity in acre-feet
1	Palo Verde irrigation district—104,500 acres in and adjoining existing district.....	3,850,000
2	Yuma project (California division)—not exceeding 25,000 acres.....	
3	(a) Imperial irrigation district and lands in Imperial and Coachella Valleys to be served by All-American Canal.....	
	(b) Palo Verde irrigation district—16,000 acres of adjoining mesa.....	550,000
4	Metropolitan Water District, city of Los Angeles, and/or others on Coastal Plain.....	
	(a) Metropolitan Water District, city of Los Angeles, and/or others on Coastal Plain.....	550,000
	(b) City and/or county San Diego.....	112,000
6	(a) Imperial irrigation district and lands in Imperial and Coachella Valleys to be served by All-American Canal.....	300,000
	(b) Palo Verde irrigation district—16,000 acres of adjoining mesa.....	
	Total.....	5,362,000

A seventh priority with respect to all remaining water available for use in California was apportioned for agricultural use in the Colorado River Basin in California as shown on map No. 23,000 of the Department of the Interior, Bureau of Reclamation.

(7) *Recommendation by the State.*—The agreement of August 18, 1931 (appendix 1003), was approved by the State Division of Water Resources and submitted to the Secretary of the Interior with the recommendation of the State engineer that this system of priorities be incorporated as a uniform clause in all California water contracts. Article 2 of the agreement had requested the Division of Water Resources to amend applications on file with that office under the laws of California, and to proceed with the processing of such applications in accordance therewith.

(8) *General regulations of September 28, 1931 (appendix 1005).*—The Secretary of the Interior placed the seven-party agreement of August 18, 1931 (appendix 1003) in effect by general regulations dated September 28, 1931. However, in all of these agreements, the water-delivery article was preceded by substantially uniform language, as follows:

The United States shall, from storage available in the reservoir created by Hoover Dam, deliver to the District each year at a point in the Colorado River immediately above [specifying the point of diversion] so much water as may be necessary to provide the District a total quantity, including all of the waters diverted for use by [or in some instances "for use within"] the District from the Colorado River, in the amounts, and with priorities in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, as follows (subject to availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act) * * *

This "subject to availability" clause is carried forward in substantially the same form in all of the California water contracts,

referred to below, the Nevada contracts (appendixes 1018-1019), and the Arizona contract (appendix 1016).

(9) *Summary of California water contracts.*—Water contracts of the California agencies conforming to the seven-party agreement of August 18, 1931 (appendix 1003), and under the general regulations of September 28, 1931 (appendix 1005), approving that agreement were executed as follows:

(1) METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, September 28, 1931 (appendix 1008): This was supplemented October 4, 1946 (appendix 1012), by an agreement between the United States and the Metropolitan Water District, providing for the consolidation of the Metropolitan and San Diego water allocations, in consequence of the decision to include the San Diego area in the Metropolitan Water District, and by an agreement of March 14, 1947 (appendix 1014), on the same subject between the Metropolitan Water District and the City of San Diego.

(2) IMPERIAL IRRIGATION DISTRICT (the All-American Canal contract), December 1, 1932 (appendix 1106): This was supplemented by an agreement February 14, 1934 (appendix 1107), between the Imperial Irrigation District and the Coachella Valley County Water District.

(3) PALO VERDE IRRIGATION DISTRICT, February 7, 1933 (appendix 1006).

(4) THE CITY OF SAN DIEGO, February 15, 1933 (appendix 1009): This was supplemented by an agreement October 2, 1934 (appendix 1111), between the United States and San Diego, contemplating the delivery of water to San Diego via the All-American Canal. This plan was superseded by the decision to construct an aqueduct from San Diego to connect with the Metropolitan Water District aqueduct, under Navy auspices. (See contracts dated October 17, 1945 (appendix 1010), September 23, 1946 (appendix 1011), October 4, 1946 (appendix 1012), October 29, 1946 (appendix 1013), and March 14, 1947 (appendix 1014).)

(5) AGREEMENT OF COMPROMISE between the Imperial and Coachella districts, dated February 14, 1934 (appendix 1107).

(6) COACHELLA VALLEY COUNTY WATER DISTRICT (an All-American Canal contract), October 15, 1934 (appendix 1108), supplemented by an agreement dated December 22, 1947 (appendix 1110), re distribution works.

Items 2, 4, 5, and 6, relating to the All-American Canal, are discussed in more detail in chapter XI.

No contract has been entered into between the United States and the Yuma project in California, relating to priority No. 2 under the seven-party agreement. Nor has any contract been entered into between the United States and the City of Los Angeles, referred to in priorities 4 and 5, inasmuch as the contract between the United

States and the Metropolitan Water District of Southern California (appendix 1008) comprehends the rights recognized jointly (but not cumulatively) in the District and the City by the terms of the seven-party agreement.

E. The Arizona Water Contract

(1) *Offer by Secretary Wilbur.*—In early 1932 Secretary Wilbur submitted to Arizona, through members of the congressional delegation, a proposal for a water-delivery contract with that State. These informal discussions having produced no result, the offer was promulgated in the form of general regulations, February 7, 1933 (appendix 1015).

The following explanation is reprinted from the first edition (pp. 41-42):

It has been the Secretary's policy to establish a firm and equitable basis for future use of water not only in California but also in Arizona, despite the absence of an agreement or adjudication.

The Department has undertaken in four particulars to preserve for Arizona an opportunity to use the waters which Hoover Dam will make available. The task has been complicated by the confusion left over from the days in which Arizona was bitterly opposed to the entire project.

First, 18 percent of Hoover Dam's firm energy was reserved for use in Arizona. This amounts to the equivalent of about 117,000 continuous horsepower.

Second, the Parker Dam contract with the Metropolitan Water District reserves one-half of the power privilege, amounting to about 40,000 horsepower, for use in Arizona, without contribution by that State or the United States to the capital cost of the dam. Freed of capital investment in the dam, this power will rank among the cheapest power projects in the United States. In addition, the Metropolitan Water District has been required to undertake to transmit Arizona's Hoover Dam power at cost from Hoover Dam to Parker Dam to the extent that excess capacity of the district is available.

Third, in the All-American Canal contract the privilege has been reserved to the United States of using that dam as a pumping basin or diversion heading for irrigation of Arizona lands. The Hoover and Parker power will make feasible the irrigation of the first units of Arizona's proposed Gila project by pumping from Imperial Dam, as well as permit the reclamation of the Colorado River Indian Reservation near Parker.

Fourth, the Department has promulgated regulations designed to assure a water supply to Arizona. These regulations are included as an appendix in this volume. They outline the form of a Hoover Dam water-delivery contract which the United States will enter into with Arizona upon certain conditions. Briefly, the contract calls for the delivery of 2,800,000 acre-feet annually, in return for which Arizona undertakes to make no interference with the diversions by other Government contractors. This quantity of water is adequate for all of the Arizona projects below Hoover Dam, and is without prejudice to the power of the parties to contract in the future for delivery of additional water required. As in the case of the California water contracts, the undertaking relates simply to acre-feet of water stored by Hoover Dam, without earmarking the discharges under articles III-A or III-B of the Colorado River compact, or as surplus water. The proposed contract recites the controversy between the two States over the quantity of water available

to each under the various provisions of the Project Act, and makes no attempt to adjust priorities as between the two States. But inasmuch as an entirely new factor, i. e., the building of Hoover Dam and providing of 30,000,000 acre-feet of storage, has intervened after the execution of the Colorado River compact, there is every reasonable assurance that water adequate to supply all of Arizona's and California's needs can be supplied under these contracts, leaving to the future the settlement of a question which in practice will probably never arise: The technical classification of the water discharges under various provisions of the compact. The proposed water contract with Arizona is specifically stated to be without prejudice to the States of the upper basin, and relates solely to water present in the lower basin. Arizona is thus offered an assurance of 2,800,000 acre-feet of main-stream water, and given an opportunity to look to the United States rather than to an agreement with the other States for a delivery of that quantity of water, in return for an agreement not to interfere with diversions by her sister States.

Article 10 (c) of the contract authorized by these regulations provided:

(c) It is recognized by the parties hereto that differences of opinion may exist between the State of Arizona and other contractors as to what part of the water contracted for by each falls within Article III (a) of the Colorado River Compact, what part within Article III (b) thereof, what part is surplus water under said compact, what part is unaffected by said compact, and what part is affected by various provisions of section 4 (a) of the Boulder Canyon Project Act. Accordingly, while the United States undertakes to supply, from the regulated discharge of Hoover Dam, waters in quantities stated by this contract as well as contracts heretofore or hereafter made pursuant to regulations of April 23, 1930, amended September 28, 1931, this contract is without prejudice to relative claims of priorities as between the State of Arizona and other contractors with the United States, and shall not otherwise impair any contract heretofore authorized by said regulations.

Immediately following promulgation of these regulations, the Governor of Arizona asked that negotiations be resumed. During the limited period remaining before the change of administration, March 4, 1933, discussions took place in Phoenix between representatives of the State and representatives of the Secretary without reaching any conclusion.¹²

On June 29, 1933, Secretary Ickes wrote Hon. B. B. Moeur, Governor of Arizona, withdrawing the regulations.¹³

(2) *Negotiations, 1934-44.*—From time to time from 1934 to 1939 representatives of the State of Arizona attempted to secure from the Secretary of the Interior a State-wide contract earmarking a "fund of water" for later disposition to the projects in Arizona. Hearings and conferences were held on several occasions, but with no result, in view of the objections from other States in the basin to various provisions proposed by Arizona.

¹² A draft of the proposed contract had been submitted to Arizona by the Department via Congressman Lewis Douglas of Arizona several months previously.

¹³ Secretary Ickes referred to Governor Moeur's telegram of February 16, 1933, stating that the proposed contract was not satisfactory to Arizona.

In 1939 the Arizona Legislature passed an act ¹⁴ setting out verbatim Arizona's version of an acceptable compact among Arizona, California, and Nevada (differing from that proposed in section 4 (a) of the Project Act, among other respects, by prefixing to the reference to the Gila River the words, "in addition to the water covered" by Article III (a) of the Colorado River Compact and by surplus). This statute also conditionally ratified the Colorado River Compact, the condition being the acceptance by California and Nevada of the compact proposed by Arizona. Neither State accepted, and the Arizona statute expired by its own limitation.

In 1943 Arizona resumed negotiations with the Department. A contract was drafted. Objections were filed by California.

(3) *Hearings and decision. 1944.*—Hearings were held by Secretary Ickes in February 1944. On February 9, 1944, the Secretary, after making amendments designed to meet the California objections, executed the contract that appears herein as appendix 1016. On so doing he issued an explanatory memorandum, printed herein as appendix 1017.

(4) *Terms of contract of February 9, 1944 (appendix 1016).*—The water contract of February 9, 1944, between the Secretary and the State of Arizona provides, in general, for the delivery by the United States from Hoover Dam storage of certain maximum quantities of water, subject to availability thereof, under the project act and the compact (art. 7 (a)), such deliveries to be made to users in Arizona who may contract with the Secretary for the same (art. 7 (1)). The quantities referred to are 2,800,000 acre-feet, unclassified (art. 7 (a)), plus one-half of the excess or surplus "to the extent that such water is available for use in Arizona under said compact and said act" (art. 7 (b)), minus the equitable share of Nevada (art. 7 (f)), New Mexico and Utah (art. 7 (g)), in such surplus, minus also the quantity of water diverted by Arizona above Lake Mead (art. 7 (d)), and reservoir losses (art. 7 (d)). With reference to the contracts theretofore made by the Secretary for use in Nevada (ch. X (F), *infra*) and California (ch. X (D), *supra*), the Arizona contract provides—

Article 7 (f):

Arizona recognizes the right of the United States and the State of Nevada to contract for the delivery from storage in Lake Mead for annual beneficial consumptive use within Nevada for agricultural and domestic uses of 300,000 acre-feet of the water apportioned to the Lower Basin by the Colorado River Compact, and in addition thereto to make contract for like use of 1/25 (one-twenty-fifth) of any excess or surplus waters available in the Lower Basin and unapportioned by the Colorado River Compact, which waters are subject to further equitable apportionment after October 1, 1963 as provided in Article III (f) and Article III (g) of the Colorado River Compact.

¹⁴ Act of March 3, 1939 (Arizona Laws, 1939, ch. 33).

Article 7 (h):

Arizona recognizes the right of the United States and agencies of the State of California to contract for storage and delivery of water from Lake Mead for beneficial consumptive use in California, provided that the aggregate of all such deliveries and uses in California from the Colorado River shall not exceed the limitation of such uses in that State required by the provisions of the Boulder Canyon Project Act and agreed to by the State of California by an act of its Legislature (Chapter 16, Statutes of California of 1929) upon which limitation the State of Arizona expressly relies.

As to the status of the waters to be delivered to Arizona, article 10 provides:

Neither Article 7 nor any other provision of this contract, shall impair the right of Arizona and other States and the users of water therein to maintain, prosecute or defend any action respecting, and is without prejudice to, any of the respective contentions of said States and water users as to (1) the intent, effect, meaning and interpretation of said compact and said act; (2) what part, if any, of the water used or contracted for by any of them falls within Article III (a) of the Colorado River Compact; (3) what part, if any, is within Article III (b) thereof; (4) what part, if any, is excess or surplus waters unapportioned by said Compact; and (5) what limitations on use, right of use and relative priorities exist as to the waters of the Colorado River system; provided, however, that by these reservations there is no intent to disturb the apportionment made by Article III (a) of the Colorado River Compact between the Upper Basin and the Lower Basin.

The contract was to be of no effect unless unconditionally ratified by act of the Arizona Legislature within 3 years and, further, unless within the same period the Colorado River Compact should be unconditionally ratified by Arizona (art. 14).

(5) *Approval by Arizona Legislature.*—The Arizona contract, re-drafted in accordance with the Secretary's announcement of February 9, 1944, was executed as of the same date, and approved by act of the Arizona Legislature of February 24, 1944 (appendix 1016). The Colorado River Compact was ratified by the Arizona Legislature the same day (appendix 230).

F. The Nevada Water Contracts

(1) *Contract of March 30, 1942 (appendix 1018).*—In preparation for the furnishing of water for the important plants built during the war near Las Vegas, Nev., the Secretary of the Interior and the State of Nevada, through its Colorado River Commission, entered into a contract on March 30, 1942, for the delivery of not to exceed 100,000 acre-feet per year to the State for consumptive use, but not for the generation of electric power.

The agreement was subject to the availability of such water for use in Nevada under the provisions of the compact and the Boulder Canyon Project Act. The contract stipulated a charge of 50 cents

per acre-foot, in consequence of the reduction in power output at Hoover Dam occasioned by this diversion from Lake Mead.

(2) *Contract of January 3, 1944 (appendix 1019)*.—In a supplemental contract dated January 3, 1944, between the same parties, the agreement of March 30, 1942, was amended by increasing the quantity from 100,000 to 300,000 acre-feet.

G. Effect of Changes in Data

The power and water contracts previously referred to were based, as stated in chapter X (A), upon studies of the water supply made in 1929,¹⁵ which in turn were based on the best available data of record for the period prior thereto, beginning in 1897, and available in more adequate form from 1922. However, beginning in 1930–31, almost concurrently with the execution of the California power and water contracts, and continuing with interruptions to date, a period of drought has prevailed, as compared with the period of record on which the projects estimates were based. C. C. Elder, hydrographic engineer, Metropolitan Water District of Southern California, states:

Compared with the mean annual inflow of 15,730,000 acre-feet [see Mr. Debler's table above, quoted from appendix 29 to the first edition] for the 1897–1929 period, the 1930–47 mean inflow (present depletion) is 12,120,000 acre-feet or 77 percent as great; the 1931–40 mean is 10,790,000 acre-feet or 68 percent; and the minimum year 1934 had but 4,273,000 acre-feet or 27 percent. From 1930 to date only 4 years out of 18 have been above normal and only 1 had a run-off in excess of 10 percent above normal.

The legal effect of these changes in estimates of supply, plus the increase in demand occasioned by the Mexican water treaty of 1945, which guaranteed Mexico twice the quantity offered in 1930,¹⁶ remains to be determined. Arizona and California are in sharp disagreement with respect thereto.¹⁷

The foregoing chapter cites all of the Hoover Dam water contracts executed to date, including the All-American Canal contracts, but postpones detailed discussion of the latter to the next chapter.

¹⁵ See the comments by Mr. Hoover in S. Doc. 32 (79th Cong., 1st sess.), quoted in ch. XIV. See also S. Doc. 39 (79th Cong., 1st sess.), "Water Supply Below Boulder Dam" (1945), p. 8. The legal assumptions implicit in Mr. Bashore's hypothetical tabulation are not necessarily accepted by either Arizona or California. Cf. pt. 2 (separately printed) of S. Doc. 39, supra.

¹⁶ Cf. H. Doc. 359 (71st Cong., 2d sess.), "Report of the American Section of the International Water Commission, United States and Mexico" (1930), p. 5.

¹⁷ Cf. hearings, House Committee on Irrigation and Reclamation on H. R. 5434 (79th Cong., 2d sess., 1946); hearings of the Senate Committee on Interior and Insular Affairs on S. 1175 (80th Cong., 1st sess., 1947), hearings of the House Committee on the Judiciary on H. J. Res. 225 (80th Cong., 2d sess., 1948); hearings of the Senate Committee on Interior and Insular Affairs on S. J. Res. 145 (80th Cong., 2d sess., 1948). See also "The Colorado River" (H. Doc. 419, 80th Cong., 1st sess., 1947), particularly comments of Arizona (p. 15 et seq.) and California (p. 19 et seq.). See Ch. XIII (E), infra.

Chapter XI

THE ALL-AMERICAN CANAL CONTRACTS

The contracts relating to the All-American Canal, although water-storage contracts within the contemplation of section 5 of the Project Act, are also repayment contracts governed by a number of provisions of the Project Act not applicable to water-storage contracts in general.

The canal is delineated on a map appearing as part of appendix 1106, following page A619.

A. Historical Background

(1) *Construction of Alamo Canal, 1901; Mexican concession, 1904.*— Although appropriations for irrigation of the Colorado River had been initiated in 1895,¹ and water had first been delivered in 1901 via the Alamo Canal built through Mexico,² a concession from the Mexican Government was first obtained on May 17, 1904, by execution of a contract between that Government and Sociedad de Irrigacion y Terrenos de la Baja California, S. A. (appendix 1101).³ This agreement authorized the Sociedad to carry, through the canal which it had built in Mexican territory and through other canals which it might build, water to an amount of 284 cubic meters per second from the waters taken from the Colorado River and territory of the United States by the California Development Co. The concession authorized the Mexican company to carry such water to the lands of the United States, with the exception that—

From the water mentioned in the foregoing article, enough shall be used to irrigate the lands susceptible of irrigation in Lower California with the water carried through the canal or canals, without in any case the amount of water used exceeding one-half of the volume of water passing through said canals.

¹ See tabulation of filings in S. Doc. 142 (67th Cong., 2d sess.), p. 74. For the earlier history of irrigation plans for this area, see *id.*, p. 71; Report of the All-American Canal Board, 1919 (Government Printing Office, 1920), p. 17 et seq.; Tout, "The First Thirty Years" (1931), p. 25 et seq.; chronology in "Colorado River and Boulder Canyon Project" (Colorado River Commission of California, 1931), p. 225 et seq.; Bull. No. 21, "Irrigation Districts in California" (California Department of Public Works, 1929), p. 334; Sykes, "The Colorado Delta" (1937), p. 108 et seq.

² Tout, "The First Thirty Years" (1931), p. 48; Freeman, "The Colorado River," p. 390.

³ For the full text of this concession, see "Colorado River and the Boulder Canyon Project" (Colorado River Commission of California, 1931), p. 319. Cf. report of the All-American Canal Board (1920), p. 19 et seq.

(2) *Break of 1905.*—The near disaster occasioned by the 1905 sweep of the Colorado River into the Alamo Canal, which took place on Mexican soil, emphasized the dangers of that route.⁴ This was aggravated by difficulties with Mexican laws which impeded adequate levee and canal maintenance.

(3) *Early legislation and reports.*—The act of April 28, 1904,⁵ directed the Secretary of the Interior to institute investigations of the use of the waters of the lower Colorado River for irrigation, with the view of determining the extent to which its waters might be made available "through works under the National Irrigation Act and by private enterprise," and as to what legislation, if any, was necessary. A report was made, but no action followed.

On January 12, 1907, President Theodore Roosevelt, in his message to the Senate describing the disastrous flood in the Imperial Valley, outlined a rough plan of development under Federal control.⁶ No legislation resulted.

On May 9, 1914, Commissioner of Reclamation A. P. Davis addressed a memorandum to Secretary of Interior Lane, on the importance of a secure water supply for the Imperial Irrigation District, emphasizing the danger of interruption of the water supply via the canal which led through Mexico. He said:

It is imperative that in some way arrangements be made to give the United States jurisdiction over this canal through some allocable arrangement with the Mexican Government. It is believed that the permanent safety of Imperial Valley depends on such an arrangement.

(4) *Temporary weir; injunctions.*—The alternate scouring and silting at the intake of the Imperial Irrigation District's canal in the United States created conditions making it impossible during certain portions of the year to divert enough water to supply the demand, and it was found necessary to use some device to raise the water level in the river in order to permit adequate diversions. To accomplish this, a temporary weir was constructed in 1910, and annually thereafter.⁷

⁴ For the history of the 1905 break, see Sykes, "The Colorado Delta" (Carnegie Institution of Washington, 1937), p. 57 et seq.; id., p. 114 et seq.; S. Doc. 212 (59th Cong., 2d sess.), "Imperial Valley or Salton Sink Region" (1907); Kleinsorge, "The Boulder Canyon Project" (1941), p. 40 et seq.; Tout, "The First Thirty Years" (1931), p. 98 et seq.; report of the All-American Canal Board (1920), p. 26 et seq.; Report of the Senate Committee on Irrigation and Reclamation on S. 728 (S. Rept. 592, 70th Cong., 1st sess. (1928), pp. 16-20).

⁵ 32 Stat. 591; report was rendered thereunder January 6, 1905; H. Doc. 204 (58th Cong., 3d sess.).

⁶ Congressional Record, 59th Cong., 2d sess., pp. 1028-1029.

⁷ "Colorado River and Boulder Canyon Project" (Colorado River Commission of California, 1931), p. 237; Sykes, "The Colorado River" (1937), p. 116 (photograph opposite).

The report of the Senate Committee on Irrigation and Reclamation (S. Rept. 592, 70th Cong., 1st Sess.) on the Swing-Johnson bill (S. 728), said (p. 24):

On account of the low-lying banks of silt material, it has been found impossible to construct and maintain a permanent diversion weir or dam without flooding the Yuma Valley, now highly productive, under the Yuma reclamation project of the United States. About 1915 it was found, by reason of changes in river channel, that water could not be diverted into the Imperial system without some artificial works in the river. The people of the Yuma Valley obtained an injunction against the construction of such works.⁸ The necessity of the case was such, however, that since that time temporary works have been put in the river annually by the Imperial irrigation district under a contract with the Yuma County Water Users' Association⁹ by the terms of which the Imperial irrigation district assumes full responsibility for any damages which may result to the Yuma County Water Users' Association, or anyone else on the Yuma project, by reason of such construction, and to guarantee payment the district is required to have executed annually and maintain a surety bond in the amount of \$500,000. In addition to this the district agrees to, with all possible dispatch, change its point of diversion to the Laguna Dam, and is required to make bimonthly reports to the War Department as to progress being made.

In connection with the annual construction of the weir, it was necessary to obtain a permit from the War Department.¹⁰

(5) *Construction of Rockwood heading.*—In 1917, the Imperial Irrigation District constructed Rockwood heading, about a mile and a half above the American border, and a canal 6,000 feet long to connect Rockwood intake with Hanlon heading, at the upper end of the Alamo Canal.¹¹ The district had also undertaken heavy expenditures in Mexico in levees, dredging, etc.¹²

It was obvious that all these measures were temporary, until such time as construction of storage works should eliminate the flood danger, and the construction of an all-American canal should eliminate the dangers of Mexican control over the water supply. The river had ceased to maintain a continuous outlet to the sea, and was depositing silt in one channel, then another, at the rate of nearly 150,000 acre-feet a year, and building up its bed in places at a rate of several feet

⁸ "Colorado River and Boulder Canyon Project," supra, p. 237.

⁹ For text of such an agreement, see id., p. 243.

¹⁰ Id., p. 238.

¹¹ H. Doc. 359 (71st Cong., 2d sess.), pp. 21, 28, 116; Sykes, "The Colorado Delta" (1937), p. 116 (photograph opposite).

¹² For a description of the levee system, see report of the All-American Canal Board, p. 30. See also id., p. 14, citing report rendered March 5, 1917, to the Secretary of the Interior by Messrs. Elwood Mead, D. C. Henny, and Joseph Jacobs. For later data, and a chronological summary of work done 1892-1927; see H. Doc. 359 (71st Cong., 2d sess.), p. 121 (1930). See also S. Rept. 592, 70th Cong., pp. 18-20.

annually. This situation, however, was to continue for nearly twenty years more, until Hoover Dam began to store water in 1934.¹³

(6) *Laguna Dam contract of October 23, 1918.*¹⁴—Primarily as a result of the difficulties summarized above, the Imperial Irrigation District entered into a contract with the United States on October 23, 1918, under which the survey and early construction of an all-American canal diverting at Laguna Dam was contemplated. For the right to use the Laguna Dam, the district undertook to pay \$1,600,000 of its costs, or substantially the whole cost of the main structure, in 20 installments. This provision of the 1918 contract is reprinted herein as appendix 1103, the balance of the 1918 contract having been canceled, but this particular article specifically preserved, by the All-American Canal contract of December 1, 1932 (appendix 1106 herein).

The district agreed to build an all-American canal at as early a date as possible, and within a reasonable time. This contract was ratified by the electors of the Imperial Irrigation District January 21, 1919, although the report of the All-American Canal Board (which had been created in February 1918), *infra*, had not as yet been made. Subsequently, Secretary of the Interior Lane determined that it was not practicable for the district to build a canal without Federal assistance. Nevertheless, the district was required to make, and did make, payments until the entire \$1,600,000 was paid.

(7) *The All-American Canal Board.*—By contract¹⁵ dated February 16, 1918, between the Secretary of the Interior and Imperial Irrigation District, the All-American Canal Board was appointed, consisting of Dr. Elwood Mead (later Commissioner of Reclamation), W. W. Schlecht, and C. E. Grunsky. This Board was asked to submit "specific conclusions and recommendations as to the future policy." On July 22, 1919, it submitted a report,¹⁶ accompanied

¹³ For a graphic history of this area, and the losing battle against silt prior to construction of Hoover Dam, see Sykes, "The Colorado Delta" (Carnegie Institution of Washington, 1937). He divides his study into the following periods: (1) The period of relative stability, 1890-1900; (2) the decade of the great diversion, 1900-10; (3) the trend southward to a blind outlet, 1910-20; (4) artificial deflection to the south-south-east, 1920-30; (5) prospects of stability and a tide-water outlet, 1930-35. A supplementary study by the same author, "Delta, Estuary, and Lower Portion of the Channel of the Colorado River 1933 to 1935" records the initial effects of the closure of Hoover Dam, which was effected February 1, 1934.

¹⁴ For the full text of this contract, see Report of the All-American Canal Board (1920), p. 67.

¹⁵ *Id.*, p. 65.

¹⁶ Report of the All-American Canal Board (Government Printing Office, 1920).

by a report of Porter J. Preston, engineer in charge of surveys and examinations. The Board's nine recommendations (appendix 101 herein) included construction of an all-American canal and the construction of large storage reservoirs as a part of the comprehensive development of the Colorado River.

(8) *The Kinkaid Act*.—Following the introduction of the Kettner bills authorizing an all-American canal,¹⁷ but on which Congress did not act, the Kinkaid Act (appendix 102), approved May 18, 1920,¹⁸ directed the Secretary of the Interior to make an investigation and report.

(9) *The Fall-Davis report*.¹⁹—This report (appendix 103), rendered February 28, 1922, specifically included in its recommendations the construction of an all-American canal.

(10) *The Weymouth report*.—This report (unpublished), representing 2 years' additional work under the Kinkaid Act, made under the direction of Chief Engineer F. E. Weymouth of the Bureau of Reclamation, February 28, 1924, likewise recommended immediate construction of an all-American canal, as well as a storage dam at Boulder or Black Canyon.

Legislation authorizing the construction of the canal did not materialize, however, until enactment of the Boulder Canyon Project Act. The provisions of this act are summarized in chapter IV, and the provisions thereof bearing directly on the All-American Canal are referred to briefly below.

(11) *Coachella Valley*.—This area, which is served by its own branch of the All-American Canal, more than 100 miles long, was described as follows in the Senate committee report on the Swing-Johnson bill (S. Rept. 592, 70th Cong., p. 24):

Special mention should be made of the conditions of the Coachella Valley, lying at the northern end of Imperial Valley. This valley, like Imperial Valley proper is below the channel of the river and is subject to the river's flood menace. It is not served by the present Imperial system nor can it be served by this system being above the level of the main canal. It secures its water supply from wells fed by waters from the mountains lying to the west and north. The drainage area being small, water levels are constantly going down and people of that section see facing them, in the very near future, the necessity of letting their highly productive ranches go back to desert.

¹⁷ See ch. I (G).

¹⁸ Act of May 18, 1920 (41 Stat. 600).

¹⁹ "Problems of Imperial Valley and Vicinity" (S. Doc. 142, 67th Cong., 2d sess., 1922). See also the report preliminary to this: A. P. Davis, "Preliminary Report on Imperial Valley and Vicinity," published Jan. 1921 for use of the House Committee on Irrigation of Arid Lands (66th Cong., 3d sess.).

***B. Provisions of the Boulder Canyon Project Act
Relating to the All-American Canal***

Section 1 of the Project Act named as one of the purposes of the legislation:

* * * providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States.

The same section required that the cost of the canal be—

* * * reimbursable, as provided in the reclamation law, and shall not be paid out of revenues derived from the sale or disposal of water power or electric energy at the dam * * * or for water for potable purposes outside of the Imperial and Coachella Valleys: *Provided, however,* That no charge shall be made for water or for the use, storage, or delivery of water for irrigation or water for potable purposes in the Imperial or Coachella Valleys—

that is to say, the All-American Canal was not to benefit by Hoover Dam revenues but was to be paid for by the lands served. Conversely, these lands were not to bear any part of the cost of construction of Hoover Dam for storage purposes, inasmuch as they had vested rights to the natural flow of the river.

Section 5 of the act, a general provision, authorized the Secretary to contract for the storage of water in the reservoir—

* * * and for the delivery thereof at such points on the river and on said canal as may be agreed upon.

Section 7 authorized the Secretary, when repayments to the United States of all money advanced for the canal had been made, to—

* * * transfer the title to the said canal and appurtenant structures, except the Laguna Dam and the main canal and appurtenant structures down to and including Syphon Drop, to the districts or other agencies of the United States having a beneficial interest therein in proportion to their respective capital investments.

Section 7 also provided that—

* * * The said districts or other agencies shall have the privilege at any time of utilizing by contract or otherwise such power possibilities as may exist upon said canal, in proportion to their respective contributions or obligations toward the capital cost of said canal.

In more detail section 7 stipulated that—

* * * The net proceeds from any power development on said canal shall be paid into the fund (Colorado River Dam fund) and credited to said districts or other agencies under said contracts, in proportion to their rights to develop power, until the districts or other agencies using said canal shall have paid thereby and under any contract or otherwise an amount of money equivalent to the operation and maintenance expense and cost of construction thereof.

Section 9 directed the withdrawal from public entry of all public lands of the United States found by the Secretary to be practicable

of irrigation, and their subsequent reopening for entry in tracts not exceeding 160 acres, giving preference to veterans.

C. All-American Canal Contract of Imperial Irrigation District (Appendix 1106)

(1) *Negotiation* of the All-American Canal repayment contract was initiated in 1930. On November 5, 1930, Secretary Wilbur called on the State (appendix 1002) to recommend an allocation among California water claimants. (See ch. X (D), supra.) This was effected through a seven-party agreement approved by the State August 18, 1931 (appendix 1003).²⁰

Following conclusion of the seven-party water agreement, the All-American Canal contract was drafted, being reduced to final form October 3, 1931.

On October 22, 1931, a hearing was held, upon objections which had been filed against execution of the contract. On November 4, the Secretary signed an opinion (appendix 41, first edition), disposing of these objections, and approved the contract as to form.

This contract contemplated the merger of the Imperial and Coachella areas into one district, retaining a borough form of government for each of the two merged districts.

The contract was approved by the electors of the Imperial Irrigation District, but the Coachella landowners decided not to petition for inclusion. Negotiations were resumed in Washington in November 1932, and changes were ultimately approved by the Secretary resulting in elimination of the requirement that the Coachella lands be included as a condition precedent, and substituting an undertaking by Imperial to include these lands on petition within 30 days after the contract was confirmed in judicial proceedings. The contract was executed by the Imperial Irrigation District and the Secretary of the Interior as of December 1, 1932.

(2) *Terms*.—In general, this contract, the major All-American Canal agreement, provided that the United States should build Imperial Dam and the All-American Canal to the Imperial and Coachella Valleys, at a total cost not to exceed \$38,500,000 (art. 7). Capacities of various portions of the canal were stipulated (art. 7); these are tabulated in chapter XI (H), table 5, infra. The district agreed to repay its portion of this investment (art. 10 (a)), determined in general by the ratio of capacities provided for various users (art. 21) in 40 annual installments (art. 12), and to operate and maintain the

²⁰ In *Greeson, et al. v. Imperial Irrigation District*, 59 F. (2d) 529 (C. C. A. 9, 1932), affirming 55 F. (2d) 321 (D. C. Cal., 1931), an injunction was refused against consummation by Imperial Irrigation District of the seven-party agreement of California water agencies of August 18, 1931 (appendix 1003 herein).

works (art. 8), subject to a proration of such costs on a basis of capacities (art. 13). The district was granted the right (accorded by section 7 of the project act) to develop power possibilities on the canal (art. 14), except that the United States reserved the right to use for power purposes the water carried in the All-American Canal to Syphon Drop for the Yuma project (art. 15). The district was required to pay for an added 2,000 second-feet of capacity from Imperial Dam to Syphon Drop, to transport this water for the Yuma project (art. 15), and to continue to pay (art. 16) a total of \$1,600,000 toward the cost of Laguna Dam (substantially the whole cost of that dam, built in 1909 for the Yuma project), as the district's 1918 contract with the Government (appendix 1103) had required it to do, notwithstanding that the district had never, in fact, utilized Laguna Dam, and was herein obligating itself to pay for a different diversion structure, Imperial Dam. The United States agreed to deliver water at Imperial Dam (art. 17) in accordance with the seven-party California priority agreement (appendix 1003). The Government reserved the right to contract with other users prior to transfer of operation and maintenance, and increase the capacity of the canal, prorating the financial obligations (art. 21). Title was to remain in the United States except that, as provided in section 7 of the project act, the Secretary may transfer title to the works below Syphon Drop to the beneficiaries after completion of repayment (art. 22). The district was required to enlarge its boundaries to add about 300,000 acres of public lands on the East and West Mesas adjoining Imperial Valley (art. 35). The agreement, of course, was subject to the Colorado River Compact (art. 29).

(3) *Validation*.—The contract of December 1, 1932, was approved in validation proceedings by the Superior Court of Imperial County on May 24, 1933.²¹ An appeal was taken to the Supreme Court of California by the Coachella Valley County Water District. By stipulation of the parties, the appeal was dismissed by the supreme court on February 14, 1934, an agreement of compromise having been entered into between the two districts (appendix 1107, *infra*).

D. Agreement of Compromise, Imperial and Coachella Districts, 1934 (Appendix 1107)

By this agreement, dated February 14, 1934, the two districts agreed that Coachella should execute an independent All-American Canal contract with the United States instead of merging with Imperial Irrigation District; that Coachella would dismiss an appeal then pend-

²¹ "In the Matter of the Validation of a Contract Dated December 1, 1932" (No. 15460), and *Molan v. Imperial Irrigation District* (No. 15454), Superior Court, Imperial County, Calif., opinion dated May 24, 1933 (unreported).

ing from the decree validating Imperial's All-American Canal contract (supra); that Imperial should have the prior right to all waters allocated in the third and sixth priorities set out in the recommendation of the Chief of the Division of Water Resources (appendix 1003), and Coachella the next right. The relative interests of the two districts in power operations on the canal were defined.

This agreement opened the way to a separate All-American Canal contract by the Coachella district, referred to below.

E. All-American Canal Contracts of Coachella Valley County Water District (Appendix 1108)

On October 15, 1934, the Coachella Valley County Water District and the Secretary of the Interior entered into an agreement (appendix 1108) constituting a repayment agreement for a portion of the cost of the All-American Canal chargeable to the lands within the Coachella Valley County Water District, and providing for the delivery of water via the All-American Canal and the Coachella branch to that area.

Subsequently, the Reclamation Bureau undertook the construction of distribution works for the Coachella project. To facilitate this, the act of June 26, 1947²² (appendix 1104), authorized such construction, the Secretary made a finding of feasibility July 24, 1947 (appendix 1109), allocating part of the investment in the Coachella Canal embankment to flood control, making some \$4,500,000 nonreimbursable, and the United States and the district entered into a contract on December 22, 1947 (appendix 1110), for the repayment of the cost of the distribution works.

F. All-American Canal Contract: City of San Diego (Appendix 1111)

On February 15, 1933, the Secretary had entered into an agreement with the City of San Diego (appendix 1009), providing for the storage and delivery of water to that city, and reciting that the parties proposed to enter into an agreement for the utilization of the All-American Canal for that purpose.

On October 2, 1934, the same parties entered into a contract (appendix 1111), obligating San Diego to pay a pro rata proportion of the investment in the All-American Canal, and entitling the city to utilize 155 second-feet of capacity to take delivery of the water (up to 112,000 acre-feet annually), provided for in its agreement with the Secretary of February 15, 1933 (appendix 1009).

²² Public Law 121 (80th Cong.).

The designs for the canal were accordingly amended to provide for an increased capacity, to serve San Diego, and the canal as constructed provides that capacity.

Later, however, as indicated in chapter XII, San Diego elected to join the Metropolitan Water District and take water via an extension of that district's aqueduct, from the junction at San Jacinto to the City of San Diego reservoir at San Vicente. The city remains obligated for its proportionate part of the All-American Canal costs, notwithstanding.

G. Construction of the All-American Canal

Construction of the main All-American Canal commenced August 8, 1934. Imperial Dam was begun in January 1936. The branch canal to Coachella Valley was started in August 1938. Imperial Dam and the All-American Canal head works were dedicated by the Secretary of the Interior October 18, 1938. The main All-American Canal was dedicated by Commissioner of Reclamation John C. Page on October 12, 1940. The first official delivery of water through the All-American Canal to Imperial Irrigation District occurred October 13, 1940. The entire supply for the Imperial Irrigation District has been furnished through the All-American Canal since March 1942. The Coachella branch canal is scheduled for completion in 1950.

Imperial Dam²³ is a concrete structure in the main stream of the Colorado, about 18 miles above Yuma. In general, the dam and appurtenant structures, having an over-all length of 3,485 feet, may be divided into six divisions: the California abutment, the All-American Canal headworks (which are a part of the canal but built into the dam structure), the sluiceway, the overflow weir, the Gila headworks (which are a part of the Gila main canal but built into the dam structure), the Arizona abutment and dike. The overflow weir constitutes the central portion, 1,197.5 feet long and rising about 43 feet above the stream bed. The dam provides the diversion point for the All-American Canal on the California side and the Gila Canal on the Arizona side. Laguna Dam, about 4 miles downstream, is now in effect a tailwater control for the upper dam. Imperial Dam created a reservoir with an initial capacity of 85,000 acre-feet, but not for storage purposes, as it began to fill rapidly with silt, as anticipated.

The All-American Canal²⁴ headworks at the western end of Imperial Dam, 386 feet long, provide a diversion of 15,155 cubic feet per second. Four desilting basins (three now in operation) are provided

²³ For a description of Imperial Dam in more detail, see 29 Reclamation Era 28 (1939).

²⁴ For a description of the All-American Canal, see hearings, House Committee on Appropriations, on the Interior Department appropriation bill for the fiscal year 1949, p. 1597 et seq. The route and design were based on a report by H. J. Gault (1931).

at the headworks. The canal follows the river for the first 22 miles. The initial capacity is maintained for 15 miles to Syphon Drop, at which point 2,000 second-feet, carried for the Yuma project, is delivered to the Syphon Drop power plant. This plant, although located on the California side, is operated by the United States for and as a part of the Yuma project, Arizona. A portion (approximately 800 cubic feet per second) of this is carried under the river through a siphon to the Yuma Canal system, and the balance is discharged into the river through the Syphon Drop power plant.

A capacity of 13,155 cubic feet per second is maintained for the next 7 miles, to Pilot Knob. At this point, water may be discharged into the river either through the projected Pilot Knob power plant, or the Pilot Knob wasteway. In either event, it reaches the river above the Mexican boundary and above the works controlling the heading of the Alamo Canal. These works are in the United States. They comprise Rockwood Gate, which controls the amount diverted from the river into the headworks of the Alamo, and Hanlon Heading, which controls the amount thereof passing from the headworks into Mexico. These control works are to be operated and maintained by the International Boundary and Water Commission under the terms of the Mexican water treaty (appendix 1405). No part of the water carried by the All-American Canal can be physically diverted into Mexico except through structures (Rockwood Gate and Hanlon Heading) controlled by the International Boundary and Water Commission.

The All-American Canal turns west at Pilot Knob, roughly paralleling the border, with a capacity of 10,155 cubic feet per second for 14 miles to drop No. 1. At that point the Coachella branch takes out, with a capacity of 2,500 second-feet. This branch is 119 miles long, carrying water to the Coachella Valley. (See ch. XI (E) above.) Of this 2,500 cubic feet per second, 1,000 is carried for Imperial Irrigation District, for use on the East Mesa, which this branch traverses for 49 miles. Beyond that point, the capacity, now reduced to 1,500 cubic feet per second, is maintained to the boundary of the Coachella district, where it gradually tapers off to 425 cubic feet per second.

The main canal from the junction of the Coachella branch (drop No. 1) continues west 44 miles, gradually reducing in capacity from 7,655 to 2,655 cubic feet per second.

The main All-American Canal is thus 80 miles long, and the Coachella branch 119; water is carried for Coachella a total of 155 miles, including the common sections.

The Gila Canal (referred to in ch. XII (H)) takes off from the headworks at the eastern end of Imperial Dam to serve lands of the Gila project, Arizona.²⁵

²⁵ For a description of the Gila project, see hearings, House Committee on Appropriations, or the Interior Department Appropriation Act for Fiscal Year 1949, p. 1156.

H. Summary of Interests in All-American Canal

In general, the various All-American Canal contracts provide that costs shall be allocated on the basis of capacities assigned to each agency, except that the capacity for the Yuma project is to be provided without cost to that project or the United States, save for turn-out structures. The share of the Gila project in the cost of Imperial Dam and certain portions of the All-American Canal has not been determined as of the date of publication. The Reclamation Bureau to date has not published tables setting up either the allocation of costs nor basis for determining allocations. The assignment of capacities in various portions of the canal is shown on the following table:

TABLE 5.—All-American Canal: Assignment of capacities

Section of canal	Length in miles	Capacity in cubic feet per second				
		Total	Imperial Irrigation District	City of San Diego	Coachella Valley County Water District	Yuma project
Main All-American Canal:						
Head works and canal to Siphon Drop.....	15	15,155	11,500	155	1,500	12,000
Siphon Drop to Pilot Knob.....	7	13,155	11,500	155	1,500	-----
Pilot Knob to drop No. 1 (Coachella Canal turn-out).....	14	10,155	8,500	155	1,500	-----
Drop No. 1 to end of canal.....	44	7,655-2,655	7,500-2,500	155	-----	-----
Total.....	80	-----	-----	-----	-----	-----
Branch canal to Coachella:						
Head (drop No. 1) to north end of Imperial Irrigation District.....	49	2,500-1,500	1,000-0	-----	1,500	-----
North end of Imperial Irrigation District to end of canal.....	70	1,500-425	-----	-----	1,500-425	-----
Total.....	119	-----	-----	-----	-----	-----

¹ Cost of capacity for Yuma project is charged to other contractors. Yuma project pays cost of turn-out structures only.

NOTE.—Imperial Dam is a part of the All-American Canal and also serves the Gila project in Arizona (2,400 cubic feet per second).

I. Effect of the Mexican Water Treaty on the All-American Canal

The treaty with Mexico, February 3, 1944 (appendix 1405), contained a number of provisions relating specifically to the All-American Canal. Article 11 (c) of the treaty provides that after Davis Dam and Reservoir are placed in operation (see appendix 1214, re Davis Dam) until January 1, 1980, the United States shall deliver 500,000 acre-feet annually, and after January 1, 1980, 375,000 acre-feet annually, at the international boundary line by means of the All-American Canal. Article 12 (b) obligates the United States to construct Davis storage dam and reservoir within 5 years from the date of the entry into force of the treaty (which was November 8, 1945).

Article 12 (c) obligates the United States to construct or acquire works necessary to convey a part of the waters allotted to Mexico to the Mexican diversion points on the international land boundary. Article 14 provides that in consideration for the use of the All-American Canal for the delivery of water to Mexico as provided in articles 11 to 15, Mexico shall pay to the United States its proportion of the cost incurred in the construction of Imperial Dam and the section of the All-American Canal from Imperial Dam to Pilot Knob, and a proportionate part of the annual cost of operation and maintenance of these facilities. Article 14 (b) provides that in the event revenues from the sale of hydroelectric power generated at Pilot Knob become available for the amortization of part or all of the cost of the facilities named in article 14 (a), the part that Mexico shall pay of the cost of these facilities shall be reduced or repaid in the same proportion. Such revenues shall not become available until the cost of any works constructed for the generation of power are fully amortized from revenues derived therefrom. Article 15 provides for the setting up of an annual schedule to cover the delivery of water at the boundary line by means of the All-American Canal, the schedule to be formulated by the International Boundary and Water Commission, subject to certain limitations. By article 15 (d), the United States declared its intention to cooperate with Mexico in attempting to supply additional quantities of water under certain circumstances through the All-American Canal, if such use of the canal and facilities will not be detrimental to the United States, provided that such deliveries shall not have the effect of increasing the total schedule of deliveries to Mexico.

These provisions are at variance with the stipulation in section 1 of the Boulder Canyon Project Act ²⁶ that the Hoover Dam and All-American Canal should be constructed—

for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States—

and the authorization in that section for construction of—

a main canal and appurtenant structures located entirely within the United States, connecting * * * with the Imperial and Coachella Valleys in California—

as well as the provisions in section 7 granting to American districts and agencies the right to develop power and apply the net proceeds as stipulated in that section. So also with section 7, providing for the transfer of title of certain parts of the canal to the American districts interested.

As of this writing, negotiations between the affected districts and the United States to accomplish the adjustments made necessary by the treaty are under way, but have not been consummated. ²⁷

²⁶ Act of December 21, 1928 (45 Stat. 1057) (appendix 401 herein).

²⁷ See further references in ch. XIV.

J. Transfer of Operation and Maintenance of the All-American Canal

On February 28, 1947, the Secretary of the Interior transferred to the Imperial Irrigation District operation and maintenance of the main All-American Canal west of engineer station 1098 (Pilot Knob). As of this writing the operation and maintenance of Imperial Dam, the portion of the main canal from Imperial Dam to Pilot Knob, and the Coachella branch, have not been transferred.²⁸

²⁸ See hearings, House Committee on Appropriations, Interior Department appropriation bill for fiscal year 1949, pp. 1597-1614.

Chapter XII

RELATED PROJECTS

A number of important projects, built or authorized, are related directly or indirectly to the Boulder Canyon project. The project itself, as previously outlined, comprises Hoover Dam, Hoover Dam power plant, and the All-American Canal. The Hoover Dam transmission lines, although privately financed, are such an integral part of the project that they are discussed, *supra*, as a part of the project.

The works more or less directly related to the Boulder Canyon project, built or authorized to date, in general order from north to south, are as follows:

- A. Davis Dam, 67 miles below Hoover Dam.
- B. Parker Dam, 88 miles below Davis Dam.
- C. Colorado River aqueduct, diverting from the reservoir impounded by Parker Dam.
- D. Alamo Dam (on the Bill Williams River), on the margin of Parker Dam Reservoir.
- E. Headgate Rock Dam (Colorado River Indian Reservation), 14 miles below Parker Dam.
- F. Colorado River front work (levees and channel control), from Headgate Rock Dam to the Mexican boundary.
- G. Palo Verde weir (Palo Verde Irrigation District), 43 miles below Headgate Rock Dam.
- H. Gila project (Imperial Dam), 90 miles below the Palo Verde weir and 22 miles above the Mexican boundary.
- I. Yuma project (Laguna Dam), 5 miles below Imperial Dam.
- J. Rockwood Gate and Hanlon Heading, immediately above the upper Mexican boundary.
- K. Morelos Dam (in Mexico and Arizona), about 1 mile below the upper Mexican boundary, in the limitrophe section of the river.

These, together with the Comprehensive Plan of Development of the Colorado River, are identified below.

A. Davis Dam

(1) *Background and name of Davis Dam.*—A dam at this site was proposed by A. P. Davis and J. B. Lippincott in the First Annual Report of the Reclamation Service (H. Doc. 79, 57th Cong.). Such a dam, for reregulation of the discharges from Hoover Dam, was con-

templated in the power studies referred to in chapter VI. The structure is appropriately named for Arthur Powell Davis, whose name frequently recurs in this volume in connection with almost every phase of the Boulder Canyon project, the Colorado River Compact and the activities of the Reclamation Service, with which he was identified as engineer and Commissioner until his retirement in 1924.

(2) *Finding of feasibility, April 26, 1941 (appendix 1214).*—Davis Dam was originally authorized by a secretarial finding of feasibility¹ under the authority of the Reclamation Project Act of 1939,² section 9. It is under construction in the main stream of the Colorado River, at Pyramid Canyon, about 67 miles downstream from Hoover Dam and 34 miles west of Kingman, Ariz. It will be an earth and rock fill structure, having a volume of approximately 3,800,000 cubic yards, a maximum height of 138 feet above normal stream bed, and a crest length of 1,600 feet. It will create a storage reservoir with a total capacity of 1,820,000 acre-feet, of which 1,600,000 acre-feet will be "live" storage. A power plant, to be located on the Arizona side of the river, will have an installed capacity of 225,000 kilowatts, furnished by five 45,000 kilovolt-ampere generating units. The estimated output will be in excess of 800,000,000 kilowatt-hours annually. The transmission system will interconnect Davis, Parker, and Hoover power plants.

Construction was initiated in 1942, suspended because of the war, and resumed April 3, 1946.

(3) *Davis transmission system.*³—With the exception of two 69,000-volt lines, one to Needles, Calif., and the other to Kingman, Ariz., all transmission circuits from Davis power plant will operate at 230,000 volts. Davis will be interconnected with both Hoover and Parker power plants and a line almost 300 miles in length will pass near Kingman and through Prescott and Mesa, east of Phoenix, to Coolidge where 115,000-volt extensions will connect with Tucson, Maricopa, Cochise, and other adjacent power markets in Arizona.

The transmission circuits from Davis power plant are tabulated in appendix 1215.

(4) *Allocation of energy.*—On June 23, 1948, Secretary Krug approved a tentative allocation of energy to be generated at Davis Dam. This appears herein as appendix 1216.

(5) *Mexican treaty provisions.*—The Mexican water treaty of February 3, 1944 (appendix 1405), obligated the United States (art. 12 (b)) to construct Davis Dam at its own expense within a period of

¹ H. Doc. 186 (77th Cong., 1st sess.), reprinted herein as appendix 1214.

² 53 Stat. 1187.

³ For a description of Davis Dam and power plant and transmission lines now under construction, see hearings, House Committee on Appropriations, Interior Department appropriation bill, fiscal year 1949, p. 1188, et seq.

5 years from the date of entry into force of the treaty (November 8, 1945; see appendix 1406), and thereafter to—

operate and maintain at its expense, the Davis storage dam and reservoir, a part of the capacity of which shall be used to make possible the regulation at the boundary of the waters to be delivered to Mexico in accordance with the provisions of Article 15 of this treaty.

Article 27 of the treaty suspended the provisions of articles 10, 11, and 15, covering the allocation and delivery of water to Mexico—

during a period of five years from the date of entry into force of this treaty, or until Davis Dam and the major Mexican diversion structure on the Colorado River are placed in operation, should these works be placed in operation prior to the expiration of said period.

The Senate reservations of April 18, 1945 (see appendix 1405), recognized specific authorization in the treaty for expenditures for eight works, including—

4. The Davis Dam and Reservoir mentioned in subparagraph (d) of article 12 of the treaty.

B. Parker Dam

Because of their close relationship to the Hoover Dam power contracts, the basic Parker Dam contracts are included in this volume.

(1) *Cooperative contract of February 10, 1933 (appendix 1201).*—As part of its plans for the Colorado River aqueduct, the Metropolitan Water District considered, in the alternate, construction of a pumping plant in the vicinity of Parker, Ariz., or construction of a dam at that point to elevate and maintain a stable water surface. The United States had need for a reservoir at that point for reregulation of the river, and development of power for utilization on the Colorado River Indian Reservation, the Gila project in Arizona, and elsewhere in that State. The district and the United States entered into a cooperative contract on February 10, 1933 (printed herein as appendix 1201), under which the United States agreed, with funds provided by the district, to construct and operate the dam. The United States was to retain title and retain control over all water passing the dam. The district was accorded the right to divert water from the reservoir created by the dam and one-half the power privilege. The United States retained one-half the power privilege and the right to divert water from the reservoir for the Colorado River Indian Reservation, and for projects built under the reclamation law. The Government also secured the right, in this contract, to utilize excess capacity in the district's transmission system from Hoover Dam to Parker Dam.

(2) *Litigation.*—The State of Arizona resisted the construction of the dam, calling out its militia. In January 1935 the United States

commenced an original action in the United States Supreme Court to enjoin the State from interfering. The decision, rendered on April 29, 1935, refused the injunction on the ground that the Secretary of the Interior did not have adequate statutory authority (*United States v. Arizona*, 295 U. S. 174 (1936), appendix 1303).

(3) *Legislation*.—The difficulty was removed by reauthorization of the project and confirmation of the 1933 contract, *supra*, in the Rivers and Harbors Act of 1935 (extracts from which are printed herein as appendix 1202).

Supplemental legislation, respecting compensation to Indians for rights-of-way, is cited in the margin.⁴

(4) *Construction*.—Construction of the dam was resumed after enactment of the Rivers and Harbors Act of 1935. The contractor and its engineer in charge, as at Hoover Dam, were Six Companies, Inc., and Frank Crowe. The dam is of the variable-radius-arch type, constructed of concrete, with a crest length of 800 feet, a base width of 100 feet, a top width of 50 feet, a maximum height above bedrock of 322 feet, and a volume of about 268,000 cubic yards. Because of the depth of the bedrock, upon completion three-fourths of the dam was below the bed of the river. The river level was raised only about 70 to 80 feet; but a reservoir, 28,000 acres in area with a capacity of 720,000 acre-feet, was created. This reservoir extends 45 miles up the Colorado and 5 miles up the Williams River.

The Parker power plant, as originally constructed, had space for four generators, with a rated capacity of 25,000 kilowatts each.

(5) *Supplemental contracts*.—FOREBAY CONTRACT (APPENDIX 1203): On September 29, 1936, the basic 1933 contract was supplemented by an agreement providing for the construction by the United States of a forebay and the power-plant substructure.

POWER-PLANT CONTRACTS (APPENDIX 1204): On April 7, 1939, the district and the United States entered into a contract providing for the construction of a power plant, and amending the contract of 1933 and

⁴ Act of July 8, 1940 (54 Stat. 744), in aid of the construction of the Parker Dam project, granted to the United States all interest of the Indians to tribal and allotted lands in the Fort Mojave Indian Reservation, Ariz., and the Chemehuevi Reservation, Calif., designated by the Secretary of the Interior, subject to determination of compensation by the Secretary, with the direction that the amount so determined should be paid to the Secretary by the Metropolitan Water District in accordance with the terms of the cooperative contract of February 10, 1933, for the construction of Parker Dam (appendix 1201). See Solicitor's opinions (unpublished), August 24, 1936, December 15, 1937, re Fort Mojave and Chemehuevi Indians, respectively. The act of October 28, 1942 (56 Stat. 1011), granted to the United States the interests of the Indians in lands acquired for construction, operation, and maintenance of transmission lines, the amounts found by the Secretary to be due to the tribes or individual allottees to be paid them from the funds available for the Parker Dam power project, or used for the acquisition of other lands.

that of 1936 (*supra*) in several respects. On July 10, 1942, by supplemental agreement, the contract of April 7, 1939, was amended. All of the operative parts of the 1939 and 1942 agreements appear in the amended text of the power plant contract of 1939 (printed herein as appendix 1204).

CHANGE OF SAN DIEGO DIVERSION POINT; SUPPLEMENTAL CONTRACT OF OCTOBER 1, 1946 (APPENDIX 1205): The inclusion of the San Diego County Water Authority in the district necessitated a change in the point of diversion of water for San Diego from that specified in the San Diego All-American Canal contract of October 2, 1934 (appendix 1111), to a point above Parker power plant. (See San Diego contracts of October 4, 1946 (appendix 1012), and March 14, 1947 (appendix 1014).) The effect of such added diversion was to diminish the power privilege at Parker Dam. The United States insisted that the district agree to hold the United States harmless against that reduction. This was done by contract dated October 1, 1946 (appendix 1205). To enable the district to comply with those requirements, a collateral agreement was made between the Edison Co. and the district for the replacement energy involved (omitted from this volume). The estimated present worth of the energy required to make good the depletion of the plant output was added to the amount payable to the district by the San Diego County Water Authority as a special tax.

FOUR-PARTY 1947 PARKER UNIT CONTRACT (APPENDIX 1206): The district's 1945 resale contract previously referred to (appendix 912) provided an absorption period with respect to the district's unused energy. By an agreement, dated May 20, 1947 (appendix 1206), the district agreed with the purchasers of its unused Hoover Dam energy to exercise its right to have units 3 and 4 of Parker power plant transferred to its service immediately after December 13, 1952, and thereafter to use Parker energy in preference to energy from Hoover Dam. This operation will have the effect of making more energy available for the purchasers of district unused energy at Hoover Dam. In consideration thereof the purchasers under the 1945 resale contract agreed to eliminate the advantage accruing to them by virtue of the absorption period stated in the 1945 agreement, so that, in effect, the district thereafter should suffer no loss on account of unused Hoover Dam energy.

(6) *Operations.*—Parker Dam power has proved an important source of energy for the central Arizona area, as well as Imperial Irrigation District, California. Provision is made in the Hoover Dam agency contract (appendix 902) and the energy contract with the Metropolitan Water District (appendix 905) for the integration of the various Government-owned power plants on the Colorado River, including Hoover and Parker Dams, and the utilization of the

district's transmission line between Hoover Dam and Parker Dam, in part.

7. *Parker transmission system.*—Whereas the bulk of Hoover power is at present transmitted to the western areas of southern California, most of the power from Parker and Davis power plants is being utilized in the States of Arizona and Nevada. From Parker power plant 161,000-volt transmission circuits serve the Central Arizona Light & Power Co. and the Salt River Valley Water Users Association in the Phoenix area, with a 115,000-volt extension from Phoenix to Tucson. Another line of similar voltage extends to Gila and Yuma for customers in that vicinity and thence into the Imperial Irrigation District of Southern California. In addition to these 161,000-volt circuits, a short 230,000-volt line connects the Parker plant with the Metropolitan Water District's system at Gene substation and a 69,000-volt line carries Parker power to the Bagdad Copper Co. in Arizona.

C. Colorado River Aqueduct

(1) *Historical background.*—The Colorado River aqueduct is one of the major water projects of the lower Colorado River Basin, dependent on Lake Mead for storage and Hoover Dam for power for pumping. It was constructed from 1933 to 1940 and has been operated since 1941 by the Metropolitan Water District of Southern California. This is an overlapping district composed of 16 member cities and water districts, organized in 1927, distributing wholesale municipal water supplies to 27 incorporated cities and their suburbs in Los Angeles, Orange, and San Diego Counties of southern California. The district has a present population of 3,500,000, grown from 2,350,000 since 1940 and from less than 150,000 in 1900. The project was financed by general obligation bonds which were held temporarily during the depression years by the Federal RFC, but were long ago resold to the investing public at a considerable profit to the United States.

(2) *Government contracts.*—As outlined in chapters VI and X, on April 24, 1930, the Metropolitan Water District of Southern California entered into a contract with the United States (appendix 1007) for the storage and delivery of 1,050,000 acre-feet annually and, on April 26, 1930, entered into a contract with the United States (tabulated in appendix 602; printed in full as appendix 3 to the first edition) for Hoover Dam power to pump water into and in its aqueduct. The water contract was amended on September 28, 1931 (appendix 1008), and the power contract on May 29, 1941 (appendix 905). The district's cooperative contract with the United States for the construction of Parker Dam, February 10, 1933 (appendix 1201), has been referred to, supra.

(3) *Federal rights-of-way.*—The district, before deciding on the Parker route, investigated several alternative routes for its aqueduct. The route having been determined, Federal legislation was sought and obtained in the act of June 18, 1932,⁵ granting a base fee to the public lands involved.

(4) *Construction of main aqueduct.*—Downstream 150 miles from Hoover Dam at the intake pumping plant, the aqueduct diverts from the right bank of the Colorado River, there widened into Lake Havasu by Parker Dam 2 miles further south. Four other successive pumping plants lift the water a total of 1,617 feet to a maximum elevation of 1,807 feet at Shaver Summit, near Desert Center. The main aqueduct terminates at Lake Mathews (107,000 acre-feet present capacity), 242 miles from the Colorado River. It includes 92 miles of 16-foot diameter tunnels, 64 miles of open canal, 83 miles of grade conduit and pressure pipes (inverted siphons), 1.2 miles of pump delivery line (steel), and 4 small regulating reservoirs and sumps. Beyond Lake Mathews, 16 miles of additional tunnel and large pressure pipes up to 12 feet 8 inches in diameter diverge to reach the various member cities, with a total present system length, including branch aqueduct lines, of 500 miles.

The main aqueduct is constructed to full capacity to carry the district's contractual water right of 1,212,000 acre-feet annually, or an average of 1,675 second feet, except for the postponed second barrel of several long inverted siphons. The pumping plants include at present but three of the ultimate nine pumps of 200 second feet rated unit capacity, with new units to be added gradually as required. The aqueduct was constructed for 10 percent less than its original estimated cost and bond issue of \$220,000,000. Extensions and betterments to date have increased this original cost to a present total of \$205,000,000.⁶

(5) *San Diego aqueduct.*—On February 15, 1933, the City of San Diego executed a Hoover Dam water-storage contract (appendix 1009). Prior to that time the formation of a county-wide water district had been under preparation and, on February 9, 1933, in transmitting the above contract to the City of San Diego, Secretary Wilbur took note of those proposals, pointing out that the contract submitted—

protects the outlying towns of San Diego County by providing for allocation between them and the City as the City and County may agree, or as the State may allocate. If they later choose to form a metropolitan water district, that district may either contract with the City, or enter into a new contract with the United States in substitution for the City, upon the State's recommendation.

⁵ Act of June 18, 1932 (40 Stat. 324, ch. 270).

⁶ For a review of this project, see History and First Annual Report, The Metropolitan Water District of Southern California (1939).

On October 2, 1934, the city of San Diego contracted with the United States for 155 second feet of capacity in the All-American Canal (appendix 1111).

On June 9, 1944, the San Diego County Water Authority, comprising San Diego and four other cities, three irrigation districts, and one public utility district, was organized under the County Water Authority Act,⁷ for the primary purpose of importing Colorado River water into San Diego County.

However, because of the critical situation in San Diego's water supply during the war, President Roosevelt, on October 3, 1944, appointed an interdepartmental committee to recommend methods for constructing and financing the needed facilities for increasing the water supply. This committee reported to the President on October 21, 1944, recommending the immediate construction at Federal expense of an aqueduct connecting with the Colorado River aqueduct of the Metropolitan Water District near San Jacinto, and extending therefrom to the San Vicente Reservoir of the San Diego city water system.⁸

By Executive Order dated November 29, 1944, the United States Bureau of Reclamation was directed to prepare plans and specifications for such an aqueduct. An agreement was entered into between the Navy Department and the City of San Diego, October 17, 1945 (appendix 1010), supplemented September 23, 1946 (appendix 1011), and October 29, 1946 (appendix 1013), under which the Navy agreed to build the structure, on plans and specifications prepared by the Reclamation Bureau, and the city agreed to repay \$15,000,000 of its cost in annual installments. Actual construction began on November 15, 1945, and the aqueduct was completed to a capacity of 75 feet per second on November 26, 1947.⁹ This capacity will deliver approximately one-half of the 112,000 acre-feet of water covered by San Diego's basic contract of February 15, 1933 (appendix 1009).

On January 27, 1947, the Comptroller General rendered an opinion¹⁰ questioning the authority of the Navy to enter into the agreement with the city. The difficulty was solved by the act of April 15, 1948 (appendix 1208), which ratified the agreement.

D. Alamo Dam

The Flood Control Act of 1944¹¹ authorized construction by the War Department of a flood-control dam on the Bill Williams River,

⁷ California Statutes, 1943, ch. 545, p. 2090.

⁸ First Annual Report of the San Diego County Water Authority (1946), p. 32.

⁹ Press release, U. S. Department of the Interior, December 9, 1947.

¹⁰ See review of this controversy in H. Rept. No. 1548 (80th Cong., 2d sess.), report of House Committee on Public Works on S. 1306 (80th Cong.).

¹¹ 58 Stat. 887, sec. 10.

which empties into Parker Dam Reservoir (Lake Havasu). The dam, as planned, will be located about 5 miles above the mouth of the Bill Williams River, or slightly above the margin of Lake Havasu, and will be 271 feet high and 545 feet long. It will create a reservoir with an area of about 13,000 acres.¹²

E. Headgate Rock Dam (Appendix 1202)

Headgate Rock Dam on the Colorado River serves the Colorado River Indian Reservation, which was established by an act of Congress approved March 4, 1865.¹³ The boundaries of the reservation were changed from time to time after its original establishment, by Executive orders. The irrigable area within the reservation is currently estimated at about 100,000 acres.

Headgate Rock Dam was authorized by the Rivers and Harbors Act of 1935 (appendix 1202). Construction was initiated by contract entered into June 15, 1938, and was completed in August 1941, at a total cost of \$4,867,521. Construction of main canals is under way.

The dam is essentially a diversion dam, described as—

a nonoverflowing, impervious core type, earth-fill, rip-rap faced, dam with an overflow type spillway having a hollow ogee weir ending in a circular bucket section as an energy dissipator for river flow.¹⁴

F. Colorado River Front Work

The construction of Laguna Dam for the Yuma project, and subsequently of other dams on the river, effected changes in the deposition of silt, and extensive levee and dredging operations have been required.

By the act of March 3, 1925,¹⁵ an appropriation of not to exceed \$35,000 annually was authorized—

as the share of the Government of the United States of the cost of operating and maintaining said Colorado River front work and levee system—

and \$650,000 was authorized to be appropriated to the reclamation fund for the benefit of the Yuma project for previous cost of operation and maintenance of the front work and levee system.

¹² For references to floods and silt originating in the Bill Williams River, see Sykes, "The Colorado Delta" (1937), p. 97 et seq.

¹³ Act of March 4, 1865 (13 Stat. 559). Among other statutes relating to the Colorado River Indian Reservation are the act of April 21, 1904 (33 Stat. 189), authorizing diversion of water from the Colorado River; act of May 25, 1918 (40 Stat. 568), appropriating funds for "continuing the purpose of securing an appropriation of water"; and various appropriation acts for Headgate Rock Dam.

¹⁴ Communication from Office of Indian Affairs, February 12, 1948.

¹⁵ 43 Stat. 1198.

The act of July 1, 1940,¹⁶ increased this authorization to \$100,000 annually and enlarged the authorization to include—

the cost of other necessary protective works and systems along the Colorado River between said Yuma project and Boulder Dam.

The act of June 28, 1946¹⁷ (appendix 1209), substantially enlarged this authorization to include (a) operation and maintenance of the front work and levee system in Arizona, Nevada, and California; (b) construction of protection and drainage works along the river; (c) controlling the river, and modifying, straightening, and rectifying its channel; (d) conducting investigations. A series of provisos stipulated that the expenditure of money for these purposes should not be deemed a recognition of any obligation or liability on the part of the United States; local communities might be required to furnish rights-of-way; etc. The Secretary was granted the same authority with respect to acquisition and disposition of land, utilization thereof, construction-supply contracts, performance of necessary acts, and the making of regulations, etc., which he has under the reclamation laws.

Work has been undertaken under this authorization in the Needles area, where the river bed aggraded about 11 feet between 1902 and 1935, and an additional 6 feet from 1935 to 1940, causing serious flood danger to the city of Needles, Calif.

Some rectification has been undertaken in the Palo Verde area, and repairs on Laguna Dam and levees have been made. A dredging program is currently under way, by force account.¹⁸

G. Palo Verde Diversion Works

The intake to the Palo Verde irrigation canal, about 43 miles below Headgate Rock Dam, which had been constructed at the expense of the Palo Verde Irrigation District, gradually became inoperative as a result of the degrading of the river after the completion of Parker Dam.

In the First Deficiency Appropriation Act of 1944¹⁹ funds were appropriated for the Colorado River front work and levee system, to be available—

for the construction, operation, and maintenance of a temporary weir in the Colorado River below the heading of the diversion canal for the Palo Verde Irrigation District—

with a proviso that construction, operation, and maintenance thereof should not be deemed a recognition of any obligation or liability on the part of the United States, and providing that no part of the amount

¹⁶ 54 Stat. 708.

¹⁷ 60 Stat. 338.

¹⁸ Hearings, House Committee on Appropriations, Interior Department appropriation bill for the fiscal year 1949, p. 1617 et seq.

¹⁹ Act of April 1, 1944 (58 Stat. 157).

appropriated should be expended for construction, operation, and maintenance of the weir after 6 months from the date of the termination of the war, as determined by proclamation of the President.

A temporary rock weir was constructed in 1944, restoring gravity diversion in 1945, and maintenance has been required since that time.²⁰

The act of June 28, 1946²¹ (appendix 1209), authorizing annual appropriations for Colorado River front work and levee systems, repeated this disclaimer of liability and provided that the act should not affect the provisions of the Deficiency Act of 1944, referred to above.

Some 40 miles downstream, aggradation of the river bed resulted in the virtual plugging of the Palo Verde Irrigation District's outlet drain. A Federal dredging program now under way contemplates the ultimate excavation of a new channel for the river about 12 miles in length, through the Cibola Valley in Arizona, which will reduce the length of the waterway and deposit the suspended silt farther downstream, in the lake formed by Imperial Dam.²²

The Interior Department Appropriation Act for the fiscal year 1949²³ included funds in the Colorado River front work and levee system item for maintenance work on the temporary weir.

H. Gila Project

The Gila project, now under construction, adjoining portions of the Yuma project, will divert water on the Arizona side of Imperial Dam. (22 miles above the upper Mexican boundary), to irrigate 25,000 acres on the Yuma Mesa, 15,000 acres on the north and south Gila Valleys, and 75,000 acres in the Wellton-Mohawk division.²⁴

(1) *Finding of feasibility, 1937*.—The project, with different boundaries, was originally authorized by the President June 21, 1937 (appendix 1211), pursuant to findings made under section 4 of the act of June 25, 1910,²⁵ and subsection 4 (b) of the act of December 5, 1924.²⁶ The statute last cited required findings by the Secretary of the Interior, including one "concerning the water supply." On that subject, the Secretary's finding was:

While an agreement has not been concluded by the States, there is no doubt that such an agreement when reached will insure a full water supply for at least

²⁰ Hearings, House Committee on Appropriations, Interior Department appropriation bill for fiscal year 1949, p. 1618.

²¹ 60 Stat. 338.

²² Hearings, Interior Department appropriation bill, fiscal year 1949, supra, p. 1618.

²³ Public Law 841 (80th Cong., 2d sess.).

²⁴ Hearings of House Committee on Appropriations on Interior Department appropriation bill for fiscal year 1949, p. 1156, et seq.

²⁵ 36 Stat. 835.

²⁶ 43 Stat. 702.

the initial division of the project. In all sales of water rights it will be necessary to prescribe that the water supply of the project is subject to the Colorado River Compact, and to the Boulder Canyon Project Act and to the sales of water under the Compact and said Act and to the treaty which it is anticipated will be made with Mexico fixing that country's rights in the flow of the Colorado River.

The finding of feasibility was preceded by a report to the Secretary of the Interior, February 15, 1936, by the Committee on the Agricultural and Economic Feasibility of the Gila Valley Project, and by a report by Senior Engineer Porter J. Preston, September 10, 1934.

The area of the proposed project was approximately 150,000 acres, and the anticipated consumptive use was approximately 600,000 acre-feet.²⁷ The greatest part of the land would have been located on the Yuma Mesa.

(2) *Authorization: Act of July 30, 1947.*—Subsequent experience, however, demonstrated a duty of water in excess of 11 acre-feet per acre²⁸ and it was determined to relocate the boundaries to exclude a part of the Yuma Mesa area, and substitute 75,000 acres in the Wellton-Mohawk area.

Legislation to that end was introduced in the Seventy-ninth Congress²⁹ and extensive hearings were held.³⁰ The bill was not reported out.

By the act of July 30, 1947³¹ (appendix 1212), the project was reauthorized, with limitations reducing the area of the original Gila project to 40,000 acres (25,000 acres thereof on the Yuma Mesa and 15,000 acres within the north and south Gila Valleys)—

or such number of acres as can be adequately irrigated by the beneficial consumptive use of no more than 300,000 acre-feet of water per annum diverted from the Colorado River, and as thus reduced is hereby reauthorized and redesignated the Yuma Mesa division, Gila project—

plus the Wellton-Mohawk division, comprising approximately 75,000 irrigable acres—

or such number of acres as can be adequately irrigated by the beneficial consumptive use of no more than 300,000 acre-feet of water per annum diverted from the Colorado River—

²⁷ The Interior Department Appropriation Act for the fiscal year 1938 (50 Stat. 564, 592), contained the following:

GILA PROJECT, Arizona, \$700,000.00; said Gila Project, including the waters to be diverted and used thereby and the lands and structures for diversion and storage thereof, to be subject to the provisions of the Boulder Canyon Project Act of December 21, 1923, and subject to and controlled by the provisions of the Colorado River Compact signed at Santa Fe, New Mexico, November 24, 1922.

²⁸ Hearings, House Committee on Irrigation and Reclamation, H. R. 5434 (79th Cong., 2d sess.), p. 68, et seq.

²⁹ H. R. 5434 (79th Cong.).

³⁰ Hearings, House Committee on Irrigation and Reclamation, on H. R. 5434 (79th Cong., 2d sess.).

³¹ Public Law 272 (80th Cong.).

the Wellton-Mohawk unit being substituted for the land eliminated from the Yuma Mesa division. Other provisions of the act subjected the lands and structures for the diversion, transportation, delivery, and storage of water to the provisions of the Project Act and the Colorado River compact and stipulated that the acreage limitations—
are for the sole purpose of fixing the maximum acreage of the project and shall not be construed as interpreting, affecting, or modifying any interstate compact or contract with the United States for the use of Colorado River water or any Federal or State statute limiting or defining the right to use Colorado River water of or in any State.³²

The Gila project shares in the cost of Imperial Dam and appurtenant works. As yet no allocation of costs of those works has been announced by the Bureau of Reclamation.

I. Yuma Project

The Yuma project comprises 69,000 irrigable acres located in southwestern Arizona and southeastern California. It was initially authorized by the Secretary of the Interior.³³ By the act of April 21, 1904,³⁴ a diversion was authorized for the irrigation of Indian and other lands, and under this authorization Laguna Dam was constructed in 1909.³⁵ The project area at present is distributed: Reservation division, California, 14,625 acres; valley division, Arizona, 50,390 acres; Yuma auxiliary or mesa division, Arizona, 4,025 acres. By contract of October 23, 1918 (appendix 1103), Imperial Irrigation District assumed the obligation to pay \$1,600,000 of the cost of Laguna dam.

Water was originally diverted at Laguna Dam and transported on the California side to Syphon Drop, where it was carried under the

³² The report of the House Committee on Public Lands on this legislation (H. Rept. 910, July 14, 1947, on H. R. 1597, 80th Cong.) stated:

It is the intent of the committee that nothing in this bill is to be construed as affecting the rights of the States of Arizona or California as to the use of the amount of water in the lower Colorado River Basin, that each State is entitled to under the existing compact, contracts, or law. The committee feels the dispute between these two States on the lower Colorado River Basin should be determined and settled by agreement between the two States or by court decision because the dispute between these two States jeopardizes and will delay the possibility of prompt development of any further projects for the diversion of water from the main stream of the Colorado River in the lower Colorado River Basin.

Therefore the committee recommends that immediate settlement of this dispute by compact or arbitration be made, or that the Attorney General of the United States promptly institute an action in the United States Supreme Court against the States of the lower basin, and other necessary parties, requiring them to assert and have determined their claims and rights to the use of the waters of the Colorado River system available for use in the lower Colorado River Basin.

³³ For a summary of Yuma project, see hearings of House Committee on Appropriations, Interior Department appropriation bill for fiscal year 1949, p. 1033 et seq.

³⁴ 33 Stat. 189.

³⁵ See Report of the All-American Canal Board (1920), p. 21.

river to Arizona. The United States installed a power plant at Syphon Drop in 1926. By the terms of the All-American Canal contract (appendix 1106), Imperial Irrigation District agreed (art. 15) to provide and pay for an additional 2,000 second-feet of capacity in the All-American Canal from Imperial Dam to Syphon Drop, free of cost to the Yuma project, on the assumption that the construction of Imperial Dam would prevent further diversions at Laguna for the Yuma project. The power head of the Syphon Drop power plant was thereby increased over 30 feet, without charge to Yuma project.

The United States has entered into a repayment contract with the Yuma County Water Users' Association³⁶ and individual water-right applicants on the Reservation and Mesa divisions are responsible for certain additional sums.

The Yuma project is operated by the Bureau of Reclamation with funds advanced annually by the water users, and power revenues.

No Hoover Dam water storage or delivery contract has been entered into with respect to this specific project.

J. Rockwood Gate and Hanlon Heading

These two structures presently control the diversions into the Alamo Canal, which originally served the Imperial Valley by a gravity route through Mexico, but which, since the construction of the All-American Canal, serves only Mexican lands. Both structures were built by Imperial Irrigation District, and title and control will pass to the International Boundary and Water Commission pursuant to the terms of the Mexican water treaty. (See appendixes 1405, 1410, 1411, 1412.)

Rockwood Gate, as described in Senate Document 142 (67th Cong., 2d sess. (1922), p. 75), located about a mile and a half above the upper Mexican boundary, is a concrete structure on the California side of the river, with its face parallel to the river bank, comprising 75 gates. It was built in 1917.

Rockwood Gate controls gravity diversions into the Alamo Canal headworks pool. Hanlon Heading, a gate structure in the Alamo Canal just above the boundary, controls the water passing therefrom into Mexico. This physical situation is described in chapter XI (G). After the construction of the Morelos Dam (infra), affording a new diversion into the Alamo Canal on Mexican soil, Rockwood Gate and Hanlon Heading will be used by the International Boundary and Water Commission to control and direct the outflow from Pilot Knob wasteway and Pilot Knob power plant on the All-American Canal. By closing Hanlon Heading and opening Rockwood Gate, the Com-

³⁶ House hearings on Interior Department appropriation bill for fiscal year 1949, *supra*, p. 1033.

mission may discharge into the river all of the water released from the All-American Canal at Pilot Knob, and keep all of it out of the Alamo Canal. By opening Hanlon Heading, the Commission may admit into the Alamo Canal water taken directly from the river through Rockwood Gate, or water released from the All-American Canal into the pool between Rockwood and Hanlon, as the Commission's discretion or as the treaty provisions may require, all of these operations being effected on American soil.

K. Mexican (Morelos) Diversion Dam (Appendixes 1408, 1409)

Article 12 (a) of the Mexican water treaty (appendix 1405) provides:

(a) Mexico shall construct at its expense, within a period of five years from the date of the entry into force of this Treaty, a main diversion structure below the point where the northernmost part of the international land boundary line intersects the Colorado River. If such diversion structure is located in the limitrophe section of the river, its location, design, and construction shall be subject to the approval of the Commission. The Commission shall thereafter maintain and operate the structure at the expense of Mexico. Regardless of where such diversion structure is located there shall simultaneously be constructed such levees, interior drainage facilities, and other works, or improvements to existing works, as in the opinion of the Commission shall be necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation, and maintenance of this diversion structure. These protective works shall be constructed, operated, and maintained at the expense of Mexico by the respective Sections of the Commission, or under their supervision, each within the territory of its own country.

As the treaty went into force November 8, 1945 (appendix 1406), the time prescribed for construction expires November 8, 1950.

On May 10, 1948, a joint report and recommendation to the International Boundary and Water Commission was submitted by the principal engineers of the two commissions (annex to appendix 1411). This report recommended the Algodones site about 1 mile downstream from the upper international boundary line, in the limitrophe section of the river. The proposed structure, to be built and operated by the Commission, was described as about 1,400 feet long, from levee to levee, with a gated section 702 feet and an overflow section 602 feet long, the dam to be of the floating type, built of concrete and steel, protected by concrete aprons, steel-sheet piling and rock riprap upstream and down, and with 20 radial gates so designed that they can be raised to safely pass a flood of 350,000 second-feet. The sill of the gates is to be at elevation 96.55 feet and the floor of the superstructure at elevation 138.12 feet. The design capacity for the canal heading is 8,000 cubic feet per second. The report outlined the character of

the river-protection work contemplated above the dam. It was estimated that the dam would cause a rise in the water surface upstream from the structure of 3.8 feet with a 350,000 second-foot flood, the rise extending along the Colorado as far as the mouth of the Gila, with backwater effects on up to Laguna Dam and up the Gila for some distance. The protective works required below the dam were left to further study.

On May 12, 1948, the Commission, in minute No. 189 (appendix 1408), by resolution, approved the recommendations of the principal engineers.

On June 10, 1948, the State Department (appendix 1409) approved minute No. 189, with three "understandings," to the effect (1) that waters arriving in the limitrophe section downstream from the dam should be included in the quantity of 1,500,000 acre-feet guaranteed to Mexico under article 10 of the treaty; (2) that the rules to be adopted by the Commission would have as an objective that no rise in the river water surface of ordinary flow should result from the operation of the structure, and that the amounts of water entering the United States from the Mexican canal system be held at a minimum; and (3) that the two Governments should instruct their Commissioners to expedite the plans and report on the protection works provided for in article 13 of the treaty.

L. Comprehensive Plan of Development

Section 15 of the Boulder Canyon Project Act³⁷ (appendix 401 herein) authorized and directed the Secretary of the Interior to make investigations and publish reports of the feasibility of projects in the seven basin States—

for the purpose of making such information available to said States and to the Congress, and of formulating a comprehensive scheme of control and the improvement and utilization of the water of the Colorado River and its tributaries— and authorized appropriations for that purpose.

Section 2 (d) of the Boulder Canyon Project Adjustment Act³⁸ (appendix 801), authorized transfer from the Colorado River dam fund, out of power revenues, of \$500,000 annually to the Colorado River development fund, directing that the first \$1,500,000 of its transfers—

are authorized to be appropriated only for the continuation and extension, under the direction of the Secretary, of studies and investigations by the Bureau of Reclamation for the formulation of a comprehensive plan for the utilization of waters of the Colorado River system for irrigation, electrical power, and other purposes, in the States of the upper division and the States of the lower division, including studies of quantity and quality of water and all other relevant factors.

³⁷ Act of December 21, 1928 (45 Stat. 1057).

³⁸ Act of July 19, 1940 (54 Stat. 774).

Pursuant to that authorization, the Secretary of the Interior submitted a proposed report to the seven basin States in 1947, under the provisions of section 1 of the Flood Control Act of 1944³⁹ (appendix 1217). The comments of the States, together with the proposed plan, redrafted and renamed "The Colorado River: Interim Report of the Secretary of the Interior," were transmitted to Congress by the Bureau of the Budget July 24, 1947, and printed.⁴⁰

The status of this report is indicated by Secretary J. A. Krug's letter to the President July 19, 1947, which says in part:⁴¹

As stated in the accompanying letter from the Commissioner of Reclamation to me dated July 17, 1947, which I have approved and adopted, due to existing circumstances a comprehensive plan of development of the water resources of the Colorado River Basin cannot be formulated at this time. Accordingly, although I cannot recommend authorization of any projects at this time, I am sending the accompanying inventory report forward in order that you and the Congress may be apprized of this comprehensive inventory of potential water resource developments in the Colorado River Basin, and of the present situation regarding water rights in the Colorado River Basin.

The accompanying letter of James E. Webb, Director of the Bureau of the Budget, July 23, 1947, states in part:⁴²

* * * Acting under authority of the President's directive of July 2, 1946, I am able to advise you that there would be no objection to submission of the proposed interim report to the Congress, but that the authorization of any of the projects inventoried in your report should not be considered to be in accord with the program of the President until a determination is made of the rights of the individual States to utilize the waters of the Colorado River system.

³⁹ Act of December 22, 1944 (58 Stat. 887).

⁴⁰ "The Colorado River," H. Doc. 419 (80th Cong., 1st sess.).

⁴¹ Id., p. 2.

⁴² Id., p. 1.

Chapter XIII

LITIGATION

Four cases involving the Colorado River have been brought in the United States Supreme Court as original actions. The issues involved, and their disposition, are summarized below.

All of these cases were decided on the allegations of the bill of complaint, no answer being filed and no testimony taken.

A. Arizona v. California (283 U. S. 423, 1931): the "Injunction Case" (Appendix 1301)

Arizona filed an original bill of complaint on October 13, 1930, against Ray Lyman Wilbur and six States of the basin.

The Court stated the issues as follows (283 U. S. 423, 449):

On October 13, 1930, Arizona filed this original bill of complaint against Ray Lyman Wilbur, Secretary of the Interior, and the states of California, Nevada, Utah, New Mexico, Colorado, and Wyoming. It charges that Wilbur is proceeding in violation of the laws of Arizona to invade its quasi-sovereign rights by building at Black Canyon on the Colorado River a dam, half of which is to be in Arizona, and a reservoir to store all the water of the river flowing above it in Arizona, for the purpose of diverting part of these waters from Arizona for consumptive use elsewhere, and of preventing the beneficial consumptive use in Arizona of the unappropriated water of the river now flowing in that state; that these things are being done under color of authority of the Boulder Canyon Project Act; that this act purports to authorize the construction of the dam and reservoir, the diversion of the water from Arizona, and its perpetual use elsewhere; that the act directs and requires Wilbur to permit no use or future appropriation of the unappropriated water of the main stream of the Colorado river, now flowing in Arizona and to be stored by the said dam and reservoir, except subject to the conditions and reservations contained in the Colorado River Compact; and that the act thus attempts to enforce as against Arizona, and to its irreparable injury, the compact which it has refused to ratify. The bill prays that the compact and the act "and each and every part thereof, be decreed to be unconstitutional, void, and of no effect; that the defendants and each of them be permanently enjoined and restrained from enforcing or carrying out said compact or said act, or any of the provisions thereof, and from carrying out the three pretended contracts hereinabove referred to, or any of them, or any of their provisions, (meaning certain contracts executed by Wilbur on behalf of the United States for the use of the stored water and developed power after the project shall have been completed) and from doing any other act or thing pursuant to, or under color of, said Boulder Canyon Project Act."

The contracts referred to were the water contract of the Metropolitan Water District of April 24, 1930 (appendix 1007), the energy

contract of the district, dated April 26, 1930 (appendix 3, first edition), and the lease of the City of Los Angeles and the Southern California Edison Co. (appendix 2, first edition).

Arizona's bill of complaint alleged the effect of the Colorado River Compact upon her as follows (art. XIV, p. 16):

Said Colorado River Compact is grossly inequitable, unjust, and unfair to the state of Arizona, for the reasons and in the respects following, to wit:

(1) Said compact attempts to apportion to said Upper Basin more, and to said Lower Basin less, than an equitable share of the water of said Colorado River System. Said compact attempts to apportion to each of said basins the same quantity of water, to wit, 7,500,000 acre-feet annually, but said Lower Basin needs and can put to beneficial use more than twice the quantity of water which is needed or can be put to beneficial use in said Upper Basin. That part of said Lower Basin which is in Arizona needs and can put to beneficial use more than the total quantity of water which said compact attempts to apportion to said entire Lower Basin. Said Lower Basin includes practically all of Arizona. None of the water of said Colorado River System can be put to beneficial use in that part of Arizona which is in said Upper Basin. The 7,500,000 acre-feet of water which said compact attempts to apportion to each of said basins includes all water necessary to supply existing rights, which means all water heretofore appropriated and now being used. In said Lower Basin such appropriations amount to 6,500,000 acre-feet of water annually, whereas in said Upper Basin they amount to only 2,500,000 acre-feet annually. Thus said compact attempts to apportion to said Lower Basin only 1,000,000 acre-feet of unappropriated water, whereas it attempts to apportion to said Upper Basin 5,000,000 acre-feet of unappropriated water annually. Under said compact, said 5,000,000 acre-feet of unappropriated water could not, nor could any part of it, be appropriated in said Lower Basin. Thus said compact attempts to deprive the State of Arizona, its citizens, inhabitants, and property owners, of their right to appropriate said 5,000,000 acre-feet of unappropriated water, all of which is now subject to appropriation in Arizona.

(2) Said compact does not apportion or attempt to apportion all of the water of said Colorado River System, but attempts to apportion only 15,000,000 acre-feet thereof, and leaves unapportioned the remaining water of said system, aggregating 3,000,000 acre-feet annually. Said unapportioned water is a part of the unappropriated water of said Colorado River System. Said compact attempts to withdraw said unapportioned water from appropriation and to prohibit the appropriation thereof. This said compact attempts to do by providing that Mexican rights shall be supplied from said unapportioned water, and that said unapportioned water shall be subject to apportionment after October 1, 1963. Thus said compact attempts to deprive the State of Arizona, its citizens, inhabitants, and property owners, of their right to appropriate said 3,000,000 acre-feet of unappropriated water, all of which is now subject to appropriation in Arizona.

(3) Said compact defines the term "Colorado River System" so as to include therein the Gila River and its tributaries, of which the total flow, aggregating 3,000,000 acre-feet of water annually, was appropriated and put to beneficial use prior to June 25, 1929. The State of New Mexico has but a slight interest, and the States of California, Nevada, Utah, Colorado, and Wyoming have no interest whatever in said water. Since said compact provides that the water apportioned thereby shall include all water necessary to supply existing rights, the effect of including the Gila River and its tributaries as a part of said system would be to reduce by 3,000,000 acre-feet annually the quantity of water now subject to appropriation in Arizona.

The Court's opinion (283 U. S. 423, 464) (appendix 1301) denied the relief sought, saying:

As we hold that the grant of authority to construct the dam and reservoir is a valid exercise of congressional power, that the Boulder Canyon Project Act does not purport to abridge the right of Arizona to make, or permit, additional appropriations of water flowing within the State or on its boundaries, and that there is now no threat by Wilbur, or any of the defendant states, to do any act which will interfere with the enjoyment of any present or future appropriation, we have no occasion to consider other questions which have been argued. The bill is dismissed without prejudice to an application for relief in case the stored water is used in such a way as to interfere with the enjoyment by Arizona, or those claiming under it, of any rights already perfected or with the right of Arizona to make additional legal appropriations and to enjoy the same.

The full text of the opinion appears herein as appendix 1301.

***B. Arizona v. California (292 U. S. 341, 1934): the
"Perpetuation of Testimony Case" (Appendix 1302)***

On February 14, 1934, Arizona moved for leave to file an original bill, naming the Secretary of the Interior and the six States of the basin as defendants, to perpetuate the testimony of the negotiators of the Colorado River Compact, for use in an action which Arizona said she would bring at some future time. The proposed testimony was said to relate to the meaning of article III (b) of the Colorado River compact. The language of the bill of complaint, in part, was (p. 13):

It was agreed between all of the representatives of the various States and the representative of the United States, negotiating said compact, that said one million acre-feet apportioned by subdivision (b) of Article III of said compact was intended for and should go to the State of Arizona to compensate for the waters of the Gila River and its tributaries being included within the definition of the Colorado River system and the allocations of said compact, and that said one million acre-feet was to be used exclusively by and for the State of Arizona, that being the approximate amount of water then in use within the State of Arizona from the Gila River and its tributaries, and it was agreed that in view of the fact that no appropriation or allocation of water had otherwise been made by said compact directly to any State, the one million acre-feet for the State of Arizona should be included in said compact by an allocation for the Lower Basin. And it was further agreed that a supplemental compact between the States, California, Nevada and Arizona should be adopted and that such supplemental compact should so provide.

The Court said, at page 349 of its opinion, that Arizona—

* * * claims that this paragraph, which declares: "In addition to the apportionment in Paragraph (a), the lower basin is hereby given the right to increase its beneficial consumptive use of such waters by 1,000,000 acre-feet per annum."

means:

"that the waters apportioned by Article III (b) of said compact are for the sole and exclusive use and benefit of the State of Arizona."

The Court's opinion (292 U. S. 341) (appendix 1302), held that the Court had jurisdiction to order the perpetuation of testimony, but the Court declined leave to file the bill on the ground that the testimony, if taken, would be inadmissible on various grounds.

C. *United States v. Arizona* (295 U. S. 174, 1935): the "Parker Dam Case" (Appendix 1303)

In January 1935 the United States brought an original action in the United States Supreme Court against the State of Arizona to enjoin interference by that State with the construction of Parker Dam by the United States under its cooperative agreement with the Metropolitan Water District, dated February 10, 1933 (appendix 1201). Arizona had threatened the use of military force, and had physically prevented continuance of construction. The Court held (appendix 1303) that the complaint failed to show that the construction of the dam was authorized by statute, and that there was no ground for the granting of the injunction. The complaint was dismissed.

Subsequently, in the act of August 30, 1935 (49 Stat. 1039) (appendix 1202), Congress reauthorized the construction of Parker Dam, work was resumed, and the structure was completed and placed in operation. (See text, ch. XII.)

D. *Arizona v. California et al.* (298 U. S. 558, 1936): the "Equitable Apportionment Case" (Appendix 1304)

In November 1935 Arizona moved for leave to file a bill of complaint in an original action in the United States Supreme Court, naming the other six States of the basin as defendants.

The Court stated the issues as follows (298 U. S. 558, 559):

The relief sought is: (1) That the quantum of Arizona's equitable share of the water flowing in the Colorado River, subject to diversion and use, be fixed by this Court, and that the petitioner's title thereto be quieted against adverse claims of the defendant states. (2) That the State of California be barred from having or claiming any right to divert and use more than an equitable share of the water flowing in the river, to be determined by the Court, and not to exceed the limitation imposed upon California's use of such water by the Boulder Canyon Project Act [December 21, 1928], 45 Stat. L. 1057, ch. 42, U. S. C. A. title 43, sec. 617 and the Act of the California Legislature of March 4, 1929, ch. 16, Calif. Stat. 1929, p. 38. (3) That it be decreed that the diversion and use by any of the defendant states of any part of the equitable share of the water decreed to Arizona pending its diversion and use by her shall not constitute a prior appropriation or confer upon the appropriating state any right in the water superior to that of Arizona. (4) That any right of the Republic of Mexico to an equitable share in any increased flow of water in the Colorado River, made available by works being constructed by or for California, shall be supplied from California's equitable share of the water, and that neither petitioner nor the defendant states other than California shall be required to contribute to it from their equitable shares as adjudicated by the Court.

With respect to the California water contracts, Arizona's bill of complaint alleged (pp. 25-27):

The net virgin flow of the Colorado River and its tributaries is the sum of the undepleted flows of said river at Imperial Dam and of the Gila at its confluence with the main stream at Yuma. By deducting from the net flow so obtained the waters apportioned by the Colorado River Compact we obtain the "excess or surplus waters unapportioned by said compact" within the meaning of Section 4 (a) of the Boulder Canyon Project Act and the Act of the Legislature of California, approved March 4, 1929. The unapportioned water is computed in the following manner:

Virgin flow Colorado River at Imperial Dam.....	16, 840, 000
Virgin flow Gila at confluence with the Colorado River....	1, 331, 000
	18, 171, 000
Net virgin flow Colorado River.....	18, 171, 000
Less water apportioned by Compact.....	16, 000, 000
	2, 171, 000
Surplus waters unapportioned.....	2, 171, 000

Therefore the maximum quantity of Colorado River water which California may legally divert and consumptively use is:

Of water apportioned by par. (a), Art. III, Compact.....	4, 400, 000
One-half waters unapportioned.....	1, 085, 500
	5, 485, 500
California's maximum legal rights.....	5, 485, 500

The foregoing quantities are in acre-feet per year and are based upon average annual discharges of the Colorado and Gila for the last thirty-seven years for which records are available.

* * * * *

The Secretary of the Interior, pursuant to the provisions of Section 5 of the Boulder Canyon Project Act, during the years 1931 and 1933 entered into contracts with the California corporations named below for the storage in Boulder Reservoir and the delivery of Colorado River water for domestic and irrigation purposes in California, in acre-feet per year, as follows:

Metropolitan Water District.....	1, 100, 000
Imperial Valley and others.....	3, 850, 000
City of San Diego.....	112, 000
Palo Verde.....	300, 000
	5, 362, 000
Total.....	5, 362, 000

Plaintiff alleges that the total of the waters for the storage and delivery of which it was so contracted is substantially the entire amount which may legally be diverted from said river and consumptively used in the State of California under the terms of said statutory contract between the State of California and the United States, and is far in excess of California's equitable share of said waters.

The Court held that the United States was a necessary party, and denied leave to file the proposed bill, the opinion concluding (p. 572):

The petition to file the proposed bill of complaint is denied. We leave undecided the question whether an equitable division of the unappropriated water of the river can be decreed in a suit in which the United States and the interested States are parties. Arizona will be free to assert such rights as she may have acquired, whether under the Boulder Canyon Project Act and California's undertaking to restrict her own use of the water or otherwise, and to challenge, in any appro-

private judicial proceeding, any act of the Secretary of the Interior or others, either states or individuals, injurious to it and in excess of their lawful authority.

E. Remaining Issues

In reporting on House Joint Resolution 225, Eightieth Congress, a joint resolution to authorize commencement of an action by the United States to determine interstate water rights in the Colorado River, Acting Secretary of the Interior Oscar Chapman on May 14, 1948, summarized the major issues presented by section 4 (a) of the Boulder Canyon Project Act as follows: ¹

(1) Are the 1,000,000 acre-feet of water for which provision is made in article III (b) of the Colorado River compact "surplus" or "apportioned" within the meaning of section 4 (a) of the Boulder Canyon Project Act? That is, is or is not California entitled to share in the use of III (b) water?

(2) Is the flow of the Gila River, for purposes of determining the water supply of the Colorado River Basin, to be measured at the mouth of the stream or elsewhere? And, as another aspect of the same problem: Is beneficial consumptive use by Arizona of the waters of the Gila to be measured in terms of diversions from the Gila River less returns to that river or in terms of the depletion of the virgin flow of that river at its mouth?

(3) Is the water required for delivery to Mexico under the treaty with that nation to be deducted from "surplus" water prior to determination of the amount available for use in California under section 4 (a) of the Boulder Canyon Project Act, or is California entitled to use a full one-half of the "surplus" diminished only by so much of the Mexican requirements as cannot be supplied from the other half?

(4) Is the burden of evaporation losses at such reservoirs as Lake Mead to be borne by California and Arizona in proportion to the waters stored there for each of them, or is the burden of these losses to be fixed in some other fashion?

Secretary Chapman stated the effect of these issues as follows: ²

I have not attempted to examine the merits of the contentions made by the spokesmen for Arizona and California on these questions. Assuming, however, that there is some merit to both sides on all four of the major questions, it is obvious that there are many answers, in terms of the number of acre-feet of water which California may use under section 4 (a) of the Boulder Canyon Project Act that might conceivably be given. Using the long-run average flows shown in this Department's report on the Colorado River basin as a basis for computations, the answers might range from as much as 6,250,000 acre-feet per year to approximately 4,000,000 acre-feet. Likewise, there is a great range in the amount of water from the Colorado River system which might be found available for use in Arizona. The maximum might be somewhat over 3,500,000 acre-feet, the minimum nearly as little as 2,250,000 acre-feet.

Extensive hearings were held on House Joint Resolution 225 ³ and an identical Senate measure, Senate Joint Resolution 145, ⁴ in the Eightieth Congress, but no action was taken.

¹ Hearings of the House Judiciary Committee on H. J. Res. 225, 80th Cong., 2d sess., p. 24.

² *Id.*, p. 26.

³ Cited under note 1, *supra*.

⁴ Hearings of the Senate Committee on Interior and Insular Affairs on S. J. Res. 145, 80th Cong., 2d sess.

Chapter XIV

THE MEXICAN WATER TREATY

A. Background

The prospect of an ultimate treaty with Mexico respecting the waters of the Colorado River appeared in the discussions which preceded the Colorado River Compact negotiations,¹ occupied a prominent part in the negotiation of the compact,² was mentioned in the compact itself,³ drew further attention during the hearings on the legislation which eventuated in the Boulder Canyon Project Act,⁴ was the subject of pointed comment during the debate in the Congress, particularly the Senate,⁵ and was mentioned again in the Boulder Canyon Project Act itself.⁶ Negotiation of such a treaty was authorized by the Congress in 1927⁷ and negotiations were attempted, but without result, in 1930.⁸ Secretary Wilbur's offer of a water contract to Arizona in 1932 was activated in part by the desire to make Arizona's position secure in advance of confirmation of such a treaty.⁹

B. Negotiations of 1930

Pursuant to the authorization made by the act of March 3, 1927,¹⁰ Dr. Elwood Mead, Commissioner of Reclamation, Chairman, Messrs. Lansing H. Beach, and W. T. Anderson, Commissioners, were appointed as the American section of the International Water Commis-

¹ Cf. S. Doc. 142 (67th Cong.), tables, p. 32 et seq.

² E. g., transcript, seventeenth meeting, Colorado River Commission, p. 24.

³ Art. III (c).

⁴ See resolutions adopted by the governors of the basin States in hearings of the House Committee on Irrigation and Reclamation on H. R. 5773 (70th Cong., 1st sess.), p. 202.

⁵ Cf. remarks of Senator Key Pittman, Congressional Record, December 10, 1928, p. 338.

⁶ Sec. 20 of the Boulder Canyon Project Act (act of December 21, 1928, 45 Stat. 1057) reads:

Nothing in this Act shall be construed as a denial or recognition of any rights, if any, in Mexico to the use of the waters of the Colorado River system.

⁷ Act of March 3, 1927 (44 Stat. 1043).

⁸ H. Doc. 359 (71st Cong., 2d sess.), "Report of the American Section of the International Water Commission, United States and Mexico" (1930).

⁹ Cf. art. 7 of the contract offered by Secretary Wilbur to Arizona, February 7, 1933 (appendix 1015 herein).

¹⁰ Act of March 3, 1927 (44 Stat. 1043).

sion to make a study regarding the equitable use of the waters of the lower Rio Grande and lower Colorado and Tijuana Rivers. After negotiations with the Mexican section, the American section rendered a report on March 22, 1930, which was transmitted by the Secretary of State to the President April 18, 1930, and transmitted by President Herbert Hoover to Congress April 21, 1930.¹¹ The American section reported that the Mexican section had presented a claim for 4,500,000 acre-feet of water from the Colorado River, whereas the American section—

proposed, as an equitable division of the waters of the Colorado, to deliver to Mexico the greatest amount which had been delivered to irrigators in that country from the stream in any one year. That year was 1928, during which time Mexican irrigators received 750,000 acre-feet of water. The certainty of delivery of this water by the United States was conditioned on the construction by the United States of Boulder Dam within its territory, until which time the existing unregulated flow of the River must continue. The American Section further invited attention to the dangerous condition existing along the Colorado River within Mexican territory, whereby cultivated lands in both the United States and in Mexico were threatened by floods in the River and suggested that means be taken to protect these lands from overflow and destruction.¹²

No agreement was reached.

C. Negotiations of 1941-43: Discussions Between the State Department and the States

The negotiations which led to the consummation of a treaty were initiated in 1941¹³ and continued during 1942 and 1943. The State Department called the matter to the attention of the respective States, i. e., Texas and the seven States of the Colorado River Basin. It consulted with the representatives of the Colorado River States, organized in a Committee of Sixteen, comprising two representatives of each of the seven States of the Colorado River Basin, plus two representatives of the Hoover Dam power contractors.¹⁴

¹¹ H. Doc. 359 (71st Cong., 2d sess.), "Report of the American Section of the International Water Commission, United States and Mexico" (1930).

¹² *Id.*, p. 5.

¹³ The historical background of the treaty is given in the majority and minority reports of the Senate Committee on Foreign Relations (S. Ex. Rept. No. 2, pts. 1, 2, 79th Cong., 1st sess.). Cf. "Light on the Mexican Water Treaty from the Ratification Proceedings in Mexico," S. Doc. 249 (79th Cong., 2d sess.).

¹⁴ Members of the Committee of Fourteen present at the June 17-20, 1942, meeting at El Paso were: Arizona, A. M. Davis and Hugo B. Farmer; California, Lewis A. Hauser and Evan T. Hewes; Colorado, Clifford H. Stone and John B. O'Rourke; Nevada, Charles F. DeArmond and Alfred Merritt Smith; New Mexico, Thomas M. McClure and Fred E. Wilson; Utah, William R. Wallace and Grover A. Giles; Wyoming, L. C. Bishop and Ernest B. Hitchcock. When functioning as a Committee of Sixteen, the following were added, representing the power contractors: E. F. Scattergood, City of Los Angeles, and James Gaylord, Metropolitan Water District of Southern California

Wide differences of opinion ultimately developed in this committee. It did, however, submit one unanimous recommendation to the State Department,¹⁵ as follows:

RESOLUTION ADOPTED BY THE COMMITTEE OF FOURTEEN ON JUNE 20, 1942, AT EL PASO, TEX., RESPECTING NEGOTIATIONS WITH THE REPUBLIC OF MEXICO CONCERNING THE COLORADO RIVER

The Committee of Fourteen, representing the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, in meeting assembled in the City of El Paso, Texas, on June 17, 18, 19 and 20, 1942, after having considered the reports of the subcommittees, legal and engineering, and after having considered the letter from Honorable Cordell Hull, Secretary of State, presented by Honorable Herbert Bursley on June 17, 1942; and

Whereas said letter suggested that this Committee, representing the seven Colorado River Basin States, submit to the State Department a plan for the allocation of the waters of the Colorado River between the United States and Mexico;

Whereas this Committee has given full and careful consideration of the matters presented to it and has concluded that it approves the continuance of conversations with the Republic of Mexico upon the consideration hereinafter recited;

Resolved, It is the sense of this Committee, representing all seven States of the United States in the Colorado River Basin, acting unanimously—

A. We submit herewith the following plan which we believe to be equitable, fair, and just as a basis for the apportionment of the waters of the Colorado River between the two nations:

1. Mexico shall not demand, nor shall the United States be required, to make available any water which Mexico cannot reasonably apply to beneficial use for irrigation and domestic purposes.

2. The United States will make available in the river at the upper boundary (California-Mexico) 800,000 acre-feet of water of the Colorado River system each calendar year that the releases from Lake Mead, as estimated by the Secretary of the Interior, total 10,000,000 acre-feet.

3. For annual estimated releases from Lake Mead above or below 10,000,000 acre-feet, the United States will make available at the upper boundary a total which will vary from 800,000 acre-feet in an amount which is 15 percent of the difference between the estimated releases and 10,000,000 acre-feet, such amount to be deducted from the 800,000 acre-feet when the estimated releases are less than 10,000,000 acre-feet, and added when the estimated releases are greater than 10,000,000 acre-feet.

4. Any amount of water delivered to Mexico at any point or points other than in the river at the upper boundary shall be equated to and charged against the amount herein specified to be made available at the upper boundary, considering any losses that may be occasioned by delivery at such other points.

5. The water to be made available to Mexico shall be in such amounts and at such times as may be requested by Mexico, provided that flows ordered by Mexico in excess of 4,000 second feet shall be subject to the decision of the Secretary of the Interior, or whoever may be charged with the control of power production at Boulder Dam and other dams below that point on the Colorado River, as to the availability of such excess flow without adversely affecting the use of water for power production in accordance with contracts for such power, made under the Boulder Canyon Project Adjustment Act.

¹⁵ Transcript of proceedings of the Committee of Fourteen, June 17-20, 1942, pp. 77-79.

6. Mexico may use any water available in the river between the upper and lower boundaries, but with no obligation on the part of the United States to make available any of such water.

7. Mexico must waive all rights and claims to the use of water of the Colorado River system not provided for herein.

B. We recommend:

1. That the United States cooperate with Mexico in the making of studies to determine the amount and rate of flow of water from surface and subsurface sources which may be available below the upper boundary for use in Mexico.

2. That the United States cooperate with Mexico in studies and in construction of improvements to the river channel below the upper boundary.

3. That the United States provide flood control on the Lower Gila River for the protection of lands in the United States and Mexico.

C. We ask:

1. That in negotiating the treaty the Department of State recognize that within the United States the Colorado River Compact and the Boulder Canyon Project Act as amended by the Boulder Canyon Adjustment Act are the law governing the Colorado River and that it recognize the allocations and contracts for water and power made thereunder.

2. That the Department use in negotiating the treaty such services and advice of qualified experts upon the subject as the interested States of the Basin may offer.

3. That the interested States be advised of the terms of any proposed treaty and be permitted to comment thereon, before any firm commitment has been made.

We express our gratitude for the opportunities for information and consultation which have been afforded us by the Department of State and for the separate handling of the negotiations upon the Colorado River and the Rio Grande, and will most respectfully appreciate the continuance of these policies.

The treaty as executed followed a different formula, as outlined below.

D. Execution of the Treaty of February 3, 1944 (Appendix 1405)

On February 3, 1944, the plenipotentiaries of the two nations signed a treaty relating to the Rio Grande and Colorado and Tijuana Rivers. The text appears in appendix 1405.

A summary of the treaty by Secretary of State Cordell Hull appears in chapter XIV (E), *infra*.

E. Transmittal to the Senate (Appendix 1403)

On February 15, 1944, President Roosevelt transmitted the treaty to the Senate, with the favorable recommendation of Secretary of State Cordell Hull, dated February 9, 1944. Secretary Hull's statement¹⁶ with reference to the Colorado, summarized the treaty as follows:

Part III, which is divided into six articles, prescribes the rules that are to govern the allocation and delivery to Mexico of a portion of the waters of the

¹⁶ S. Ex. A (78th Cong., 2d sess.).

Colorado River. By article 10 the United States guarantees to Mexico a minimum quantity of 1,500,000 acre-feet of water each year, this water to be delivered in accordance with schedules to be furnished in advance by the Mexican section of the Commission. Beyond this minimum quantity the United States will allocate to Mexico, whenever the United States section decides there is a surplus of water, an additional quantity up to a total, including the 1,500,000 acre-feet, of not more than 1,700,000 acre-feet per year. Mexico may use any other waters that arrive at her points of diversion but can acquire no right to any quantity beyond the 1,500,000 acre-feet. These quantities, which may be made up of any waters of the Colorado River from any and all sources, whether direct river flows, return flow, or seepage, will be delivered by the United States in the boundary portion of the Colorado River, except that until 1980 Mexico may receive 500,000 acre-feet annually, and after that year 375,000 acre-feet annually through the All-American Canal as part of the guaranteed quantity. By another provision the United States will undertake, if the Mexican diversion dam is located entirely in Mexico, to deliver up to 25,000 acre-feet, out of the total allocation, at the Sonora land boundary near San Luis.

In order to facilitate the delivery and diversion of Mexico's allocation, Mexico, as provided in article 12, is to build at its expense, within 5 years from the date the treaty enters into force, a main diversion structure in the Colorado River below the upper boundary line. If this dam is built in the limitrophe section of the river, its plans and construction must be approved by the Commission. Wherever it is built, there shall be constructed at the same time, at Mexico's expense, the works which, in the opinion of the Commission, may be necessary to protect lands in the United States against damage from floods and seepage which might result from the construction, operation, and maintenance of this dam. The United States, as provided in article 12, is to build a regulating dam, known as Davis Dam, at a point between Boulder Dam and Parker Dam, and is to use a portion of the capacity of this dam and reservoir to make possible the regulation, at the boundary, of water allotted to Mexico. Furthermore, the Commission is to make all necessary measurements of water flows, and the data obtained as to deliveries and flows are to be periodically compiled and exchanged between the two sections. Article 12 provides also that the United States, through its section of the Commission, is to acquire or construct and permanently own, operate, and maintain the works required for the delivery of Colorado River waters to Mexican diversion points on the land boundary. Article 13 provides that the Commission shall study, investigate, and prepare plans for flood control on the Lower Colorado. Article 14 provides that Mexico is to pay an equitable part of the construction, maintenance, and operating costs of Imperial Dam and the Imperial Dam-Pilot Knob section of the All-American Canal, and is to pay all of such costs of works used entirely by Mexico. Article 15, relating to the annual schedules of deliveries to Mexico of Colorado River waters, provides that Mexico, in advance of each calendar year, is to supply two schedules, one to deal with the water to be delivered in the Colorado River and the other to deal with the water to be delivered through the All-American Canal. These schedules are subject to certain limitations, especially in regard to rates of flow at different times of the year, in order to provide assurance that the United States, in the period of ultimate development, will obtain credit for practically all of the flows that will be expected in the river as the result of United States uses and operations.

Part IV, consisting solely of article 16, places upon the Commission the duty of making investigations and reports regarding the most feasible projects for the conservation and use of the waters of the Tijuana River system and of submitting a recommendation for the allocation of these waters between the two countries.

The nine articles of part V contain provisions of a general nature relating to certain uses of the river channels and of the surfaces of artificial international lakes, to the international works, and to the Commission. By article 20 the two Governments, through their respective sections of the Commission, agree to carry out the construction of works allotted to them. By article 23 the two Governments undertake to acquire all private property necessary for the construction maintenance, and operation of the works and to retain, through their respective sections, ownership and jurisdiction, each in its own territory, of all works, appurtenances, and other property required for the carrying out of the treaty provisions regarding the three rivers. However, the jurisdiction of each section of the Commission is definitely restricted to the territory of its own country.

Article 24 entrusts to the Commission certain powers and duties in addition to those specifically provided in the treaty. These powers and duties include the making of investigations and preparation of plans for works and the control thereof; the exercise of jurisdiction by the respective sections over all works; the discharge of the specific powers and duties entrusted to the Commission by this and other treaties; the prevention of any violation of the terms of the treaty; the settlement of all differences that may arise regarding the treaty; the preparation of reports and the making of recommendations to the respective Governments; and the construction, operation, and maintenance of all necessary gaging stations.

It is provided in article 25 that the Commission shall conduct its proceedings in accordance with the rules laid down by articles III and VII of the convention of March 1, 1889. In general, the Commission is to retain all duties, powers, and obligations assigned to it by previous treaties and agreements, so that the present treaty merely augments the Commission's powers, duties, and obligations.

* * * By article 27, during the 5 years before Davis Dam and the Mexican diversion dam are built, the United States will permit Mexico, at its own expense, to build, under proper safeguards, a temporary diversion structure in the Colorado River for the purpose of diverting water into the present Alamo Canal. Furthermore, the United States undertakes to cooperate with Mexico to the end that the Mexican irrigation requirements during this temporary period may be set for the lands under irrigation during 1943, provided that the water needed therefor is not currently required in the United States.

Part VII, consisting solely of article 28, contains the final provisions relating to ratification, entry into force, and termination. It is provided that the treaty shall enter into force on the day of the exchange of ratifications, and that it shall continue in force until terminated by another treaty concluded for that purpose between the two Governments.

Finally, it should be noted that the treaty provides that, in case of drought or serious accident to the hydraulic works in the United States, deliveries of Colorado River water to Mexico will be curtailed in the same proportion as uses in the United States are reduced, and that, if for similar reasons Mexico cannot provide the minimum 350,000 acre-feet from its measured tributaries of the Rio Grande, the deficiency is to be made up from these tributaries during the following 5-year cycle.

F. Reaction of the States and Water Users

The terms of the treaty were endorsed by the official representatives of the States of Arizona, Utah, Colorado, New Mexico, Wyoming, and Texas, and opposed by the official representatives of the States of California and Nevada. The reaction of the water users

in the States of the Colorado River Basin, as disclosed in the subsequent hearings, was mixed.

G. Protocol of November 14, 1944 (Appendixes 1404, 1405)

On November 14, 1944, the two Governments executed a protocol, to be regarded as an integral part of the treaty. This protocol provided that whenever specific functions were imposed on or restrictive jurisdiction vested in either section of the International Boundary and Water Commission, involving the construction or use of works or for other purposes, situated wholly within the territory of one country, which are used only partly for the performance of treaty provisions, this jurisdiction shall be exercised and such functions, including construction, operation, and maintenance of works, shall be performed by the Federal agencies of that country which may now or hereafter be authorized by domestic law to construct or operate and maintain such works, all in conformity with the treaty and in cooperation with the respective section of the Commission. Works constructed or used on or along the boundary, and those constructed or used exclusively for the discharge of treaty stipulations, shall be under the jurisdiction of the Commission or the respective section in accordance with the provisions of the treaty; but, in the construction of such works, the sections of the Commission may utilize the services of public or private organizations in accordance with the laws of their respective countries.

H. Interdepartmental Agreement of February 14, 1945 (Appendix 1407)

On June 18, 1945, the President approved an interdepartmental agreement between the Department of State and the Department of the Interior, signed by the two Secretaries.

This agreement undertook to specify the works to fall within the jurisdiction of the one department or the other under the terms of the protocol, and to provide for cooperation between the two departments, assignment of personnel, transfer of funds, exchange of information, etc.

I. Hearings

The Senate Foreign Relations Committee conducted public hearings¹⁷ for a period of 5 weeks, commencing January 22, 1945. The treaty was supported by witnesses representing the States of Arizona,

¹⁷ Hearings before the Committee on Foreign Relations, U. S. Senate (79th Cong., 1st sess.), on treaty with Mexico, relating to the utilization of the waters of certain rivers (1945), in five parts.

Colorado, New Mexico, Texas, Utah, and Wyoming, and opposed by witnesses representing the States of California and Nevada, certain of the water users in the other affected States, and a number of other organizations.¹⁸

J. Reports of Committee

On February 26, 1945, the majority of the Senate Committee on Foreign Relations reported the treaty favorably.¹⁹ A minority report was subsequently filed.²⁰

K. Issues

The issues between the proponents and opponents of the treaty are drawn in detail in the reports of the majority and minority of the Senate Committee on Foreign Relations. The major ones,²¹ and the treaty's relation to the Colorado River Compact, were stated as follows in a communication from Herbert Hoover to Senator Albert W. Hawkes of New Jersey, printed as a Senate document during the debates:²²

MY DEAR SENATOR: I have your letter asking my views about the pending treaty with Mexico allocating the waters of the Colorado River and its relation to the Colorado River compact. I have gone back over the records, I have studied the treaty, and I visited the locality again a year ago to bring myself up to date.

Certainly we should deal with Mexico as a friend and not at arm's length. But when we make a treaty about water, we are dealing with the lifeblood of the West and shaping its whole destiny.

As you know, I had the honor to be Chairman of the Colorado River Commission which settled the Colorado River compact in 1922 and other matters

¹⁸ Cf. statement of the Salt River Valley Water Users' Association, hearings of House Committee on Irrigation and Reclamation on H. R. 5434 (79th Cong., 2d sess., 1946), p. 763.

¹⁹ S. Ex. Rept. No. 2, pt. 1 (79th Cong., 1st sess., 1945).

²⁰ *Id.*, pt. 2.

²¹ With respect to the primary question of water supply, see "Water Supply Below Boulder Dam," S. Doc. 39 (79th Cong., 1st sess., 1945), in 2 parts, comprising data submitted April 11, and July 23, 1945, by Commissioner of Reclamation Harry W. Bashore in response to inquiries by Senator Pat McCarran.

²² S. Doc. 32 (79th Cong., 1st sess.), "Water Treaty with Mexico." Letter from Hon. Herbert Hoover, former President of the United States, to Hon. Albert W. Hawkes, Senator from the State of New Jersey, relative to the pending treaty with Mexico allocating the water of the Colorado River and its relation to the Colorado River Compact, March 17, 1945.

relating to the development of the river. And during the following years I had many duties involving these questions.

I. THE WATER SUPPLY AND THE COLORADO RIVER COMPACT

The allocations of water made by the Colorado River compact in 1922 were necessarily based on so short a period of stream-flow records that we were compelled to keep the allocations to the different areas within safe limits. Many delegates were convinced that the demands for water, particularly in the lower basin, could not be satisfied within the allocations as made. But it was thought better to proceed for a period of years until a more accurate determination could be made, both of the water supply and the requirements of the several States, before attempting a final allocation of the complete supply.

Further experience has shown great changes in the whole problem of supply:

1. *Reduction in water supply estimates.*—The longer the period of stream-flow records, the less becomes the safe yield of the river in extended low flow periods.

As a result of the records of run-off for the period of 1931 to 1940, inclusive, it has been necessary to reduce the figure of safe water supply by at least 1,000,000 acre-feet.

2. *Excess of demand over supply in the upper basin.*—In 1922 there was general agreement that the allocation of 7,500,000 acre-feet per annum to the upper basin would be more than ample to meet its ultimate requirements.

At that time, diversions of water outside the basin were estimated at not over 750,000 acre-feet. Today there are under construction and investigation trans-mountain diversion projects considered feasible, which will divert over 2,000,000 acre-feet per annum from the upper basin, and others are being discussed requiring another 1,000,000 acre-feet. As a result, it is now realized that the allocation will fall far short of ultimate needs of the upper basin.

3. *The upper basin's guaranty to the lower basin.*—In 1922 the compact requirement, that the upper States never deplete the flow of the river to less than 75,000,000 acre-feet in any 10-year period, was not considered burdensome.

Studies now available show that to meet this obligation the upper States will have to provide at least 20,000,000 acre-feet of hold-over storage to be used during low flow periods, comparable to 1931-40, or, lacking storage, will have to limit their use to about 64 percent of their allocation, in order to make available the 75,000,000 acre-feet at Lees Ferry.

4. *Unanticipated uses in the lower basin.*—In 1922 no one conceived of an aqueduct taking 1,000,000 acre-feet per annum out of the basin to the coastal plain of southern California. This aqueduct has now been built and is in operation.

In 1922 the possibility of a project over several hundred miles long, involving continuous tunnels 80 miles or more in length for the carrying of main stream water to central Arizona for irrigation purposes, was thought fantastic. Today such a project is under detailed study.

5. *Conclusion as to the water supply.*—From the foregoing and other facts, there can be only one conclusion: That as time passes, the safe water supply of the Colorado River is found to grow less, while the requirements for, and value of, that water increase manifold. The Colorado River as a natural resource of the United States becomes of greater and greater importance and value each year; it should be guarded and preserved for the use and benefit of our people.

6. *The compact's references to a treaty.*—At the time the compact was negotiated, the possibility that a treaty might be made with Mexico some day was recognized,

and that under it Mexico might become entitled to the use of some water. In that event, the compact divides the burden between the upper and lower basins, but it cannot be said that the compact "foreshadows" such a treaty as that now proposed.

I am sure none of the Commissioners who negotiated the compact had any idea that our Government would offer to guarantee Mexico any such amount as the 1,500,000 acre-feet stated in the proposed treaty. At that time Mexico was using about 500,000 to 600,000 acre-feet per year. Her lands were subject to a serious flood menace every year, and the silt in the river water was clogging her irrigation canals and ditches and thus threatened her whole development. It was a serious question as to how Mexico could prevent disaster to the lands she was then cultivating, much less increase that use.

Now, by means of American works, we have controlled the floodwater and silt, which is of tremendous value to Mexico. No one would want to deny these benefits to Mexico. But had it been suggested in 1922 that the United States was to be penalized in the future by having to furnish free to Mexico a volume of water, made available by works constructed in the United States, to supply lands made possible of development only because of those works, I know it would have met with the opposition of the compact framers. Moreover, had the compact negotiators considered such a treaty possible as the present one, I am not sure that agreement on a compact could have been reached. Certainly, the compact that was concluded would have been different.

II. THE PRESENT TREATY

There are three serious objections to the treaty in its present form, all of which seem capable of remedy before the treaty is ratified but will cause endless trouble if not. These relate to (1) the allocation of water, (2) the construction of works, and (3) administrative provisions.

1. *As to the allocation of water.*—(a) *Quantity.*—The treaty guarantees at least 1,500,000 acre-feet per year to Mexico but contains no specific allocation or reservation of water to the United States. This guaranty takes precedence over older American users who are paying for the storage works which alone will make possible Mexico's increase of use above the quantity of approximately 750,000 acre-feet which she used before construction of the Boulder Canyon project. Each country ought to be allocated a pro rata of the flow of the river so that Mexico will share the hazards of the American water supply if she is to share the benefits of the American storage. The so-called "escape clause" entitling the United States to diminish deliveries only if her own consumptive use is curtailed by extraordinary drought is so uncertain in operation as to invite acrimonious dispute.

(b) *The impairment of existing American rights.*—The Boulder Canyon Project Act stipulated that the waters stored by that project should be used exclusively within the United States. Congress appropriated \$165,000,000 on that representation to the taxpayer. Communities in the lower basin entered into contracts with the United States reciting that pledge, and in reliance upon it have incurred over \$500,000,000 of debt to repay the Government's whole investment and to construct aqueducts, canals, transmission lines, etc., to use the water so stored and paid for. Figures used by the Reclamation Bureau show that in a decade like 1931-40, if 1,500,000 acre-feet were guaranteed to Mexico each year, some 15,000,000 acre-feet of Boulder Canyon storage would have to be drawn down for that purpose, exhausting substantially the whole active storage of the reservoir, after making deductions for flood control and dead storage. Our pledge ought

to be kept. If it is to be broken, Mexico ought to be admitted no further than to a basis of parity with, not precedence over, the American users who assumed the obligation to pay for these works on the promise that the benefit would be theirs.

(c) *Quality.*—The treaty's evasion as to quality of water to be furnished to Mexico should be clarified one way or the other: Either by adding a reservation requiring Mexico to take all water regardless of quality, and even though it is unusable, which is what the State Department says this treaty means, but which must be a profound shock to Mexico; or, in the alternative, providing for the delivery of waters through the All-American Canal only, assuring Mexico substantially the same quality as that delivered to American projects through the same canal, and disclaiming specifically the quality of any water delivered to Mexico in the bed of the stream through works which she may herself build.

2. *Diversion works.*—These are the key to the treaty. Until the upper basin is fully developed, several million acre-feet per year will flow to the sea, as has always been the case. The Boulder Canyon project power operations convert this into a smooth flow, instead of spring floods, but the greater part of the water discharged for power generation will nevertheless reach Mexico during the winter season when she does not want it for irrigation. Mexico lacks sites for diversion works; these are located on American soil. The treaty (i) obligates the United States to build Davis Dam to make the Boulder Canyon winter power discharges available for Mexican summer irrigation, (ii) requires Mexico to build a diversion dam, which may be partly on American soil, within 5 years, (iii) authorizes her to use American power for pumping, (iv) gives her part of the power proceeds from Pilot Knob power plant, built at American expense, to help Mexico pay for some of these investments, and (v) offers her the use of the All-American Canal. The combined effect is to make possible the use of several million acre-feet per year, not merely 1,500,000 acre-feet, of the waters conserved by the Boulder Canyon project. That is to say, the treaty alone makes possible the increased Mexican use of the temporary American surplus, the fear of which is the impelling reason for making any treaty at all.

The treaty obligation laid on Mexico to construct a diversion dam wholly or partly on American soil within 5 years should be exactly reversed, by a prohibition against construction of any such works. No dam should be built so long as the Mexican allocation can be delivered through the All-American Canal. Adequate capacity was built into these works for this very purpose, and 1,500,000 acre-feet can be delivered through the All-American Canal to Mexico for many years without damaging any American interest in that canal. When, as, and if the diversion dam becomes necessary to capture return flow from American projects and thereby supplement the deliveries through the All-American Canal, the dam should be built wholly on American soil and owned, operated, and controlled by the United States. Its outlet works, in conjunction with those of the All-American Canal, should be so limited as to be capable of delivering to Mexico no more than 1,500,000 acre-feet in all in any year, if that is to be the treaty allocation. The treaty's

present defect is that it places no limitation whatever on Mexican use. A large new civilization will be pyramided on this temporary use. The treaty's limitation on the legal right acquired by that use can be swept away by one device or another when the alternative is the abandonment of that civilization. We should not build works to aid Mexico to take more water than we are willing to allocate to her in perpetuity.

No diversion dam either on American or Mexican soil should be permitted until the floods of the Gila River are fully controlled. If Mexico elects to try to build a diversion dam on her own soil, she should stipulate against flooding or damaging American lands. A limitation should be placed upon the permissible return flow from Mexico which floods into the Salton Sea, lying below sea level.

3. *Administrative provisions.*—This treaty foreshadows the more important postwar treaties to come and is an ominous precedent. It delegates excessive power to a commission of two individuals, one American and one Mexican. Such delegation, in the case of American domestic statutes, has seriously weakened the power of Congress and has troubled every student of the American form of government. But in the field of our own laws, Congress at least has the power to reclaim the power it has extravagantly conferred upon the Executive. The significant innovation of this treaty is that the power delegated here, even as to domestic functions of the Commission or its officers, cannot be reclaimed without the consent of Mexico. The treaty endures until Mexico agrees to another one. If the Senate fails to retain, by reservation, the power of Congress over the Commissioners created by this treaty, and the large funds they will control, it will be setting a precedent for the all-important postwar settlements.

4. *Conclusions as to the treaty.*—A treaty with Mexico on the Colorado River is desirable, as a matter of principle, but is by no means indispensable. The present treaty contains many good features, particularly as to the Rio Grande, but its three cardinal defects as to the Colorado ought to be remedied by Senate reservations. Otherwise, the treaty will cause, not cure, endless discord with Mexico and contention among the seven States of the Colorado River Basin.

If Mexico declines to accept such reservations, it would be better to have no treaty at all than to perpetuate the interpretations which would be disclosed by such refusal.

Without a treaty, the bogey of arbitration need not frighten us. We should not operate the Boulder Canyon project in any event so as to deliver Mexico less water than she was using before we built that project, but we cannot be compelled by arbitration to so operate it as to increase the flow available to her in the summer nor to build or furnish the diversion works without which she cannot increase her use. It is only the treaty, and the works which it promises, which make that increase possible.

With a treaty, we are bound to arbitrate every dispute arising under it, including our use of our own works, and the text of this treaty is replete with uncertainties enough to fill the arbitration courts for many years.

In response to these and other criticisms, certain safeguards were added by way of reservations before the treaty was approved by the Senate, others have been undertaken in the administration of the treaty (see ch. XIV (P) below), and others are in course of negotiation.

L. Reservations: Advice and Consent of the Senate

On April 18, 1945, following extended debate, the Senate gave its advice and consent to the treaty with 11 reservations (appendix 1405), by which a number of the objections made to the treaty were disposed of, and others left unsettled. The resolution of ratification stated that the Senate advised and consented to the ratification of the treaty and protocol—

subject to the following understandings, and that these understandings will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will in effect form a part of the treaty—

There followed 11 reservations, lettered from (a) to (k). Those relating to the Colorado River provided as follows:

Commitment for works

(a) That no commitment for works to be built by the United States in whole or in part at its expense, or for expenditures by the United States, other than those specifically provided for in the treaty, shall be made by the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, or any other officer or employee of the United States, without prior approval of the Congress of the United States. It is understood that the works to be built by the United States, in whole or in part at its expense, and the expenditures by the United States, which are specifically provided for in the treaty, are as follows:

* * * * *

3. Stream-gaging stations which may be required under the provisions of section (j) of article 9 of the treaty and of subparagraph (d) of article 12 of the treaty.

4. The Davis Dam and Reservoir mentioned in subparagraph (b) of article 12 of the treaty.

* * * * *

6. The joint flood-control investigations, preparations of plans, and reports on the lower Colorado River between the Imperial Dam and the Gulf of California required by article 13 of the treaty.

Constitutional and statutory controls

(b) Insofar as they affect persons and property in the territorial limits of the United States, the powers and functions of the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, and any other officer or employee of the United States, shall be subject to the statutory and constitutional controls and processes. Nothing contained in the treaty or protocol shall be construed as impairing the power of the Congress of the United States to define the terms of office of members of the United States Section of the International Boundary and Water Commission or to provide for their appointment by the President by and with the advice and consent of the Senate or otherwise.

(c) That nothing contained in the treaty or protocol shall be construed as authorizing the Secretary of State of the United States, the Commissioner of the

United States Section of the International Boundary and Water Commission, or the United States Section of said Commission, directly or indirectly to alter or control the distribution of water to users within the territorial limits of any of the individual States.

(d) That "international dam or reservoir" means a dam or reservoir built across the common boundary between the two countries.

"Jurisdiction" defined

(g) That by the use of the words "The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary * * *" in the first sentence of the fifth paragraph of article 2, is meant: "The jurisdiction of the Commission shall extend and be limited to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary * * *."

"Agreements" defined

(h) The word "agreements" whenever used in subparagraphs (a), (c), and (d) of article 24 of the treaty shall refer only to agreements entered into pursuant to and subject to the provisions and limitations of treaties in force between the United States of America and the United Mexican States.

"Disputes" defined

(i) The word "disputes" in the second paragraph of article 2 shall have reference only to disputes between the Governments of the United States of America and the United Mexican States.

Quantities allotted to Mexico defined

(j) First, that the one million seven hundred thousand acre-feet specified in subparagraph (b) of article 10 includes and is not in addition to the one million five hundred thousand acre-feet, the delivery of which to Mexico is guaranteed in subparagraph (a) of article 10; second, that the one million five hundred thousand acre-feet specified in three places in said subparagraph (b) is identical with the one million five hundred thousand acre-feet specified in said subparagraph (a); third, that any use by Mexico under said subparagraph (b) of quantities of water arriving at the Mexican points of diversion in excess of said one million five hundred thousand acre-feet shall not give rise to any future claim of right by Mexico in excess of said guaranteed quantity of one million five hundred thousand acre-feet of water.

Damage from operation of Mexican diversion

(k) The United States recognizes a duty to require that the protective structures to be constructed under article 12, paragraph (a), of this treaty, are so constructed, operated, and maintained as to adequately prevent damage to property and lands within the United States from the construction and operation of the diversion structure referred to in said paragraph.

With respect to the last cited reservation, see the protective provisions in the approval given by the State Department (appendix 1409) to minute 189 of the International Boundary and Water Commission (appendix 1408), fixing the location and design of the Mexican diversion dam.

M. Ratification Proceedings in Mexico

On April 20, 1945, the Mexican Government for the first time released the text of the treaty, protocol, and American reservation to the Mexican public. Hearings were held jointly before the two committees on foreign relations of the Mexican Senate, commencing July 31, 1945, and were concluded September 13, 1945.²³

Reservations offered in the Mexican Senate were rejected. However, the Mexican resolution of ratification contained a disclaimer which is referred to in more detail below, with reference to the exchange of instruments of ratification.

On September 27, 1945, the two committees submitted a formal report to the Mexican Senate (unpublished).

The President of Mexico signed the instrument of ratification October 16, 1945, and exchange of ratifications was ordered.

N. Exchange of Instruments of Ratification

On November 8, 1945, the instruments of ratification of the treaty and protocol were exchanged, and a protocol of exchange of instruments was signed (appendix 1405) and announced (appendix 1406). This protocol of exchange of instruments recites the following stipulation in the Mexican resolution of ratification:

* * * the Mexican Senate refrains from considering, because it is not competent to pass judgment upon them, the provisions which relate exclusively to the internal application of the treaty within the United States of America and by its own authorities, and which are included in the understanding set forth under the letter (a) in its first part to the period preceding the words, "it is understood, and under the letters (b) and (c)."²⁴

O. Proclamation

On November 27, 1945, President Harry S. Truman issued a proclamation (appendix 1405) reciting the full text of the protocol of exchange of instruments of ratification, and proclaiming the treaty in force as from November 8, 1945.

²³ The Mexican references, so far as they were available, were summarized in "Light on the Mexican Water Treaty From the Ratification Proceedings in Mexico" (S. Doc. 249, 79th Cong., 2d sess.). The Mexican negotiators reported interpretations of the treaty, and assumptions on which it was based, differing materially from those reported by the American negotiators.

²⁴ See ch. XIV (L), supra.

P. Administration

In the administration of the treaty, the International Boundary and Water Commission has effected a number of decisions and actions.

(1) *Minute 189: Morelos Dam.*—On May 12, 1948, the Commission, by minute 189, approved the design and location of the proposed Mexican diversion dam (appendix 1408), to be located about 1 mile below the upper boundary, and on June 10, 1948, the State Department approved minute 189, with “understandings” or reservations (appendix 1409). The dam is described in chapter XII (K). The Commission’s minute, and the State Department’s approval, while authorizing a structure with a diversion capacity of 8,000 cubic feet per second, contain safeguards against claims by Mexico in excess of 1,500,000 acre-feet annually, make provision for works to be built above the dam for the protection of lands in Yuma Valley and elsewhere that might be affected by the construction of the dam, require limitations on the discharge of waste water into Salton Sea, and contemplate early completion of plans for flood control works below the dam.

(2) *Adjustments with respect to the All-American Canal.*—On December 2, 1947, the Imperial Irrigation District submitted to the State Department certain proposals (appendix 1410) for the adjustments with respect to the All-American Canal required by the treaty, supplemented January 9, 1948 (appendix 1411) with detailed plans relating to Pilot Knob, to which the Department made reply August 4, 1948 (appendix 1412). At this writing, the agreement and regulations contemplated by this exchange are under negotiation.

CONCLUSION

This brings to a conclusion our summary of the documents involving Hoover Dam, their background and operation to date. The texts of these statutes, treaties, interstate compacts, contracts, orders, and other material, appear in the appendixes which follow.

No volume on this subject is ever finished. As was said by the Secretary of the Interior at the dedication of Hoover Dam, September 17, 1930:

"For industry, agriculture, trade, and commerce our river systems must be mastered for the future safety of our increasing population.

"We are but started as a nation.

"Conservation of our national resources does not mean hoarding them but it does mean that they shall be devoted to their highest uses.

"Conservation means wise use.

"About this project are united men and women of various States and of widely different political and social viewpoints. The fundamental needs which this will meet have submerged partisanship and prejudice.

"The people of a nation have joined with those of a region to make this Colorado River project a success.

"Our 50-year program is launched.

"If all of us work heartily together we can make this day stand out as a memorable one in the peaceful history of the American people."

Appendixes

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- PART II. The Colorado River Compact and Related Data.
- PART III. Documents Intervening Between Execution of the Colorado River Compact and the Enactment of the Boulder Canyon Project Act.
- PART IV. The Boulder Canyon Project Act.
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- PART VI. The Hoover Dam Power Contracts of 1930.
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- PART VIII. The Boulder Canyon Project Adjustment Act and Supplementary Legislation.
- PART IX. The Hoover Dam Power Contracts Made Under the Boulder Canyon Project Adjustment Act.
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Part I

HISTORICAL BACKGROUND

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Appendix 101

HISTORICAL BACKGROUND:

**EXTRACTS FROM REPORT OF ALL-AMERICAN
CANAL BOARD, JULY 22, 1919**

RECOMMENDATIONS OF THE ALL-AMERICAN CANAL
BOARD (P. 63)

The board recommends:

1. That the all-American canal, or an equivalent high-line canal, from the Laguna Dam into the Imperial Valley be constructed under one of the above-noted methods or under some other similar procedure for financing the enterprise, and that Congress pass such laws as may be necessary to put into effect any plan that may be agreed upon between the Secretary of the Interior and the Imperial Irrigation District.

2. That the connection of the Imperial Canal with the Laguna Dam be made at once.

3. That, so far as practicable, the water power of any canal that is constructed be utilized and the apportionment of the cost of installing power plants and of providing the necessary transmission lines should be made on the assumption that the tentative Government plans for the Yuma project would some day be carried out. The Yuma project on this assumption would maintain an interest and would be charged with the proportionate cost of canal capacity for 4,000 second-feet of water to near Araz, and it would be charged for power plant installation in the ratio that 8,500 water horsepower bears to the total water horsepower for which the power installation is to be made.

4. That the development of power with water from an all-American or high-line canal, regardless of the location of power stations, should be charged with such portion of the cost of canal construction down to Araz, and no farther, as is determined by the ratio that one-half of the capacity required for the water used for power bears to the total canal capacity.

5. In case that no other work be undertaken for the joint benefit of the Yuma project and Imperial Irrigation District, except the alterations at the Laguna Dam, the enlargement of the Yuma Canal and the extension of this canal to a connection with the head of the present Imperial Canal, then funds for this work should be provided either jointly by the United States for the Yuma project and by the

Imperial Irrigation District, or by the United States alone subject to repayment of a proper proportionate part of the cost with interest by the Imperial Irrigation District, or by the Imperial Irrigation District alone, subject to a participation in the power plant and power output by the Yuma project upon a repayment to the district of a proportionate part of the construction cost.

6. The power plant installation for construction and other purposes at Pilot Knob should, at the outset, be for the utilization of about 3,000 second-feet of water falling 30 feet, and space should be provided for a possible later enlargement of the plant.

7. The United States should undertake the early construction of storage reservoirs on the drainage basin of the Colorado River as part of a comprehensive plan for the betterment of the water-supply conditions throughout the entire basin of this river. The stored water should be made available for power and irrigation at a fair charge for this service. By storage on a large scale in well-distributed reservoirs the peak of the lower river's flood discharge will be cut down and the menace to the submersible lands along the Colorado River below the Grand Canyon, and in particular to the delta region and the Imperial Valley, will be reduced.

8. Negotiations should at once be entered into, through appropriate channels to bring about an understanding with Mexico, in reference to the control of Colorado River at its high stages on Mexican territory and in reference to the use of the river's water for irrigation in Mexico, and also to permit the United States to construct canals for the irrigation of lands in California across Mexican territory if found desirable to so locate them.

9. That funds be provided for a continuation of the studies relating to the movement of the blow sand on the line of the canal and that these studies be conducted under supervision of the United States Reclamation Service.

Appendix 102

**HISTORICAL BACKGROUND:
THE KINKAID ACT**

(Act of May 18, 1920, 41 Stat. 600)

AN ACT To provide for an examination and report on the condition and possible irrigation development of the Imperial Valley in California

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is hereby authorized and directed to have an examination made of the Imperial Valley in the State of California, with a view of determining the area, location, and general character of the public and privately owned unirrigated lands in said valley which can be irrigated at a reasonable cost, and the character, extent, and cost of an irrigation system, or of the modification, improvement, enlargement, and extension of the present system, adequate and dependable for the irrigation of the present irrigated area in the said valley, and of the public and privately owned lands in said valley and adjacent thereto not now under irrigation, which can be irrigated at a reasonable cost from known sources of water supply, by diversion of water from the Colorado River at Laguna Dam.

SEC. 2. That the said Secretary shall report to Congress not later than the 6th day of December, 1920, the result of his examination, together with his recommendation as to the feasibility, necessity, and advisability of the undertaking, or the participation by the United States, in a plan of irrigation development with a view of placing under irrigation the remaining unirrigated public and privately owned lands in said valley and adjacent thereto, in connection with the modification, improvement, enlargement, and extension of the present irrigation systems of the said valley.

SEC. 3. That the said Secretary shall report in detail as to the character and estimated cost of the plan or plans on which he may report, and if the said plan or plans shall include storage, the location, character, and cost of said storage, and the effect on the irrigation development of other sections or localities of the storage recommended and the use of the stored water in the Imperial Valley and adjacent lands.

SEC. 4. That the said Secretary shall also report as to the extent, if any, to which, in his opinion, the United States should contribute to the cost of carrying out the plan or plans which he may propose; the approximate proportion of the total cost that should be borne by the various irrigation districts or associations or other public or private agencies now organized or which may be organized; and the manner in which their contribution should be made; also to what extent and in what manner the United States should control, operate, or supervise the carrying out of the plan proposed, and what assurances he has been able to secure as to the approval of, participation in, and contribution to the plan or plans proposed by the various contributing agencies.

SEC. 5. That, for the purpose of enabling the Secretary of the Interior to pay not to exceed one-half of the cost of the examination and report herein provided for, there is hereby authorized to be appropriated the sum of \$20,000: *Provided*, That no expenditure shall be made or obligation incurred hereunder by the Secretary of the Interior until provision shall have been made for the payment of at least one-half the cost of the examination and report herein provided for by associations and agencies interested in the irrigation of the lands of the Imperial Valley.

Approved, May 18, 1920.

Appendix 103

HISTORICAL BACKGROUND:

**EXTRACTS FROM THE FALL-DAVIS REPORT,
FEBRUARY 28, 1922, "PROBLEMS OF IMPERIAL
VALLEY AND VICINITY"**

(S. Doc. 142, 67th Cong., 2d sess.)

RECOMMENDATIONS (P. 21)

1. It is recommended that through suitable legislation the United States undertake the construction with Government funds of a high-line canal from Laguna Dam to the Imperial Valley, to be reimbursed by the lands benefited.

2. It is recommended that the public lands that can be reclaimed by such works be reserved for settlement by ex-service men under conditions securing actual settlement and cultivation.

3. It is recommended that through suitable legislation the United States undertake the construction with Government funds of a reservoir at or near Boulder Canyon on the lower Colorado River to be reimbursed by the revenues from leasing the power privileges incident thereto.

4. It is recommended that any State interested in this development shall have the right at its election to contribute an equitable part of the cost of the construction of the reservoir and receive for its contribution a proportionate share of power at cost to be determined by the Secretary of the Interior.

5. It is recommended that the Secretary of the Interior be empowered after full hearing of all concerned to allot the various applicants their due proportion of the power privileges and to allocate the cost and benefits of a high-line canal.

6. It is recommended that every development hereafter authorized to be undertaken on the Colorado River by Federal Government or otherwise be required in both construction and operation to give priority of right and use—

First: To river regulation and flood control.

Second: To use of storage water for irrigation.

Third: To development of power.

Part II

THE COLORADO RIVER COMPACT AND RELATED DATA

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Appendix 201

**THE COLORADO RIVER COMPACT:
ACT OF CONGRESS AUTHORIZING NEGOTIATION**

(Act of Aug. 19, 1921, 42 Stat. 171)

AN ACT To permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes

Whereas the Colorado River and its several tributaries rise within and flow through or from the boundaries between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming; and

Whereas the territory included within the drainage area of the said stream and its tributaries is largely arid and in small part irrigated, and the present and future development necessities and general welfare of each of said States and of the United States require the further use of the waters of said streams for irrigation and other beneficial purposes, and that future litigation and conflict respecting the use and distribution of said waters should be avoided and settled by compact between said States; and

Whereas the said States, by appropriate legislation, have authorized the governors thereof to appoint commissioners to represent said States for the purpose of entering into a compact or agreement between said States respecting the future utilization and disposition of the waters of the Colorado River and of the streams tributary thereto; and

Whereas the governors of said several States have named and appointed their respective commissioners for the purposes aforesaid, and have presented their resolution to the President of the United States requesting the appointment of a representative on behalf of the United States to participate in said negotiations and to represent the interests of the United States: Now, therefore,

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That consent of Congress is hereby given to the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming to negotiate and enter into a com-

pact or agreement not later than January 1, 1923, providing for an equitable division and apportionment among said States of the water supply of the Colorado River and of the streams tributary thereto, upon condition that a suitable person, who shall be appointed by the President of the United States, shall participate in said negotiations, as the representative of and for the protection of the interests of the United States, and shall make report to Congress of the proceedings and of any compact or agreement entered into, and the sum of \$10,000, or so much thereof as may be necessary, is hereby authorized to be appropriated to pay the salary and expenses of the representative of the United States appointed hereunder: *Provided*, That any such compact or agreement shall not be binding or obligatory upon any of the parties thereto unless and until the same shall have been approved by the legislature of each of said States and by the Congress of the United States.

SEC. 2. That the right to alter, amend, or repeal this Act is herewith expressly reserved.

Approved, August 19, 1921.

Appendix 202

**CITATIONS OF STATE LAWS AUTHORIZING
NEGOTIATION OF COLORADO RIVER COMPACT**

- ARIZONA: Act of March 5, 1921 (Laws, 1921, p. 53).
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NEVADA: Act of March 21, 1921 (Stats., 1921, p. 190).
NEW MEXICO: Act of March 11, 1921 (Laws, 1921, p. 217).
UTAH: Act of March 14, 1921 (Laws, 1921, p. 184).
WYOMING: Act of February 22, 1921 (Laws, 1921, p. 166).

Appendix 203

THE COLORADO RIVER COMPACT:

TEXT

No. 6225

UNITED STATES OF AMERICA

DEPARTMENT OF STATE

To all to whom these presents shall come, Greeting:

I Certify That the document annexed is a true copy of the "Colorado River Compact," signed 24th November, 1922, at the City of Santa Fe, New Mexico, the original of which is on file in this Department.

In testimony whereof I, Charles E. Hughes, Secretary of State, have hereunto caused the Seal of the Department of State to be affixed and my name subscribed by the Chief Clerk of the said Department, at the City of Washington, this twenty-second day of December 1922.

[SEAL]

CHARLES E. HUGHES,
Secretary of State.

By BEN G. DAVIS,
Chief Clerk.

COLORADO RIVER COMPACT

The States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, having resolved to enter into a compact under the Act of the Congress of the United States of America approved August 19, 1921 (42 Statutes at Large, page 171), and the Acts of the Legislatures of the said States, have through their Governors appointed as their Commissioners:

W. S. Norviel for the State of Arizona
W. F. McClure for the State of California
Delph E. Carpenter for the State of Colorado
J. G. Scrugham for the State of Nevada
Stephen B. Davis, Jr., for the State of New Mexico
R. E. Caldwell for the State of Utah
Frank C. Emerson for the State of Wyoming

who, after negotiations participated in by Herbert Hoover appointed by The President as the representative of the United States of America, have agreed upon the following articles:

A17

ARTICLE I

The major purposes of this compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water; to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods. To these ends the Colorado River Basin is divided into two Basins, and an apportionment of the use of part of the water of the Colorado River System is made to each of them with the provision that further equitable apportionments may be made.

ARTICLE II

As used in this compact—

(a) The term "Colorado River System" means that portion of the Colorado River and its tributaries within the United States of America.

(b) The term "Colorado River Basin" means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied.

(c) The term "States of the Upper Division" means the States of Colorado, New Mexico, Utah, and Wyoming.

(d) The term "States of the Lower Division" means the States of Arizona, California, and Nevada.

(e) The term "Lee Ferry" means a point in the main stream of the Colorado River one mile below the mouth of the Paria River.

(f) The term "Upper Basin" means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System above Lee Ferry.

(g) The term "Lower Basin" means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System below Lee Ferry.

(h) The term "domestic use" shall include the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power.

ARTICLE III

(a) There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.

(b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum.

(c) If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).

(d) The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.

(e) The States of the Upper Division shall not withhold water, and the States of the Lower Division shall not require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses.

(f) Further equitable apportionment of the beneficial uses of the waters of the Colorado River System unapportioned by paragraphs (a), (b), and (c) may be made in the manner provided in paragraph (g) at any time after October first, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b).

(g) In the event of a desire for a further apportionment as provided in paragraph (f) any two signatory States, acting through their Governors, may give joint notice of such desire to the Governors of the other signatory States and to The President of the United States

of America, and it shall be the duty of the Governors of the signatory States and of The President of the United States of America forthwith to appoint representatives, whose duty it shall be to divide and apportion equitably between the Upper Basin and Lower Basin the beneficial use of the unapportioned water of the Colorado River System as mentioned in paragraph (f), subject to the legislative ratification of the signatory States and the Congress of the United States of America.

ARTICLE IV

(a) Inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the development of its Basin, the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes. If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding.

(b) Subject to the provisions of this compact, water of the Colorado River System may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes.

(c) The provisions of this article shall not apply to or interfere with the regulation and control by any State within its boundaries of the appropriation, use, and distribution of water.

ARTICLE V

The chief official of each signatory State charged with the administration of water rights, together with the Director of the United States Reclamation Service and the Director of the United States Geological Survey shall cooperate, ex-officio:

(a) To promote the systematic determination and coordination of the facts as to flow, appropriation, consumption, and use of water in the Colorado River Basin, and the interchange of available information in such matters.

(b) To secure the ascertainment and publication of the annual flow of the Colorado River at Lee Ferry.

(c) To perform such other duties as may be assigned by mutual consent of the signatories from time to time.

ARTICLE VI

Should any claim or controversy arise between any two or more of the signatory States: (a) with respect to the waters of the Colorado River System not covered by the terms of this compact; (b) over the

meaning or performance of any of the terms of this compact; (c) as to the allocation of the burdens incident to the performance of any article of this compact or the delivery of waters as herein provided; (d) as to the construction or operation of works within the Colorado River Basin to be situated in two or more States, or to be constructed in one State for the benefit of another State; or (e) as to the diversion of water in one State for the benefit of another State; the Governors of the States affected, upon the request of one of them, shall forthwith appoint Commissioners with power to consider and adjust such claim or controversy, subject to ratification by the Legislatures of the States so affected.

Nothing herein contained shall prevent the adjustment of any such claim or controversy by any present method or by direct future legislative action of the interested States.

ARTICLE VII

Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.

ARTICLE VIII

Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact. Whenever storage capacity of 5,000,000 acre-feet shall have been provided on the main Colorado River within or for the benefit of the Lower Basin, then claims of such rights, if any, by appropriators or users of water in the Lower Basin against appropriators or users of water in the Upper Basin shall attach to and be satisfied from water that may be stored not in conflict with Article III.

All other rights to beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that Basin in which they are situate.

ARTICLE IX

Nothing in this compact shall be construed to limit or prevent any State from instituting or maintaining any action or proceeding, legal or equitable, for the protection of any right under this compact or the enforcement of any of its provisions.

ARTICLE X

This compact may be terminated at any time by the unanimous agreement of the signatory States. In the event of such termination all rights established under it shall continue unimpaired.

ARTICLE XI

This compact shall become binding and obligatory when it shall have been approved by the Legislatures of each of the signatory States and by the Congress of the United States. Notice of approval by the Legislatures shall be given by the Governor of each signatory State to the Governors of the other signatory States and to the President of the United States, and the President of the United States is requested to give notice to the Governors of the signatory States of approval by the Congress of the United States.

IN WITNESS WHEREOF, the Commissioners have signed this compact in a single original, which shall be deposited in the archives of the Department of State of the United States of America and of which a duly certified copy shall be forwarded to the Governor of each of the signatory States.

DONE at the City of Santa Fe, New Mexico, this twenty-fourth day of November, A. D. One Thousand Nine Hundred and Twenty-two.

(Signed) W. S. NORVIEL.
(Signed) W. F. McCLURE.
(Signed) DELPH E. CARPENTER.
(Signed) J. G. SCRUGHAM.
(Signed) STEPHEN B. DAVIS, Jr.
(Signed) R. E. CALDWELL.
(Signed) FRANK C. EMERSON.

Approved:
(Signed) HERBERT HOOVER.

Appendix 204

**THE COLORADO RIVER COMPACT:
REPORT OF HERBERT HOOVER, REPRESENTATIVE
OF THE UNITED STATES**

(H. Doc. 605, 67th Cong., 4th sess.)

COLORADO RIVER COMPACT

**LETTER FROM THE CHAIRMAN OF THE COLORADO RIVER COMMISSION,
TRANSMITTING REPORT OF THE PROCEEDINGS OF THE COLORADO
RIVER COMMISSION AND THE COMPACT OR AGREEMENT ENTERED
INTO BETWEEN THE STATES OF ARIZONA, CALIFORNIA, COLORADO,
NEVADA, NEW MEXICO, UTAH, AND WYOMING RESPECTING THE
APPORTIONMENT OF THE WATERS OF THE COLORADO RIVER**

**DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
*Washington, March 2, 1923.***

**The SPEAKER OF THE HOUSE OF REPRESENTATIVES,
*Washington, D. C.***

SIR: The act of Congress of August 19, 1921 (42 Stat. L. 171), permitting a compact to be entered into between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the apportionment of the waters of the Colorado River, authorized the President of the United States to appoint a representative who should participate in the negotiations as a representative of and for the protection of the interests of the United States, and who should report to Congress the proceedings of the commission and the compact or agreement entered into. The President appointed me as the Federal representative under this act.

As directed by the act, I have the honor to report the compact and proceedings as follows:

The commission met for the first time January 26, 1922, in the city of Washington.

The following commissioners from all the interested States were present: W. S. Norviel, commissioner for Arizona; W. F. McClure,

commissioner for California; Delph E. Carpenter, commissioner for Colorado; J. G. Scrugham, commissioner for Nevada; Stephen B. Davis, Jr., commissioner for New Mexico; R. E. Caldwell, commissioner for Utah; Frank C. Emerson, commissioner for Wyoming.

An organization was effected by the election of myself as chairman and Clarence C. Stetson as executive secretary.

Subsequent meetings and public hearings were held in March and April 1922 in Phoenix, Ariz.; El Centro and Los Angeles, Calif.; Salt Lake City, Utah; Grand Junction and Denver, Colo.; and Cheyenne, Wyo. A trip was also made to the proposed reservoir site at Boulder Canyon. A large amount of testimony was taken and numerous statements received from officials and parties who were interested in various ways in the development of the river.

The final meeting of the commission was held in Santa Fe, N. Mex., beginning November 9, 1922, and continuing until November 24. On the latter date an agreement was reached and the compact signed by all of the commissioners and approved by me as the representative of the United States.

The original of the compact is filed with the Secretary of State of the United States. A true copy is submitted herewith.

The Legislatures of the States of California, Nevada, New Mexico, Utah, and Wyoming have to date ratified and approved the compact. Measures for its approval are now pending before the Legislatures of Arizona and Colorado, and a bill is pending before the Congress (H. R. 13480) looking to congressional approval.

Frequently in the past just such very serious conflicts have arisen on interstate streams resulting in prolonged and expensive litigation and causing long delays in development. This compact, when approved, will be a settlement of impending interstate controversies and an adjudication of rights to the use of the water in advance of construction, thus eliminating litigation and laying the groundwork for the orderly development of a vast area of desert land, estimated at some 4,000,000 acres; the utilization of river flow now unused in the generation of hydroelectric energy, the possibilities of which are estimated at 6,000,000 horsepower; the construction of dams for the control of floods which annually threaten communities in which over 75,000 American citizens now reside, with property worth more than \$100,000,000; the establishment of new homes and new communities, and the creation of a vast amount of new wealth.

The primary purpose of the compact is to make an equitable division and apportionment of the waters of the river. For this purpose the river system is divided into an upper and lower basin, following:

- (1) A natural division—the two basins varying in topography, and being separated by a thousand miles of deep canyon; and

(2) Economic lines—the climate, crops, and use of water being different. The lower river has immediate need of works for the control of floods, the development of power, and expansion of irrigation. It has concentrated blocks of irrigable land, while the upper basin, which is the source of water supply, will, because of its colder climate and more scattered acreage, probably be slower of development.

Due consideration is given to the needs of each basin, and there is apportioned to each seven and one-half million acre-feet annually from the flow of the river in perpetuity, and to the lower basin an additional million feet of annual flow, giving it a total of eight and one-half million acre-feet annually in perpetuity. There is thus allocated about 80 percent of the total natural flow of the river, leaving some 4,000,000 acre-feet unapportioned. While no other waters are definitely allotted by the compact, there is nothing which prevents the States of either basin from using more water than the amount apportioned, any rights to such use being subject to the further apportionment at a later date. This feature is covered by a provision for the creation of a new commission at the end of 40 years, which will have power to make a further apportionment of the water not now dealt with. The compact provides machinery for the settlement, without litigation, of disputes which may arise between the States; it gives agriculture preference over power in the use of the water; it makes navigation subservient to other uses; and it leaves open for international settlement any claims to the use of water in the Republic of Mexico.

I do not consider it either necessary or appropriate to discuss in any detail the provisions of the compact which affect only the States that are parties to it. Conclusions as to those matters must rest with the States themselves. As the representative of the United States, I am primarily concerned with the protection of its interests, which may be summarized under the following heads:

- (1) Its interest in the Colorado River as a navigable stream.
- (2) Its relation with the Republic of Mexico.
- (3) Its interest as proprietor of public lands and as owner of irrigation works.
- (4) Its duties in relation to Indian tribes.
- (5) Its interest under the Federal water power act.

THE EFFECT OF THE COMPACT UPON THE INTERESTS OF THE UNITED STATES IN THE COLORADO RIVER AS A NAVIGABLE STREAM

The only clause of the compact specifically affecting the navigability of the Colorado River is paragraph (a) of Article IV, as follows:

(a) Inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the develop-

ment of its basin, the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes. If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding.

Many years ago the navigation of the Colorado River was possible and was actually carried on from the mouth of the river to points in what is now the State of Nevada. As late as 1904 there were still some boats engaged in transportation upon the lower reaches of the river. In 1901 the first large diversion from the lower stream system, that to the Imperial Valley, began, and this, with other developments in the basin, necessarily depleted the supply for navigation below that point.

In 1904 Congress passed an act (33 Stat. 224, sec. 25) authorizing the Secretary of the Interior to divert the waters of the Colorado River for the irrigation of lands now constituting the Yuma irrigation project. Under this authority there was constructed shortly thereafter what is known as the Laguna Dam, a large dam across the channel of the river a short distance above Yuma. This dam now effectually prevents any navigation of the river between points above and below.

Prior to the construction of this dam the operation of boats on the river had become unprofitable, there having been no navigation for several years. The boats then in service were old. They were purchased by the Government, used in connection with the construction of the dam, and then put out of service. While there is an occasional period of high water when navigation may be physically possible, this would continue for only a few months in ordinary years. There is no commercial navigation upon the river at present.

Gen. Lansing H. Beach, Chief of Engineers of the United States, War Department, in testifying before the commission, said:

While the lower Colorado did have some navigation on it in the seventies, there is nothing on it today to justify navigation being regarded as of foremost importance.

Later in his testimony he stated that he considered the river navigable as far as the mouth of the Gila.

These facts are the basis for the declaration in the compact that "the Colorado River has ceased to be navigable for commerce."

If navigation were to be considered as of paramount importance on this river, it would necessarily mean very serious interference with the agricultural and industrial development of the country tributary to it. Further dams across the stream must be constructed. Further water must be diverted, and a large quantity will be permanently lost to the volume of the river through evaporation, consumption, and diversion from the stream system. To render the river commercially navigable in fact requires a supply of water considerably greater in volume and more regular in flow than that now

available. The basis for the recital in the compact that "the reservation of its waters for navigation would seriously limit the development of its basin" is therefore apparent.

It is estimated by the Reclamation Service that some 4,000,000 acres of land at present arid, barren, unoccupied, and practically worthless can be irrigated from the waters of this river and made fertile and productive. Such development means population, prosperous homes, and thriving cities. There are power possibilities on the river involving the creation of millions of horsepower of hydroelectric energy with which to put into operation and maintain vast industries furnishing profitable employment. The possibilities of agricultural and industrial development are so great and their ramifications so far-reaching as to dwarf any values in the use of this river for navigation. Navigation and diversion for agriculture may not proceed economically together, for one necessarily impairs the other. These are the considerations which induced the declaration that the use of water "for the purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes."

It has been suggested that the approval by the Congress of the paragraph as to navigation might be considered violative of the international obligations of this country toward the Republic of Mexico. Upon this subject I call your attention to some expressions of official opinion.

Hon. Albert B. Fall, Secretary of the Interior, in a letter to Hon. Addison T. Smith, chairman of the Committee on Irrigation of Arid Lands of the House of Representatives, discussed these international features and reached the following conclusion regarding this provision:

The said paragraph (a), Article IV, of the compact would, in my opinion, be regarded as a violation of the rights of Mexico and, to say the least, might be made the basis of a claim against the United States. I am clearly of the opinion that said paragraph should not be approved by the Congress of the United States.

Under date of December 30, 1922, Hon. Charles E. Hughes, Secretary of State, wrote Mr. Smith, in part, as follows:

I have the honor to acknowledge the receipt of your letter of December 21, 1922, transmitting a copy of the bill (H. R. 13480) granting the consent and approval of Congress to the Colorado River compact, and requesting me to furnish your committee such information and suggestions as may be proper regarding the proposed legislation.

The compact does not pertain to matters coming within the jurisdiction of this department, except insofar as the control and use of the waters of the Colorado River system may possibly affect the international relations of the Government. The fact that the Colorado River has international aspects and the possibility that questions of an international character concerning the use of the waters may arise, necessitating action by the Federal Government with respect to the distribution

of the waters, appears to be recognized and adequately provided for by Article III (c) of the compact.

On December 12, 1895, Hon. Judson Harmon, Attorney General of the United States, in a letter to the Secretary of State (21 Op. Atty. Gen. 274), discussed fully the obligations of the United States toward Mexico in relation to the Rio Grande, both as to navigation and irrigation, international rights on that river being governed by the same treaties as on the Colorado. He reached the conclusion that Mexico had no legal basis, either under the treaties or under general principles of international law, for complaint against the construction of a dam on the Rio Grande within the United States, irrespective of its effect upon the navigability of the river below the boundary line or upon the irrigation of lands in that country.

Should Congress take the view opposed to the policy of preferring reclamation to navigation and desire to leave navigation as a superior use, the purpose can be accomplished by a reservation or exception in the approving legislation under the last sentence of the paragraph quoted without affecting the balance of the compact.

RELATIONS WITH THE REPUBLIC OF MEXICO, EXCLUSIVE OF NAVIGATION

Some 200,000 acres of land in the Republic of Mexico are now irrigated by the waters of the Colorado River, and it is understood that there are additional lands in Mexico that might be brought under irrigation.

The compact does not undertake to deal with these lands nor with any rights which may exist to the diversion of water for their benefit. It was realized that this subject was beyond the powers of the commission as defined in the various legislative acts and the act of Congress, which authorized the apportionment of waters only among the several States interested, and that the question could be properly determined only by agreement between the United States and the Republic of Mexico, through the treaty-making agencies of the Federal Government. At the same time the commission realized that it was not beyond the bounds of possibility that, as a matter of international comity, a treaty or agreement might at some time be entered into by the two nations which would establish some valid rights to the irrigation of these Mexican lands, with a resulting obligation upon the United States to allow some quantity of water to pass the international boundary for their use, under such terms and conditions as might be agreed to. To provide for this possible future contingency, the terms of which cannot now be foreseen, the compact provides (Art. III, c) for the equal distribution of this burden between the two basins in the United States. By reference to the letter of the Secretary of State, already quoted, it will be seen that he considers this provision adequate to cover the situation.

THE INTEREST OF THE UNITED STATES AS THE PROPRIETOR OF PUBLIC
LANDS AND AS THE OWNER OF IRRIGATION WORKS

A large part of the land through which the Colorado River flows, or which is adjacent or tributary to it, is public domain of which the United States is the proprietor. In the development of these lands the Government, through the Reclamation Service, has constructed several irrigation systems in connection with which large quantities of water are being taken from the river. The Salt River and the Yuma projects are examples.

Rights to the continued use and diversion of water for these projects are now vested either in the United States or in the individuals who are actually using it. In this respect the United States is in the same position as are thousands of appropriators whose diversions and use antedate the compact. An agreement entered into subsequent to the acquisition of their interests could not adversely affect them. The compact itself disclaims any intent to do so by Article VIII, which declares that—

Present perfected rights to the beneficial use of waters of the Colorado River system are unimpaired by this compact.

OBLIGATIONS TO INDIAN TRIBES

Because of its duties and obligations toward Indians, the United States has a special interest in certain lands within the areas affected by probable developments on the Colorado River. A considerable area of the lands is embraced within Indian reservations. Some progress in the irrigation of these lands has already been made.

The interest of the United States in this regard is recognized and protected by Article VII of the compact, which provides that—

Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.

INTERESTS OF THE UNITED STATES UNDER THE FEDERAL WATER
POWER ACT OF JUNE 10, 1920

Under the Federal water power act, the United States provided a system for the granting of licenses for the construction of works for the development of power upon the public lands.

This act is applicable to the Colorado River and lands lying along it. There are numerous large power sites, and various applications for licenses for the use of its waters are now pending before the Federal Power Commission. The compact does not interfere in any way with the powers of the commission. The settlement of conflicting claims by the States, under the compact plan, should result in a more rapid development of the river possibilities as to power, as well as other purposes.

The Federal Power Commission, through its chairman, the Secretary of War, on December 29, 1922, addressed a letter to the chairman of the Committee on Irrigation of Arid Lands, expressing approval of the compact, as follows:

FEDERAL POWER COMMISSION,
Washington, December 29, 1922.

[Secretary of War, chairman; Secretary of the Interior; Secretary of Agriculture; O. C. Merrill, executive secretary]

HON. ADDISON T. SMITH,
*Chairman, Committee on Irrigation of Arid Lands,
House of Representatives.*

DEAR MR. SMITH: In reply to your request for information and suggestions on H. R. 13480, granting the consent and approval of Congress to the Colorado River compact, I have to inform you that practically all development on the Colorado River is suspended pending the acceptance by the interested States and the United States of some compact to apportion the waters equitably among the States.

There are several developments now under consideration which have merit and a fair chance of success, and in the interest of that region they should be permitted to proceed.

The compact quoted in H. R. 13480 is the result of many conferences and discussions; it has been agreed to by the representatives of all the interested States and offers the best, if not the only, chance of terminating an obstructive controversy. It is believed, therefore, that H. R. 13480 should receive favorable action.

Very truly yours,

JOHN W. WEEKS,
Secretary of War, Chairman.

In my opinion, the compact does not adversely affect any interest of the United States. If it is approved by the two States which have not yet acted, the consent of all the signatory States will have been given.

If the approval of all the States is obtained, I recommend that the compact be also approved by the Congress.

Faithfully yours,

HERBERT HOOVER,
*Federal Representative on and
Chairman of the Colorado River Commission.*

(A certified copy of the compact was printed as part of H. Doc. 605. It is omitted here to avoid duplication.)

Appendix 205

**THE COLORADO RIVER COMPACT:
ANALYSIS BY HON. HERBERT HOOVER**

(Extract from the Congressional Record, January 30, 1923, pp. 2710-2713; part of extension of remarks of Hon. Carl Hayden, Representative from Arizona)

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, January 27, 1923.

HON. CARL HAYDEN,
House of Representatives, Washington, D. C.

MY DEAR MR. HAYDEN: Referring to your letter of January 9 addressed to the Secretary, inclosing questionnaire on the Colorado River compact, I am requested by Mr. Hoover to forward to you his answers to the questions which you propounded.

Very truly yours,

CLARENCE C. STETSON,
Executive Secretary, Colorado River Commission.

Question 1. What was the reason for dividing the drainage area of the Colorado River and its tributaries into two basins, as provided in Article II of the Colorado River compact?

The reasons were:

(a) The commission, upon analysis, found that the causes of present friction and of major future disputes lay between the lower basin States and the upper basin States, and that very little likelihood of friction lay between the States within each basin; that the delays to development at the present time are wholly interbasinal disputes; and that major development is not likely to be impeded by disputes between the States within each basin. And in any event, the compact provides machinery for such settlements.

(b) The drainage area falls into two basins naturally, from a geographical, hydrographical, and an economic point of view. They are separated by over 500 miles of barren canyon which serves as the neck of the funnel, into which the drainage area comprised in the upper basin pours its waters, and these waters again spread over the lands of the lower basin.

(c) The climate of the two basins is different: that of the upper basin being, generally speaking, temperate, while that of the lower basin ranges from semitropical to tropical. The growing seasons, the crops, and the quantity of water consumed per acre are therefore different.

(d) The economic conditions in the two basins are entirely different. The upper basin will be slower of development than the lower basin. The upper basin will secure its waters more by diversion than by storage, whereas the development of the lower basin is practically altogether a storage problem.

(e) The major friction at the present moment is over the water rights which might be established by the erection of adequate storage in the lower basin, as prejudicing the situation in the upper basin, and regardless of legal rights in either case. The States are now divided into two groups in opposition to each other legislatively, with little hope of the cohesion that is necessary before Federal aid can ever be secured.

The use of the group method of division was therefore adopted both from necessity, as being the only practical one, and from advisability, being dictated by the conditions existing in the entire basin.

Question 2. Was the apportionment in Article III of the compact between the upper and lower basins arbitrary or was it based on the actual requirements of each basin?

The apportionment was not arbitrary. It was based on a careful consideration of respective needs of the two basins. The data available was the estimates provided by the Reclamation Service, which follow, showing the total new and old acreage in the two basins, including not only all existing projects but all projects considered economically feasible and also those of doubtful feasibility and intended to cover every prospective development during the next 75 years. The commissioners and engineering staffs of the different States varied somewhat from the basic estimates of the Reclamation Service, and some compromise from these figures was agreed to by the commission to compensate in different directions. This was particularly the case with regard to the estimated consumption of water per acre. It will be noted that the total acreage in the lower basin, present and prospective, is given as 2,127,000, whereas that in the upper basin is given as 4,000,000. Therefore the amount of water depends partly on the consumption assumed per acre, and after general consideration an addition was made in each case to cover any possible mischances of calculation, the general addition being about 30 percent more than the probable use.

Table of Colorado River acreage

	Acreage irrigated 1920	New acreage	Total acreage
Lower basin:			
Arizona.....	507,000	640,000	1,147,000
California.....	450,000	490,000	940,000
Nevada.....	5,000	35,000	40,000
Total.....	962,000	1,165,000	2,127,000
Upper basin:			
Colorado.....	740,000	1,018,000	1,758,000
New Mexico.....	34,000	483,000	517,000
Utah.....	359,000	456,000	815,000
Wyoming.....	367,000	543,000	910,000
Total.....	1,500,000	2,500,000	4,000,000

Question 3. Why was 40 years fixed as the time for a future apportionment of the surplus water of the Colorado River?

There was a decided conflict between the States over the period to be fixed in this paragraph, based chiefly on their ideas as to rapidity of development and actual use of the water. Some desired a shorter and some a longer time. Suggestions were made varying from 20 to 60 years. The 40-year period was finally arrived at as a common point of agreement. Judging by experience under other projects—the Imperial Valley and Salt River Valley, for instance—the full development of contemplated construction, as shown in the table following question 2, will take a much longer time than the one fixed.

Question 4. Why was the term "Colorado River system" used in paragraph (a) of Article III, wherein 7,500,000 acre-feet of water is apportioned to the upper and lower basins, respectively?

This term is defined in Article II as covering the entire river and its tributaries in the United States. No other term could be used, as the duty of the commission was to divide all the water of the river. It serves to make it clear that this was what the commission intended to do and prevents any State from contending that, since a certain tributary rises and empties within its boundaries and is therefore not an interstate stream, it may use its waters without reference to the terms of the compact. The plan covers all the waters of the river and all its tributaries, and the term referred to leaves that situation beyond doubt.

Question 5. Why is the basis of division changed from the "Colorado River system" to the "river at Lee Ferry" in paragraph (d) of Article III, the period of time extended to 10 years and the number of acre-feet multiplied by 10?

(a) I do not think there is any change in the basis of division as the result of the difference in language in Articles III (a) and III (b). The two mean the same. By reference to Article II (f) it will be seen that Lee Ferry, referred to in III (d), is the determining point in the creation of the two basins specified in III (a). The use of this term makes it plain that the 75,000,000 acre-feet are to be delivered in the main channel of the river above the various tributaries which contribute water below.

(b) The agreement as to the flow of 75,000,000 acre-feet at Lee Ferry during each 10-year period fixes a definite quantity of water which must pass that point. Under III (a) each basin is entitled to the use of 7,500,000 acre-feet annually. Judging by past records, there will always be sufficient flow in the river to supply these quantities, but in the improbable event of a deficiency, the lower basin has the first call on the water up to a total use of 75,000,000 acre-feet each 10 years. While there was in the commission a firm belief that no such shortage will ever occur, still this provision was adopted as a matter of caution. The period of 10 years was fixed as a basis of measurement, as being long enough to allow equalization between years of high and low flow, and as representing a basis fair to both divisions.

Question 6. Are the 1,000,000 additional acre-feet of water apportioned to the lower basin in paragraph (b) of Article III supposed to be obtained from the Colorado River or solely from the tributaries of that stream within the State of Arizona?

The use of the words "such waters" in this paragraph clearly refers to waters from the Colorado River system, and the extra 1,000,000 acre-feet provided for can therefore be taken from the main river or from any of its tributaries.

Question 7. If more than 1,000,000 acre-feet of water are beneficially used and consumed annually on the tributaries of the Colorado River in Arizona, will the excess above that amount be charged against the 75,000,000 acre-feet of water to be delivered at Lee Ferry during any 10-year period, as provided in paragraph (d) of Article III? In other words, will the use of any amount of water from the tributaries of the Colorado below Lee Ferry in any way relieve the States of the upper division from their obligation not to cause the flow of the river to be depleted below 75,000,000 acre-feet in any period of 10 consecutive years?

I can see no connection between the use of waters in Arizona from Colorado River tributaries and the obligation of the upper States to

deliver the 75,000,000 acre-feet each 10 years at Lee Ferry. Their undertaking in this respect is separate and independent and without reference to place of use or quantity of water obtained from any other source. On the face of this paragraph this amount of water must be delivered even though not used at all. The obligation certainly can not be diminished by the fact that Arizona obtains other water from another source. The contract is to deliver a definite amount of water at a definite point above the inflow of various important tributaries, and I find nothing in the compact which modifies this obligation, except the general limitation as to use, which is hereafter referred to.

Question 8. As a matter of fact more than 1,000,000 acre-feet of water from the tributaries of the Colorado below Lee Ferry are now being beneficially used and consumed within the State of Arizona. Will the excess above that amount be accounted for as a part of the 7,500,000 acre-feet first apportioned to the lower basin from the waters of the "Colorado River system" as provided in paragraph (a) of Article III?

By the provisions of paragraphs (a) and (b), Article III, the lower basin is entitled to the use of a total of 8,500,000 acre-feet per annum from the entire Colorado River system, the main river and its tributaries. All use of water in that basin, including the waters of tributaries entering the river below Lee Ferry, must be included within this quantity. The relation is reciprocal. Water used from these tributaries falls within the 8,500,000 acre-feet quota. Water obtained from them does not come within the 75,000,000 acre-feet 10-year period flow delivered at Lee Ferry, but remains available for use over and above that amount.

Question 9. Does paragraph (c) of Article III contemplate a treaty between the United States and the Republic of Mexico under which one-half of a deficiency of water for the irrigation of lands in Mexico shall be supplied from reservoirs in Arizona?

No. Paragraph (c) of Article III does not contemplate any treaty. It recognizes the possibility that a treaty may, at some time, be made and that under it Mexico may become entitled to the use of some water, and divides the burden in such an event, but the quantity to which that country may become entitled and the manner, terms, and conditions upon which such use may depend, cannot be foreseen. It is a certainty that no such treaty will be negotiated and ratified which is unfair to the United States or any State or detrimental to their interests. To discuss whether or not a treaty might be made under which Mexico might be permitted to receive water impounded in a reservoir which may be constructed, is to indulge in speculation, but it is safe to say that if such a situation should result it will be only under conditions fair and satisfactory to all parties concerned.

Question 10. What is the estimated quantity of water which constitutes the undivided surplus of the annual flow of the Colorado River and may the compact be construed to mean that no part of this surplus can be beneficially used or consumed in either the upper or the lower basins until 1963, so that the entire quantity above the apportionment must flow into Mexico, where it may be used for irrigation and thus create a prior right to water which the United States would be bound to recognize at the end of the 40-year period?

(a) The unapportioned surplus is estimated at from 4,000,000 to 6,000,000 acre-feet, but may be taken as approximately 5,000,000 acre-feet.

(b) The right to the use of unapportioned or surplus water is not covered by the compact. The question cannot arise until all the waters apportioned are appropriated and used, and this will not be until after the lapse of a long period of time, perhaps 75 years. Assuming that each basin should reach the limit of its allotment and there should still be water unapportioned, in my opinion, such water could be taken and used in either basin under the ordinary rules governing appropriations, and such appropriations would doubtless receive formal recognition by the commission at the end of the 40-year period. There is certainly nothing in the compact which requires any water whatever to run unused to Mexico, or which recognizes any Mexican rights, the only reference to that situation being the expression of the realization that some such rights may perhaps in the future be established by treaty. As I understand the matter, the United States is not "bound to recognize" any such rights of a foreign country unless based upon treaty stipulations.

Question 11. Is there any possibility that water stored by dams in the tributaries of the Colorado River in Arizona, such as the Roosevelt Reservoir, on the Salt River, or the San Carlos Reservoir, on the Gila, might, under the terms of such a treaty, be released for use in Mexico to the injury of the water users of the projects for whose benefit such dams were constructed?

I cannot conceive of the making or the ratification of a treaty which would have such an effect. If it were possible to believe that the Federal Government would treat its own citizens with such absolute disregard of their property and rights, I presume that they would receive ample protection even as against the Government, under the provisions of the Federal Constitution.

It must be remembered that the United States now has a large financial interest in the projects already constructed. It is not to be presumed that action will be taken detrimental to these interests. Furthermore, each of the seven States directly concerned has two

Members of the Senate, by which any treaty proposed must be ratified.

Question 12. Is it true, as has been asserted, that, if the Colorado River compact be approved, the water which should reclaim 2,500,000 acres of land in Arizona will go to Mexico and there irrigate a vast area owned by American speculators who will cultivate the same with Asiatic coolie labor and raise cheap crops in competition with Arizona and California farmers?

If such assertions have been made, there is absolutely nothing in the compact upon which they can be based. They are the result solely of unrestrained and unfounded imagination. As already stated, there is no reference in the compact to any rights of any persons in Mexico; none are created and none are recognized. That entire question, if it ever arises, must be dealt with by the Federal Government in the exercise of its treaty-making power. Such a subject was beyond the purview of the acts creating the commission, and it was intentionally omitted from the compact.

Question 13. Objection has been made to paragraph (d) of Article III in that it authorizes the withholding of an indefinite amount of water by the States of the upper division during a drought which might extend over two or three years. If the drought should be broken by heavy rains the ensuing floods would provide the total of 75,000,000 acre-feet within the 10 years, but water would be denied to the lower basin when worst needed and oversupplied when not needed. In your opinion, does this provision of the compact seriously menace the proper and maximum development of irrigation projects in the lower basin?

In my opinion, the provision about which you ask does not menace the proper and maximum development of irrigation projects in the lower basin.

The future development of the Colorado River Basin is dependent wholly upon the creation of storage. The lower States have certainly reached the limit of development by the direct diversion of the flow of the river. Reservoirs are imperative. They must be of sufficient size not merely to equalize the annual flow, but to impound the excessive floods of one year to supply a deficiency resulting from a following lean year. Such construction will obviate, to a great extent, the likelihood of the situation you suggest. Furthermore, there cannot be a drought or lack of water in the lower States without a similar condition in the upper. A shortage of water below can only be caused by lack of rainfall above. It is inconceivable that any upper State would attempt to store and withhold water it did not need. Such action would not be permitted under the ordinary rules of law and is prohibited by the compact itself. If the water is used in the

upper States, the return flow, ultimately large in quantity, necessarily runs down the stream. The large reservoir sites capable of impounding the flow for more than one year are in the lower, not the upper, basin, and it would be a physical impossibility for the upper States to withhold all the flow of the river for any long period, even if they desired to do so. For these reasons, I answer this question in the negative.

Question 14. Can paragraph (d) of Article III be construed to mean that the States of the upper division may withhold all except 75,000,000 acre-feet of water within any period of 10 years and thus not only secure the amount to which they are entitled under the apportionment made in paragraph (a) but also the entire unapportioned surplus waters of the Colorado River?

No. Paragraph (a) of Article III apportions to the upper basin 7,500,000 acre-feet per annum. Paragraph (e) of Article III provides that the States of the upper division shall not withhold water that cannot be beneficially used. Paragraphs (f) and (g) of this article specifically leave to further apportionment water now unapportioned. There is, therefore, no possibility of construing paragraph (d) of this article as suggested.

Question 15. Does paragraph (d) of Article III in any way modify the obligation of the States of the upper division, as expressed in paragraph (c), to permit the surplus and unapportioned waters to flow down in satisfaction of any right to water which may hereafter be accorded by treaty to Mexico? Within any year of a 10-year period, could the States of the upper division shift to the States of the lower division the entire burden of supplying such water to Mexico?

(a) No. It is provided in the compact that the upper States shall add their share of any Mexican burden to the delivery to be made at Lee Ferry, whenever any Mexican rights shall be established by treaty. By paragraph (c) of Article III, such an amount of water is to be delivered in addition to the 75,000,000 acre-feet otherwise provided for.

(b) In the face of the specific provision of Article III (c) that the burden of any deficiency must be "equally borne," I can see no possibility of placing upon the lower division the entire burden. If the surplus is sufficient, there is no burden on anyone. If it is insufficient the plain language is that it must be equally shared, with the equally plain provision that the upper division must furnish its half.

Question 16. Why is it that provision is made in paragraph (f) of Article III for a further apportionment, after 40 years, of the waters of the Colorado River system unapportioned by paragraphs (a), (b), and (c),

but that no provision is made for a revision of the terms relating to the flow of the Colorado River at Lee Ferry, as set forth in paragraph (d)?

No such special provision was necessary. All that the present commission has done has been by virtue of its power "to divide and apportion equitably" the waters of the river. By specifying in this compact the powers of the second commission in identical language the same powers are necessarily granted, and that commission may do whatever this one could, subject only to noninterference with individual rights which may have become vested under this agreement. It was therefore not considered necessary to specify powers in detail, since the grant of the general power includes the particular.

In this connection it must be remembered that the further compact at the end of 40 years can be entered into only by unanimous agreement of the States. Given such unanimity, anything desired may be done and any existing provisions modified or annulled.

Question 17. In your opinion, will the States of the upper division or the States of the lower division benefit most by the terms of paragraph (e) of Article III when the same are in actual operation?

This paragraph applies only to an unreasonable or arbitrary withholding or demand. I do not anticipate either arbitrary action or unreasonableness on the part of any of the States concerned. The upper States can gain nothing by withholding water not needed, nor can the lower States gain by demanding water for which they have no use. The paragraph is of value as an expression of the prohibition of such action, but I doubt if it is ever called into practical effect.

Question 18. Why is the use of the waters of the Colorado River for navigation made subservient to domestic, agricultural, and power uses, as provided in paragraph (a) of Article IV?

This article is an expression of the views of the commission as to the relative importance of the uses to which the waters of the river may be devoted. It is recognized that on many streams navigation is a paramount use, but on this particular river navigation is negligible in fact. As expressed in the language adopted, the river "has ceased to be navigable for commerce." This is a true statement of the existing situation. Below Yuma there is but little water in the river bed. The Laguna Dam, above Yuma, has made navigation between points above and below it physically impossible, and the construction of further dams in the development of the river will prevent navigation at other points, even if it were now physically possible. Power structures, irrigation dams and navigation cannot conveniently exist together. It was therefore felt that the very great possible use of this water for power and irrigation far outweighed in economic importance

the very slight and largely theoretical use which might be made for navigation, and this paragraph was drafted accordingly.

Question 19. Why is the impounding of water for power purposes made subservient to its use and consumption for agricultural and domestic purposes, as provided in paragraph (b) of Article IV?

(a) Because such subordination conforms to established law, either by constitution or statute, in most of the semiarid States. This provision frees the farmer from the danger of damage suits by power companies in the event of conflict between them.

(b) Because the cultivation of land naturally outranks in importance the generation of power, since it is the most important of human activities, the foundation upon which all other industries finally rest.

(c) Because there was a general agreement by all parties appearing before the commission, including those representing power interests, that such preference was proper.

Question 20. Will this subordination of the development of hydroelectric power to domestic and agricultural uses, combined with the apportionment of 7,500,000 acre-feet of water to the upper basin, utterly destroy an asset of the State of Arizona consisting of 3,000,000 horse power, which it is said could otherwise be developed within that State if the Colorado River continues to flow, undiminished in volume, across its northern boundary line and through the Grand Canyon?

(a) The subordination of power to agriculture will only diminish power in the case that it is necessary to stop the entire flow of the river at some lower dam at some particular season of the year in order to create reserves for the agricultural community. The normal engineering development of the river will proceed by various dams, of which the dam lowest down would be the only one where there would be the remotest probability of a complete stoppage of water flow. Indeed, this could not happen for at least a hundred years, as it would contemplate a development of acreage in the Lower Basin far beyond anything now dreamed of.

(b) The adequate development of power can only be obtained through the erection of storage and through the irrigation of the Upper Basin. Storage dams can be erected both in the lower and upper canyon in such a fashion as to secure an average flow of the water throughout the entire year, and thus the maximum power developed. The irrigation of the Upper Basin, as explained above, acts itself as a reservoir regulating the flow of the river, increasing the minimum flow, and thus increasing the average power.

(c) Obviously, the use of the water for irrigation in the upper basin must in some degree diminish the volume of power in the lower basin, even though the lower river were entirely regulated to secure an even

flow of the water. But it can not be pretended that the upper basin is to be denied the right to the use of the water for agricultural purposes because of power demands in the lower basin. Such a pretension would not be supported in any of the courts, and if set up in the lower basin would mean that the basin will not be developed so long as the upper States can exert any legislative influence whatever. As a matter of fact, the power possibilities of the river are in no way diminished by the compact, unless it is to be assumed that there is not to be an equitable division of water.

(d) The compact provides that no water is to be withheld above that can not be used for purposes of agriculture. The lower basin will therefore receive the entire flow of the river, less only the amount consumptively used in the upper States for agricultural purposes.

(e) The contention that the Colorado River is to continue to flow undiminished in volume across the northern boundary line of Arizona is a contention that the upper States shall have no rights to irrigation. It is a direct negation of both equity and human rights.

Question 21. Paragraph (c) of Article IV states that that article shall not interfere with the control by any State over the appropriation, use, and distribution of water within its own boundaries. Does this imply that the remainder of the compact may interfere with such intrastate control?

This article seems the only one of the compact which might affect the relations of citizens of one State with each other, and it was therefore considered advisable to add the clause to which your question refers. I do not believe, however, that its insertion in this article would, by implication or otherwise, preclude the complete control by each State of its own internal affairs.

Question 22. Does the Colorado River compact apportion any water to the State of Arizona?

No, nor to any other State individually. The apportionment is to the groups.

Question 23. In case of disagreements between the States of Arizona, California or Nevada as to a division among them of the waters of the Colorado River system apportioned by the compact to the lower basin, what procedure will be followed and what rules will govern the settlement of such differences?

This situation would be covered by Article VI. If its provisions are not sufficient or not satisfactory, then the dispute would be settled in the same way as other interstate conflicts now are, either by negotiation or agreement or by litigation.

Question 24. What was the necessity for Article VII relating to the obligations of the United States to Indian tribes?

This article was perhaps unnecessary. It is merely a declaration that the States, in entering into the agreement, disclaim any intention of affecting the performance of any obligations owing by the United States to Indians. It is presumed that the States have no power to disturb these relations, and it was thought wise to declare that no such result was intended.

Question 25. Article VIII is somewhat confusing to me and I would like to have your interpretation of its meaning. Why is the term "storage capacity" used? Does the capacity of a reservoir to hold water necessarily mean that it will be filled? If this "storage capacity" is destroyed by the reservoir filling with silt, are all rights to the use of water in the lower basin likewise destroyed? Why was so small a figure as 5,000,000 acre-feet agreed upon as the measure of this "capacity"?

(a) The first sentence of this paragraph is a recognition of the validity of present perfected rights to the use of waters and is inserted to obviate any fears on the part of present users that their rights might be impaired by the compact.

(b) The second sentence covers the situation now existing on the lower river. It is claimed that the entire low-water flow of the river has now been appropriated by users in California and Arizona, that rights to its continued and unimpaired flow have vested, and that any interference with these rights by attempted appropriation in the upper States could be prevented by appropriate legal proceedings. If such rights do exist, under the provisions of this paragraph they continue unimpaired until the use of water by direct diversion is substituted by its use through storage, at which time the enforcement of any rights to low-water flow for direct diversion obviously becomes unnecessary. When adequate storage has been provided, disputes over low-water flow necessarily cease. Five million acre-feet of storage is ample to provide water for all existing appropriations in the lower basin, and since it was intended only to meet the situation there it was agreed to. It is in no sense a limitation upon the size of the works to be built nor even an expression of opinion of the capacity to be adopted.

There can be no reasonable doubt in the mind of anyone as to the supply of water for a reservoir of this capacity. Given the capacity, the filling of the reservoir will result as a matter of course and physical necessity.

The rights to the use of the water in the lower basin are in no way dependent upon the construction of this or any other storage. The clause in question affects only rights to the direct diversion of low-water flow. The apportionment of water between the basins and the

guaranty of quantity by the upper States have no relation to this situation, and whether storage is or is not provided, whether or not reservoirs fill with silt, the apportionment and mutual obligations as to division of water remain unaffected and unimpaired.

Question 26. All of these questions have been asked primarily with a view to obtaining first-hand information for the benefit of the Legislature of the State of Arizona, which now has the Colorado River compact under consideration. Any further observations that you may care to make will, therefore, be appreciated.

It seems to me a primary fact that the legislative action necessary for appropriations from Congress cannot be secured nor construction work established at any point unless an equitable division of the waters of the Colorado River is first accomplished. There are only two methods of doing this; one is by compact and the other is by litigation. If this compact is not ratified it is necessary to start the process all over again, and I can see little hope of any more constructive basis of handling the problem than this compact already embraces.

The minor objections to the compact are generally based on exploitation of theoretical figures, without a full appreciation of the physical facts that govern the flow of the Colorado River. I have found that careful consideration of these physical surroundings of the river dissipate fear whenever they are carefully inquired into.

It is to be remembered also that until the dams are constructed the present flood menace will continue to threaten the Yuma project, the Imperial Valley, and other Arizona and California territory adjacent to the river on its lower reaches.

Appendix 206

**THE COLORADO RIVER COMPACT:
COMMENTS BY A. P. DAVIS, COMMISSIONER OF
RECLAMATION**

(Extract from the Congressional Record, January 30, 1923, pp. 2713-2717; part of extension of remarks by Hon. Carl Hayden, Representative from Arizona)

DEPARTMENT OF THE INTERIOR,
UNITED STATES RECLAMATION SERVICE,
Washington, January 30, 1923.

HON. CARL HAYDEN,
House of Representatives.

MY DEAR MR. HAYDEN: Reference is made to your letter of January 8, inclosing a list of questions relating to the Colorado River compact as it affects the State of Arizona.

Inclosed please find original and two carbon copies of our replies to the above questions.

Yours very truly,

A. P. DAVIS, DIRECTOR.

(Inclosures.)

Question 1. Referring to paragraphs (a), (f), and (g) of Article II of the Colorado River compact as to waters diverted from drainage area of the Colorado River and its tributaries in the States of Colorado, New Mexico, Utah, and Wyoming.

Question 1-A. How many acre-feet of water are now so diverted annually and where is such water being used?

Answer 1-A. The following table gives the present transmountain diversion from the Colorado River watershed, showing the average annual diversion in acre-feet:

Utah:	<i>Acre-feet</i>
Strawberry River to Provo River.....	4,500
Strawberry River to Spanish Fork River.....	78,000
Price River to Spanish Fork River.....	1,500
Virgin River to Pinto Creek.....	23,000
Total, Utah.....	<u>107,000</u>

Colorado:	<i>Acre-feet</i>
Colorado (Grand) to Cache la Poudre.....	15, 000
Fraser to Clear Creek.....	500
Blue to Tarryall.....	800
Eagle to Arkansas.....	1, 200
Cochetopa to Rio Grande.....	2, 500
	<hr/>
Total, Colorado.....	20, 000
	<hr/>
Total acre-feet existing diversions, upper basin.....	127, 000

Question 1-B. Where are the proposed projects which contemplate additional diversions from the upper basin and the estimated cost of the same?

Answer 1-B. In Senate Document 142, the following proposed diversions are listed, all in Colorado. No cost data are available:

Proposed diversion (acre-feet annually):	<i>Acre-feet</i>
Colorado (Grand) to Cache la Poudre (irrigation).....	10, 000
Fraser to Clear Creek or South Boulder (municipal and irrigation, Denver).....	110, 000
Williams Fork to Clear Creek (municipal and irrigation, Denver)....	50, 000
Blue and tributaries to South Platte (municipal and irrigation, Denver).....	100, 000
Eagle and tributaries to Arkansas.....	40, 000
Extensions to existing diversions, irrigation.....	7, 000
	<hr/>
Total, Colorado.....	317, 000

Question 1-C. What is the probable amount of water that will be diverted annually from the upper basin in the future?

Answer 1-C. It does not appear probable that any large increase will take place in diversions from the upper basin in the near future. The only one that can be reasonably included as at all "probable" at the present time would be the proposed Fraser River diversion of 110,000 acre-feet for the Denver City water supply. For purposes of computation, however, we have included the entire amount as listed above.

	<i>Acre-feet</i>
Present diversions.....	127, 000
Proposed diversions.....	317, 000
	<hr/>
Total.....	444, 000

Question 2. As to waters diverted from the drainage area of the Colorado River and its tributaries in the States of Arizona, California, and Nevada.

Question 2-A. Is any other such diversion proposed except into the Imperial and Coachella Valleys?

Answer 2-A. No data are at hand in regard to any proposed diversion from the drainage area of the Colorado River in the States of

Arizona, California, or Nevada unless the Imperial Valley diversion be so considered.

Question 2-B. How many acre-feet of water are now being used annually in the Imperial Valley?

Answer 2-B. The present annual diversion of the Imperial Valley Canal is given as follows:

Imperial irrigation district system:	<i>Acre-feet</i>
United States land.....	1, 597, 000
Mexican lands.....	540, 000
Main canal waste.....	580, 000
Losses in Alamo Channel.....	173, 000
Total diversion.....	2, 890, 000

Question 2-C. How many acre-feet of water will be required to irrigate all of the lands that it is feasible to bring under cultivation in the Imperial and Coachella Valleys?

Answer 2-C. Net ultimate acreage in Imperial irrigation district in the United States and Coachella Valley is given in Senate Document 142, page 48, as 785,000 acres, and, using the duty of water stated in that report, the total requirement would be 3,400,000 acre-feet.

Question 2-D. What is the estimated cost of the All-American Canal and other works for the irrigation of these lands?

Answer 2-D. Senate Document 142, page 86, gives estimated total cost of the All-American Canal and other works as \$49,191,000.

Question 3. What are the present, the probable, and the maximum possible number of acre-feet of water that may be used for irrigation from the Colorado River system in each of the four States of the upper division?

Answer 3. The following table answers the question, the quantities being in acre-feet:

Use of Colorado River, upper basin

Upper basin	Acreage irrigated, 1920	Consumption of water	New acreage	Consumption of water	Total acreage	Total consumption of water
Colorado.....	740, 000	1, 184, 000	1, 018, 000	1, 527, 000	1, 758, 000	2, 711, 000
New Mexico.....	34, 000	54, 400	483, 000	724, 500	517, 000	778, 900
Utah.....	359, 000	574, 400	456, 000	684, 000	815, 000	1, 258, 400
Wyoming.....	367, 000	587, 200	543, 000	814, 500	910, 000	1, 401, 700
Total.....	1, 500, 000	2, 400, 000	2, 500, 000	3, 750, 000	4, 000, 000	6, 150, 000

Of the above "new acreage" total of 2,500,000 acres, it is estimated in Senate Document 142, page 33, that a total of 1,008,000 acres will be irrigated in the upper basin in the near future.

Question 4. If the maximum quantity of water is diverted for irrigation in the upper basin, how much of it will return to the river by seepage and drainage and be available for use at Lee Ferry?

Answer 4. Above figures are based upon an average figure for "consumptive use"; that is, diversion minus return flow, and are believed to be large enough to include evaporation from local reservoirs which will be used for irrigation. They therefore represent the net reduction in the flow of the river to be anticipated under the assumed conditions.

Question 5. After deducting the maximum quantity of water that may be diverted out of the upper basin and the maximum amount that may be consumed by irrigation and domestic uses, what is your estimate of the average annual run-off from the upper basin in acre-feet at Lee Ferry?

Answer 5.—

	<i>Acre-feet</i>
Mean discharge at Lee Ferry, 1903-1920 (assumed same as Laguna).....	16, 400, 000
Past depletion, upper basin, 1,094,000 acres (average) at 1.54 acre-feet per acre.....	1, 700, 000
	<hr/>
Reconstructed river at Lee Ferry.....	18, 100, 000
Upper basin:	
Maximum consumption.....	6, 150, 000
Diversion out of basin.....	444, 000
	<hr/>
	6, 590, 000
	<hr/>
Remaining flow at Lee Ferry.....	11, 510, 000

Question 6. If the same maximum deductions are made from the quantity of water in the Colorado River when that stream had the least recorded annual flow, how many acre-feet would remain for use in the lower basin?

Answer 6. The above maximum deductions could not be made when the Colorado had its least recorded annual flow because sufficient water would not be available in the tributaries for maximum diversion. Assuming that the consumptive use would be reduced 25 percent during this shortest year, and taking the flow at Lee Ferry, the same as that at Laguna, as given on page 5 of Senate Document 142, we have—

	<i>Acre-feet</i>
Discharge at Lee Ferry, 1902.....	9, 110, 000
Depletion, 1902 (865,000 acres at 1.54), by 75 per cent.....	770, 000
	<hr/>
Reconstructed river at Lee Ferry, 1902.....	9, 880, 000
Maximum consumption, upper basin, 1902 (75 per cent of 6,590,000).....	4, 940, 000
	<hr/>
Available at Lee Ferry, 1902.....	4, 940, 000

This indicates that under the compact the flow of the lowest year would be available in approximately equal portions for the use of each basin.

Question 7. If a reservoir of 30,000,000 acre-feet capacity had been in existence at that time, how much water would have been carried over from previous years to aid in meeting any deficiency?

Answer 7. Plate XII-A, Senate Document 142, page 30, shows that starting in 1899 with a 26,400,000 acre-foot reservoir half full, the reservoir would have filled in 1900 and again in 1901, and the full demands for irrigating 1,500,000 acres below could have been met not only through 1902 but through the succeeding low years of 1903 and 1904. In addition, sufficient water would have been available for discharge through the months of low irrigation demand to maintain a year around output of 700,000 horsepower.

Question 8. How many acres are now being irrigated; what additional areas can be irrigated from the main Colorado River, and what is the estimated cost of the reclamation of the lands in Arizona within the projects that have been investigated by the Reclamation Service up to the present time?

Answer 8. Senate Document No. 142, gives the following figures for lands irrigated in Arizona, 1920, from the main stream of the Colorado:

<i>Irrigated 1920, Arizona</i>	
Main stream:	<i>Acres</i>
Parker project.....	4, 000
Yuma project.....	46, 000
	<hr/>
Total, 1920.....	50, 000

<i>Additional irrigable, Arizona</i>	
Main stream:	<i>Acres</i>
Cottonwood Island.....	2, 000
Parker project.....	106, 000
Mojave Valley.....	26, 000
Yuma project.....	75, 000
Cibola Valley.....	16, 000
Isolated tracts.....	4, 000
	<hr/>
Total additional.....	229, 000

Cost data for most of the above projects are not available in sufficient detail to be of value. An engineer of the Indian Service estimated in 1920 a cost of \$78 per acre for the Parker project, exclusive of storage, flood control, and power (S. Doc. No. 142, p. 55). Gravity lands on the Yuma project are subject to a construction charge of \$75 per acre.

Question 9. I would like to have the same information as to the projects in California on the Colorado River above the Laguna Dam.

Answer 9. Senate Document No. 142 gives the following figures:

	Irrigated, 1920	New acre- age	Total
	Acres	Acres	Acres
Mojave Valley.....	1,000	1,000	1,000
Chemehuevis Valley.....	2,300	2,300	2,300
Palo Verde Valley.....	35,000	43,000	78,000
Palo Verde Mesa and Chuckawalla Valley.....		62,000	62,000
Total.....	35,000	108,300	143,300

Question 10. Is it true that, if the Colorado River compact is adopted, all of the water that Arizona will ever get out of the main river will be enough to irrigate only 280,000 acres of land, of which 130,000 acres are now embraced in the Yuma project and 110,000 acres in the Parker project?

Answer 10. The Colorado River compact does not attempt to divide the water of the river between individual States. Except for rights already initiated by California and Nevada, there is nothing in the compact that will prevent the State of Arizona from taking from the river all the water that it can put to beneficial use. Rights already initiated will have to be respected in any event, and future development under the compact will be undertaken only in competition with the two States named, and with the cooperation instead of against possible opposition of the States of the upper basin. The present and prospective use of water in the lower basin is estimated, as follows:

Use of Colorado River, lower basin

Lower basin	Acreage irrigated, 1920	Consumption of water, acre-feet	New acre- age	Consumption of water, acre-feet	Total acre- age	Total consumption of water, acre-feet
Arizona.....	58,000	290,000	229,000	860,000	287,000	1,150,000
California.....	450,000	2,250,000	490,000	1,540,000	940,000	3,790,000
Nevada.....	5,000	20,000	35,000	140,000	40,000	160,000
Total, Main River.....	513,000	2,560,000	754,000	2,540,000	1,267,000	5,100,000

From this the surplus available for any further development that may be found feasible may be deduced as follows:

Mean annual flow at Lee Ferry after deducting all future uses in the upper basin (see question 5).....	Acre-feet 11,510,000
Total visible demands.....	5,100,000
Surplus.....	6,410,000

This would irrigate nearly 2,000,000 acres of land in addition to the acreage figured above, and since water must flow downhill, and since a reservoir at Boulder Canyon of the size proposed will completely control the stream at that point, it only remains to find the land to which this water can be profitably applied.

Question 11. What information have you with respect to the Arizona High Line Canal plan?

Answer 11. We have asked our field engineers for report on Arizona High Line Canal, which has just been received as follows:

The Arizona High Line Canal as outlined more recently contemplates—

A storage reservoir at or near Glen Canyon. Its capacity has not been stated in definite terms.

A second dam at Boulder Canyon to be built to elevation 1,350 feet, or 1,375 feet, or a dam at the lower end of the Grand Canyon of a less height that will raise the water to the same elevation.

A tunnel from the Detrital Sacramento Wash through the Black Mountains some 15 or 20 miles in length which would come out on the western side of the Black Mountains in the general region of Eldorado Ferry, water to be delivered at the end of the tunnel at an elevation not less than 1,325 feet.

A large canal, extending southward and generally parallel with the Colorado River, following along the west side of the Black Range, the greater portion of which would be in tunnel from a point back of Eldorado Ferry to Mount Davis. These tunnels may aggregate another 15 miles or more; thence an open canal crossing a detrital wash country with many deep washes southward along the Blue Ridge and Black Mountains, crossing Sacramento Wash and the main line of the Santa Fe Railroad a few miles from Franconia; thence south and southwesterly toward the Colorado River, where it would pass around the west face of the Chemehuevi Mountains and the Williams Mountains; thence easterly along the north side of the Williams River to a crossing on the Williams River. Through this region there would be more or less tunnel work.

A crossing of the Williams River either by a high dam in that stream where the river is confined in a box canyon, through the Rawhide Mountains, or by a high aqueduct or a large siphon. Some surveys are being conducted at the present time by the Arizona Engineering Commission to ascertain data on this crossing. The canal would then run westerly along the south side of the Williams River through the Buckskin Mountains, tunneling through the Osborne Pass; thence in a general southerly direction through the Cactus Plain to the general region of Bouse.

The first tracts of tillable land of any consequence encountered would be that lying within what is commonly called the Bouse Valley. The proposed canal line would probably cross the Phoenix branch of the Santa Fe Railroad between Bouse and Vicksburg. What the irrigable area of these valleys amounts to is as yet an undetermined quantity.

The main canal would continue in a southeasterly direction, passing to the south of the Little Harqua Hala Mountains through a pass that has been estimated to be from 16 to 25 miles in length. This part of the construction would be a deep cut, the depth of the cut depending upon the elevation at which a canal would reach that point. Before reaching this cut the canal would bifurcate, some of the water being taken south and southwesterly to irrigate other possible

areas. It is planned that the water would finally reach Centennial Wash. The south and southwesterly branch would pass between the S. H. Mountains and the Little Horn Mountains to the Palomas Plain, from which point it would be on the Gila watershed and would be conveyed to other lands on the Gila.

These several branches would bifurcate, carrying water to different valleys, some of which contemplate considerable pumping lifts. The acreage under this possible system is impossible to state, as up to the present time it is nothing more than the roughest kind of a guess, and one upon which no figures can be given. There are not sufficient data at hand to make an estimate as to the cost of constructing such a large canal. The Arizona engineering commission is at the present time trying to ascertain the elevation of certain controlling points, and it is hoped that in the near future the commission will be able to give some idea as to the practicability or impracticability of conducting any further investigations as to the merits or demerits of such a scheme.

Question 12. It has been said that the Arizona High Line Canal project is just as feasible as the Columbia River Basin gravity project recently approved by Gen. George W. Goethals. Please compare the main features of these two projects.

Answer 12. As far as this office is advised no surveys or detailed estimates are available from which any statement of the construction quantities or costs involved in the main features of the Arizona High Line Canal can be even approximated. No comparison is therefore now possible.

Question 13. In his report on the Columbia River Basin project, General Goethals discusses a pumping plan which contemplates building a dam 285 feet high across the Columbia River near the head of the Grand Coulee and using the energy thus stored to operate 17 pumps, each with a capacity of 1,000 second-feet, which will raise the water 450 feet to an artificial lake, whence the water flows by gravity to the basin area, where 1,403,000 acres may be irrigated. The total estimated cost of this pumping project is \$241,487,285, or \$172 per acre, and the annual operating cost is estimated at \$1.56 per acre.

It has occurred to me that, as an alternative to the upper and more expensive part of the Arizona High Line Canal plan, consideration might be given to a pumping project, the essential features of which would be as follows:

A. Utilize the power site about 5 miles above Parker, for which application has been made by Beckman and Linden, by constructing a dam about 75 feet high for the generation of hydroelectric energy. If this dam will not provide enough power, after the flow of the Colorado River is regulated, then supplement the same by power developed in the Grand Canyon.

B. Raise the water about 900 feet by pumping from the Colorado River through a conduit or conduits about 15 miles long up the Osborne Wash to the level of the proposed Arizona High Line Canal, from whence it would flow by gravity as proposed in the original scheme.

I shall be pleased to receive your comments on this idea.

Answer 13. As to this, our field engineers report as follows:

This plan appears infeasible, but as a possibility the Arizona Engineering Commission has considered and is considering the possibility of a diversion at this point to divert water for the lands lying along the Colorado River south of the dam site spoken of above, with the possibility of pumping water therefrom to moderate lifts. From this dam site south to a point about opposite Lighthouse Rock, the topography is such that a canal might be constructed. At or near Lighthouse Rock it might be possible to raise water in the distant future some 100 or 150 feet, passing through the Trigo and Chocolate Mountains, reaching the plain lying east of Castle Dome at an elevation that certain lands lying on the lower Gila might be served. The acreage and the difficulties encountered in this are not definitely known and the whole proposition only stands out as a remote possibility of the development of lands on the extreme lower Gila.

Question 14. While I fully realize that the Colorado River compact makes no reference to the location of storage reservoirs on that stream, yet, the subject is of great interest to the people of Arizona. I shall, therefore, appreciate it if you will make a brief comparison of the Bulls Head, Black Canyon, Boulder Canyon, Diamond Creek, and Glen Canyon dam sites.

Question 15. For the same reason, I would like to have a summary of the available information relative to the Sentinel, San Carlos, and Solomonville dam sites on the Gila, and the Horseshoe and Camp Verde dam sites on the Verde River.

Answers 14 and 15. The following table gives the data available in this office relative to these dam sites.

Name	Storage capacity (acre-feet)	Estimated cost ¹	Height of dam (feet) ²	Width at base (feet)	Depth to bed-rock (feet)	Character of rock in walls	Horse-power developed
San Carlos.....	1, 600, 000	\$9, 792, 763	249	222	20	Quartzite or quartzitic sandstone.	6, 500
Horseshoe.....	233, 000	1, 909, 000	166	200	30	.....	³ 20, 000
Camp Verde.....	421, 000	1, 701, 300	210	.....	25	Sandstone.....	.....
Solomonville-Guthrie.....	225, 800	.....	140	.....	.....	.....	.....
Sentinel.....	2, 200, 000	4, 250, 000	130	.....	(⁴)	Basalt.....	.....
Bulls Head.....	2, 000, 000	.....	155	.....	.....	Granite.....	⁵ 341, 000
Boulder Canyon.....	{ 31, 400, 000	{ 55, 000, 000	{ 594	{ 665	{ 140	{ do.....	{ 700, 000
	{ 26, 500, 000	{ 50, 000, 000	{ 558	{	{	{	{ 600, 000
Black Canyon.....	{ 31, 400, 000	{	{ 590	{	{ ⁶ 123	{ Volcanic breccia; la-	{ 700, 000
	{ 26, 500, 000	{	{ 555	{	{	{ tite, and andesite.	{ 600, 000
Diamond Creek:	.....	.....	.....	.....	.....	.....	.....
Ultimate.....	1, 250, 000	.....	420	.....	45	Granite.....	{ 935, 000
Present.....	340, 000	12, 000, 000	255	380	45	.....	{ 200, 000
Glen Canyon.....	18, 000, 000	.....	500	.....	.....	Sandstone.....	{ 500, 000

¹ Costs based on preliminary estimates and incomplete information; subject to revision in all cases.
² Above low-water level or stream bed.
³ Developed at drop 20 miles below dam.
⁴ Foundation is lava or cemented gravel underlain by sand and silt to a depth of at least 200 feet.
⁵ Assuming equated flow.
⁶ Drilling not completed.

NOTE.—Average annual net evaporation loss measured at Roosevelt is 60 inches, and this figure has been the basis of evaporation estimates for most of the reservoir studies in this region.

Question 16. It has been said that the Colorado floods have never initiated any serious damage to the Yuma project or the Imperial Valley but that the Gila River constitutes the principal menace; that the only method of curbing the Gila is an adequate levee system, which can be constructed in 18 months at one-fifth the cost of the Boulder Canyon Dam. Will expensive levees have to be maintained on both sides of the Colorado River below Yuma after a large flood-control dam has been constructed on the main Colorado River?

Answer 16. A dam at Boulder Canyon will control all the floods on the main river capable of doing any damage at Yuma except those from the Gila, and it is the only reservoir site on the river of sufficient capacity which is below the sources of all these floods. Until the Gila floods are otherwise controlled it will be necessary to maintain levees to prevent damage from the floods on this stream. As is well known, however, floods from the Gila are of flashy character, and while they may be of sufficient magnitude to inflict some damage, they will subside as quickly as they arise and the days and weeks of night-and-day struggle with the river during each recurring Colorado flood will be a thing of the past. Even if a Gila flood should be experienced of sufficient magnitude to break into the Imperial Valley, its quick subsidence would leave the breach practically dry for repair if the water from the main river could be cut off or regulated at Boulder Canyon.

The annually recurring menace to Yuma and the Imperial Valley against which they are without defense at present is that a Gila flood may come down on top of an early Colorado rise or that breaches made by Gila floods may open the way for the summer floods of the Colorado to break into Imperial Valley. The breaks of 1905-6 and the flood of January 1916 illustrate the possibilities of such a combination.

Question 17. It has been said that if the depth to bedrock for the foundation of the proposed dam at Black Canyon is found to be over 100 feet, as it is reported to be at Boulder Canyon, that it might be more economical to build the Glen Canyon Dam first so as to have the benefit of the regulated flow from the upper reservoir during the construction of the deep and difficult foundations either at Black or Boulder Canyons. What are the results thus far obtained in prospecting for bedrock at these dam sites?

Answer 17. The maximum depth to bedrock at Boulder Canyon Dam site is about 140 feet below low water. Foundation and walls are of granite of excellent quality for a dam foundation. At site of the upstream cofferdam a line of drill holes shows a maximum depth of only 36 feet to bedrock. It is not considered advisable, however, to move the dam itself upstream to this point, as both the condition

and the topography of the side walls at this point are much less favorable than at the site under consideration.

The greatest depth to bedrock found so far at Black Canyon is 123 feet. Sufficient borings have not yet been made to develop this site completely, and work is still in progress.

The foundation and walls at Black Canyon are described as a hard volcanic breccia, overlaid by flows of latite and andesite. This formation as exposed in the canyon walls is entirely suitable for the construction of a high masonry dam, and unless future borings disclose unexpectedly inferior material in the foundation or excessive depth to bedrock, the site should be entirely satisfactory for the construction of a high masonry dam.

The rock in the abutments at the Glen Canyon site is a soft reddish sandstone, unsuitable for building stone or for either coarse or fine concrete aggregate, but probably of sufficient strength to support a concrete dam. Foundation conditions have not been fully tested, the single drill hole then being sunk having on December 15, 1922, reached a depth of 60 feet in the fine sand and silt of the river bed, without having reached bedrock. This drill work is being done by the Southern California Edison Co., and we have no later information as to the progress of this drilling.

As to the economy of building Glen Canyon Dam before one at the Boulder or Black Canyon site, attention is called to the fact that Glen Canyon is too far from power markets now available to be of value for power production for many years. For any given capacity up to complete regulation of the stream the height of a dam above low water at Glen Canyon must be greater than one at Boulder Canyon. Taking into consideration the greater distance from sources of supplies and labor, and other unfavorable conditions, a dam at Glen Canyon cannot cost less than a dam of equal capacity at Boulder Canyon, and will produce absolutely no direct financial return for many years.

The amount estimated for river control and diversion during construction at Boulder Canyon is \$3,500,000. If the Glen Canyon dam cost \$50,000,000, as estimated for Boulder Canyon in the table, one year's interest at 6 per cent would practically absorb the savings on the Boulder Canyon dam, and even assuming for the sake of argument that it would cost only \$25,000,000, the saving would be swallowed up in two years. Under most favorable conditions power returns could not be realized in any considerable amount at Boulder Canyon in less time than that.

Question 18. The Interior Department appropriation act for the next fiscal year contains an item making \$100,000 immediately available for further engineering investigations on the Colorado River by the United States Reclamation Service. Is it your intention to expend any part of this sum in ascertaining the depth to bedrock and in obtaining other information relative to the Glen Canyon dam site?

Answer 18. It had been our intention to undertake the drilling of the Glen Canyon site and push it to a conclusion next winter, beginning as soon as the subsidence of the summer floods would permit. If, however, the work of the Southern California Edison Co., now under way at this site, results in satisfactory development of foundation conditions, it will not be necessary for the Reclamation Service to put in a drill outfit there.

Question 19. Any further comment that you may care to make relative to the approval of the Colorado River compact by the Arizona State Legislature will be appreciated.

Answer 19. The Colorado River compact provides that the lower basin shall be guaranteed an average of 7,500,000 acre-feet of water annually from the upper basin and all of the yield of the lower basin, and that any water not beneficially used for agricultural and domestic uses shall likewise be allowed to run down for use below. This provides for all known uses of water in the lower basin and a very large surplus for such uses as may develop in the future. The greatest merit of the compact from the standpoint of Arizona is that it changes the attitude of the upper States from one of antagonism to one of friendship and advocacy of storage in the lower basin. If this fair offer is now rejected, the opposition of the upper basin to storage for the benefit of the lower basin will have stronger moral ground than ever, and the attitude of antagonism will be accentuated. This would accord with the wishes of those who are opposed to the development of the river and are opposing the compact. Arizona would thereby be placed in a position of preferring contention to development and her interests would suffer accordingly.

Appendix 207

**THE COLORADO RIVER COMPACT:
STATEMENT BY W. S. NORVIEL, COMMISSIONER
FOR ARIZONA**

(Reprinted from *Arizona Mining Journal*, January 15, 1923, p. 34
et seq.)¹

There comes a time in the lives of men when a choice must be made of a course to pursue. Perhaps a choice of a profession or some vital principle which will affect the life work or career of the individual are questions that come, and each must choose for himself.

There comes a time when every growing, progressive city or state must choose the course for it to pursue on some vital question which will make for good or ill as the decision is correct or ill advised.

The state of Arizona is now confronted with such a question. No proposition so vital to the welfare and future development of the state has ever been presented to the people for settlement as that which is now presented by the Colorado river compact.

A "compact" was the expected result of legislative action in each of the seven states in the Colorado river basin authorizing and directing the appointment of a representative of each state to form a commission to negotiate a compact respecting the use of the waters of the Colorado river and its tributaries. Such a compact or agreement between two or more states is not permissible except by approval of the United States, and as the United States is also vitally interested in the Colorado river, legislative action of a similar character was taken by the Congress authorizing the President to appoint a representative on the commission to represent the interests of the United States.

An intensive study of the Colorado river and the basin was taken up immediately the members of the commission were appointed, and running through the period of practically two years; a series of 27 meetings were held by the commission during that period of time. So far as the writer has been able to learn, every bit of information known and of record in government departments and elsewhere was made available to the members of the commission. Of the meetings mentioned, a number of them were open meetings held in the different states interested, that the commission might obtain the viewpoint of the citizens on the questions at issue, and these were made matters of record.

¹ Apparently no formal report was submitted to the Arizona Legislature.

The United States geological survey and the United States reclamation service have been exceedingly helpful, the former in collecting and collating the water supply in detail of the whole basin as well as an analysis of the needs of the upper and lower basins; the latter in furnishing an accurate statement of present irrigated acreage and use of water in each state, as well as the prospective or irrigable acreage and need of water in each state; as well also the results of investigations as to return flow from irrigation, losses by evaporation and seepage.

A careful, searching study of the Colorado river and tributaries will disclose a varying condition of flow from as low as approximately 9,000,000 acre feet to as high as 26,000,000 acre feet in a year measured at Yuma. This, however, is what is left in the river after all diversions have been made above that point, including all diversions from the Gila and tributaries, and also from the Colorado for the Yuma project, and from which is taken only what is diverted by the Imperial valley and Mexico, approximately 2,250,000 acre feet per annum in California and 950,000 acre feet in Mexico, the balance wasting into the gulf.

The study discloses the Colorado river basin is divided by nature into two basins, which may be called the upper and lower basins, separated by many hundreds of miles of mountains and high, rocky plateaus, an uninhabited country, through which the river flows in deep canyons, in some places almost a mile deep; the two divisions or basins differ materially in climate, in farming conditions, in economic and living conditions. The upper basin has a comparatively high altitude, a cool climate, a short growing and irrigating season, and portions of it have a heavy precipitation, while the lower basin is for the most part low in altitude, a warm, dry climate, and a long growing season.

The study discloses the drainage in square miles in the states and the production of water to the river as shown by the following interesting table prepared by the United States geological survey:

	<i>Square miles</i>	<i>Acre feet of water</i>
Wyoming.....	18, 000	2, 300, 000
Colorado.....	39, 000	11, 800, 000
Utah.....	40, 000	2, 300, 000
New Mexico.....	23, 000	1, 260, 000
Arizona.....	113, 000	740, 000
Nevada.....	12, 000	negligible
California.....	4, 000	negligible

From the above table it will be seen that the first four states named produce 17,600,000 acre feet of water per annum to the river.

The first principle of the Colorado river compact is a division of the basin into two divisions in accord with the division by nature,

making the division point at Lee's Ferry, which is about midway of the natural dividing mountains; that being the only practical accessible point for hundreds of miles, and at that point there is now established a first-class gauging station for the measurement of the water of the river, and is, too, one of the most promising dam sites on the river; putting the states of Wyoming, Colorado, Utah and New Mexico in the upper division and the states of Arizona, California and Nevada in the lower division. In the upper basin, those portions of all the states that drain into the river above Lee's Ferry and in the lower basin those portions of all the states that drain into the river below Lee's Ferry.

The U. S. reclamation service report: "Problems of Imperial Valley and Vicinity," shows there are irrigated in the upper basin 1,526,000 acres, consuming approximately 2,400,000 acre feet of water per annum; that the feasible irrigable new acreage in the upper basin is 2,500,000, with a need for an additional supply of water of 3,750,000 acre feet per annum, or an ultimate acreage in the upper basin, present and prospective, of 4,000,000 acres, with a consumptive use of water of 6,250,000 acre feet, with a possible intermountain diversion of 350,000 acre feet, making a total consumptive use in the upper basin of 6,600,000 acre feet per annum, foreseen at present.

That the irrigated acreage in the lower basin corrected to date from the Colorado river direct is 513,000, using 2,560,000 acre feet of water per annum; that the known new acreage feasibly irrigable in the lower basin is 754,000, with a demand for 2,540,000 acre feet, making a total of 1,267,000 acres, and a demand for 6,100,000 acre feet of water per annum.

Therefore, the second principle in the compact, the division of the beneficial use of water in the two basins, 7,500,000 acre feet per annum to each basin. As the river is not regular in its flow, great floods come down at certain seasons of the year which are a constant menace to the Palo Verde and Imperial valleys in California and the Yuma valley in Arizona, it is recognized that the river must be controlled for the double purpose of protecting the lower valleys from the menace of flood and storing the water to extend the reclamation of lands, for without storage the natural flow during the irrigating season is barely sufficient to supply the present demand and in some dry years there is not enough; then, too, as we have said, the annual flow fluctuates from 9,000,000 acre feet to 26,000,000 acre feet, and the water of years of abundance must be stored as a reserve against those of famine and the flow regulated as near as possible.

A study of the river discloses an average flow past the station at Yuma of 17,400,000 acre feet per annum; this is below all diversion except the Imperial valley; it is also below all inflowing streams. The station at Laguna dam shows 16,400,000 acre feet per annum. These

figures being the average over the period of 1899 to 1920, both included, a period of 22 years. However, during the period of 1905 to 1920, both years included, Yuma shows an average of 18,244,444 acre feet and Laguna 17,218,000 acre feet per annum. Adding to the amount disclosed at Yuma the amount diverted and used above, including that from the streams in Arizona, would make the production of the basin between 22,000,000 and 24,000,000 acre feet per annum, reckoned from that station.

Further calculations and deductions will disclose practically the same amount of water passing Lee's Ferry as Laguna, each approximately 1,000,000 acre feet less than at Yuma. Further, there is an inflow between Lee's Ferry and the measuring station at Topock, which would be practically the same as at Boulder canyon, of 2,500,000 acre feet; the principal streams which must furnish this are Little Colorado, Kanab creek, Cataract, Diamond creek and the Virgin river. This amount of water is lost by evaporation, percolation or seepage and diversion before it reaches Laguna. That amount, however, is present at or near the Boulder canyon, for use from there if the river can be stabilized and controlled so as to reduce the waste to a minimum.

The Topock station shows about 1,500,000 more water passing there than passes Yuma, or 2,500,000 more than passes Laguna. The 1921 record shows the following:

Yuma, 19,300,000; Topock, 21,500,000, and for 1922: Yuma, 17,600,000; Topock, 19,000,000; Lee's Ferry (the first year), 16,100,000. Now that we have stations at Lee's Ferry and at Grand Canyon, a few years will verify our deductions or show an error in the calculations.

There is, therefore, approximately 17,000,000 acre feet per annum passing Boulder canyon. There is also 16,500,000 passing Lee's Ferry each year on an average. Under the compact the upper states are allotted 7,500,000 acre feet, of which 2,500,000 is already used, leaving 5,000,000 more to be used; that is 1,250,000 acre feet to each of the upper states, if they can make use of that much, and the best-informed men say it will be nearly a century before they will be able to use that much more water, if ever. For the sake of argument, suppose they take all of the 5,000,000 acre feet from now on, there will be left in the river at Lee's Ferry 11,500,000 acre feet per annum on the average. With no more diversions than we now have that amount will show up at Laguna and a million more acre feet will be added at Yuma.

Nevada's wants from the river are nil. California will ultimately need less than 4,000,000 acre feet to reach her limit. If the upper states could take the whole allotment and Arizona waited until California satisfied her needs, there would still be in the river 3,500,000

of water allotted to the lower basin for Arizona out of the 7,500,000 from the Colorado. In addition there would be the difference between 19,000,000 and 7,500,000 plus 5,000,000, which would leave 6,500,000 unallotted and subject to appropriation under the law of appropriation. California having been fully satisfied, there is then 10,000,000 acre feet in the river for Arizona, if she can use it, 3,500,000 under the compact and 6,500,000 unallocated.

No rights in Mexico are recognized in the compact. There is at this time, however, approximately 950,000 acre feet of water used in Mexico. The only treaty now in force between the United States and Mexico pertaining to the Colorado river is the Gadsden treaty of 1853, and that pertains only to the rights of navigation, wherein the citizens of the United States are granted the right of navigating the river between the United States and the gulf. There was no attempt to create or reserve to Mexico or her citizens any rights or to impose on the United States or their citizens any restraints with respect to the use of water for irrigation, although rights of property were secured to all Mexicans who had a claim upon the same. Though some writers of international law say that in a treaty of peace, such as the Treaty of Guadalupe Hidalgo, of 1848, which first fixed the rights of the two nations relative to the Colorado river, a strict construction should be placed upon the terms of the treaty against the dominant nation, but nothing should be implied. The Gadsden treaty was not a treaty of peace and the terms are clear. There is, therefore, no treaty right reserving to or granting to Mexico a right to irrigation water from the Colorado. Nor is there any law or relationship between the two countries binding the United States to recognize a priority of appropriation in Mexico. The United States as a distinct sovereignty may take and use all the water when she will and break no law or obligation.

As a matter of comity the United States may, and probably will, enter into a treaty with Mexico regarding irrigation water, but certainly not to the extent of granting rights to water needed for irrigation in the United States.

In the treaty between the two countries respecting irrigation water for Mexican lands from the Rio Grande, signed by Elihu Root and Joaquin D. Casasus, this expression appears:

The delivery of water as herein provided is not to be construed as a recognition by the United States of any claim on the part of Mexico to the said waters.

And further:

The United States, in entering into this treaty, does not thereby concede expressly or by implication, any legal basis for any claims heretofore asserted or which may be hereafter asserted by reason of any losses incurred by the owners of land in Mexico due or alleged to be due to the diversion of the waters of the Rio Grande within the United States.

This being our criterion, we may, if we can, divert and use all the water of the Colorado in the United States, and establish thereby an absolute right. Any water that crosses the international boundary line may be used by the Mexican people as they see fit, subject to the rights of navigation by United States citizens to and from the Gulf of California.

The third principle established by the compact was to fix a time when the remainder of the water unallotted and unused might be apportioned.

The fourth principle fixes a preference in agricultural uses over power, the social over the industrial, the building of homes out in the open country over the centralizing of people into congested tenements. Nor will a careful analysis show that this will materially lessen the amount of power that can be developed. The river will still furnish all the power that can be used.

The fifth principle, that the upper states shall not withhold water that cannot be reasonably applied for agricultural uses. Nor shall the lower states demand such water for a like use.

The sixth principle confirms vested rights as fixed and unchanged.

The seventh principle permits any state the right to appeal to court to enforce the terms of the compact.

The compact binds the states to assist each other, or at least not to hinder each other in the construction of any project and in financing the same, whether from the public treasury or by private capital. It locates no dam site as the place for work to begin. It proposes no project, either for power or irrigation. It merely fixes rights in the two basins to a certain safe limit and removes all other objections, permitting each state or group of states to develop its or their own projects as best they may so long as they conform to the very broad terms of the compact.

Appendix 208

**THE COLORADO RIVER COMPACT:
STATEMENT BY RICHARD E. SLOAN, LEGAL AD-
VISER TO THE COLORADO RIVER COMMIS-
SIONER FOR ARIZONA**

(Reprinted from Arizona Mining Journal, January 15, 1923)¹

Much of the unfavorable criticism against the Colorado river compact is directed not to what it contains but to what it does not contain. This is founded upon a misunderstanding of the powers of the Colorado river commission as set forth in the various acts of the legislatures of the seven states signatory to the compact and the act of congress which created the commission. Under these various acts it was made the sole business of the commission to adjust and settle equitably between the seven basin states conflicting differences with respect to the use of the waters of the Colorado river that may hereafter in the absence of such adjustment and settlement give rise to sectional strife and litigation. Its purpose was not to lay out any plan of development of the river, but to clear the way for that development by removing obstacles that the interstate character of the river presented to any program looking to the storage of the waters of the river on a scale commensurate with the present needs for protection of life and property from floods and with the future demands of agriculture and power throughout the entire basin.

It was not the business of the commission to determine any engineering question involved in this development. The question whether one or more great storage dams should be built at Boulder canyon, at Glen canyon, or at some other place was wholly apart from the work of the commission and such questions are left to be determined by the federal government or by whatever agency they are to be built.

Only such matters as pertain to the interests of all the contracting states are attempted to be adjusted by the pact. Questions that apply to only two of the states or less than all of the states are left to be settled by separate agreement, provision for which is made in Article VI of the compact.

The compact deals primarily with two major subjects of mutual interest to all the signatory states. These are, first, the preferential uses of water, and, second, an allocation of the rights to the beneficial

¹ Apparently no formal report was submitted to the Arizona Legislature.

consumptive use of water with the view of permitting the largest development throughout the basin without creating cause for interstate strife and litigation.

The preferential uses recognized by the pact are agriculture, domestic (which is defined to include farming, stock growing, municipal, mining, industrial and other like purposes), power and navigation. Agriculture and domestic uses are placed on a parity and given the first place in the order of preferential right of use. This is in harmony with the law of our own state and also with the law of every state in the basin. It is in harmony with the prevailing sentiment of the people of this country. The commission, therefore in giving preference to agriculture and domestic uses over power merely recognized existing law and the overwhelming public opinion on the subject that lies back of that law. Power, therefore, is given second place in the order of preferential right of use. The compact also makes navigation subordinate to agriculture, domestic, and power uses. The purpose of this is to prevent serious embarrassment to the development of the river for agriculture, domestic and power uses should the Colorado river continue to be regarded in theory, although it is not in fact, a navigable river. This provision requires the consent of congress before it may become effective. It is expressly provided, however, that the disapproval of congress of this provision will not affect the other provisions of the compact.

The Colorado river basin within the United States embraces an area of 244,000 square miles. It includes portions of the states of Wyoming, Colorado, Utah, New Mexico, Nevada, California, and nearly the whole of Arizona. The compact divides this basin into an upper and lower basin. The upper basin comprises that portion of the watershed within and from which water naturally drains into the Colorado river above Lee's Ferry, which is located south of the Arizona-Utah line and below the mouth of the Paria river. The lower basin comprises that part of the watershed within and from which water naturally drains into the Colorado river below Lee's Ferry, together with the Imperial and Coachella valleys in California. While there is no great disparity in the sizes of the two divisions of the basin, there are certain marked differences in other respects.

Ninety-one percent of the water of the entire watershed has its origin in the mountains of Colorado, Wyoming, and Utah and not more than six percent comes from Nevada, Arizona, and California. Ninety-four percent, therefore, of the water that passes Yuma originates above the Arizona-Utah line. Again, nearly 1,000 miles of canyon separate the lands upon which water may be beneficially applied in the upper basin from the lands upon which water may be beneficially used in the lower basin. It is a physical fact that water may not be diverted for agricultural uses in Arizona by means of

works situated wholly within this state, for the river runs for its entire distance through the state in the Grand Canyon of Arizona. Again, there are marked differences between the conditions governing the use of the water of the river in the upper and lower basins. Climate and the physical conformation of the lands that may be irrigated limit and restrict such uses in the upper states. The lands there are all situated at high elevations, and the products, therefore, are such as may be grown only in a temperate climate. These lands for the most part are situated in narrow valleys and, while there are few comparatively large projects, the majority are relatively small. Of the water actually diverted a very considerable portion, varying, of course, as the conformation of the country varies, returns to the streams as return water. The duty of water in the upper basin averages about one and five-tenths acre-feet per acre per annum.

In the lower basin the lands that may be irrigated from the Colorado river are for the most part situated in large individual units or areas requiring diversion dams and other works of great magnitude and of great cost. The consumption of water per acre is high, due to an extreme aridity of climate and the long growing season. The duty of water in the lower basin is in the neighborhood of four acre-feet per acre per annum.

In view of this physical separation and diversity of conditions between the upper and lower basins the question naturally arises, Why should any controversy between the states of the two divisions ever arise? The answer to that question is important because it involves a consideration of the reasons for the creation of the Colorado river commission and for the compact. In general, the answer to the question is that while it is not certain that conflict may arise, there is, nevertheless, in the states of the upper basin, the fear that it will arise should there be any large works constructed on the lower river that shall have either as an incident or as a major purpose the development of power. The compact was not occasioned by the belief that there is an insufficient supply of water in the river if properly conserved for the reasonable needs of the entire basin for agriculture and domestic uses. The compact had its inception in the apprehension of the people of the upper states that great dams and storage works for river control, agriculture, and power might be built somewhere below the Utah line and that thereby priority of right may grow out of these works which will embarrass and curtail their own agricultural development. This fear is based upon the law of prior appropriation in its application to an interstate stream, a doctrine which has recently been recognized and applied by the supreme court of the United States in the case of *Wyoming v. Colorado*. It is their claim that this law of priority as applied to the water of the Colorado river basin will not only work

to their disadvantage, but is unjust and inequitable when it is considered that for the most part the water that constitutes the stream originates in the upper states; that it comes from precipitation that falls in the form of rain and snow upon their own mountains and adjacent to the lands within these states which may be irrigated therefrom. That because the development for agriculture in the upper states, due to the conditions prevailing there, will in the future be relatively slower than the development in the lower states, and, therefore, unless they are protected one of two things will happen—irrigation in the upper states will in the future be subordinate to power rights on the lower river, or the upper states must enter into a feverish and unnatural race for development with the lower states to preserve their rights of priority—and neither of these courses appeals to them. This attitude can be appreciated by us when we reflect upon the jealous regard and feeling of exclusive ownership held by the people of Arizona with respect to the use of the waters of the Verde, the Salt, and the Gila rivers. The people of the upper states, therefore, very naturally are opposed to any program of large development on the lower river until they can be assured of reasonable protection against the establishment of priority of right as against them through the proposed works on the river at Boulder canyon, at Glen canyon, and other storage sites where power development may be expected. They are prepared, in the absence of such assurance to violently oppose any appropriation by Congress or the giving of any other aid or assistance by the Federal Government for such purposes. The united opposition of four states within the basin, added to the indifference and possibly active opposition of the east and the middle west toward any large agricultural or industrial development in the mountain states through federal aid, is not to be despised, but on the contrary to be feared and removed if possible. The Colorado river compact is, therefore, an effort to remove any cause for this purely sectional feeling and opposition to the proposed development of the river at Boulder canyon, at Glen canyon, at Diamond creek, at Black canyon, and indeed at every point south of the Utah line.

The compact is based upon two major assumptions. The first is that the waters of the river now running to waste are to be conserved by adequate storage reservoirs, and, second, that there is sufficient water in the river if conserved to meet all the demands for agricultural and domestic uses, both in the upper and lower basins, and in addition to meet all the probable demands of the southwest. That there is sufficient water for such purposes is no mere assumption, as may be shown upon a study of the river and of various estimates made by the reclamation service and by state engineers in the various states of lands capable of being irrigated within the basin. Let us consider

some of the facts bearing upon this assumption. Taking the average flow of the Colorado river at Yuma for a period of twenty years and adding thereto the amounts known to be diverted and consumed in irrigation in Colorado, Wyoming, Utah, New Mexico, Arizona, and California, the run-off from the entire watershed will be found to be approximately 21,000,000 acre-feet per annum. Dr. Hoyt, of the geological survey, estimates that not less than 15,000,000 acre-feet annually flows to waste in the Colorado river after all the lands now under irrigation are supplied. Excluding the Gila river and its tributaries, it is estimated that the mean annual flow at Lee's Ferry, the point of division between the two divisions, is 16,400,000 acre-feet. The consumption of water above Lee's Ferry is estimated at 2,400,000 acre-feet annually. Therefore, the mean average run-off of the watershed above Lee's Ferry approximates 18,800,000 acre-feet. There is irrigated in the upper basin at present something in excess of 1,500,000 acres. From the estimates made by the state engineers in the upper states the maximum number of acres that are possible of irrigation in these states is 5,000,000. If the duty of water shall remain as at present, although after the lands become saturated the consumption will necessarily decrease, the maximum needs of the upper basin for agriculture and domestic uses approximate 6,000,000 acre-feet. Certain intermountain diversions are proposed—one for Denver and its vicinity amounting to about 300,000 acre-feet, and certain diversions in Utah amounting in the aggregate to 200,000 acre-feet. The total consumptive use in the Upper Basin will be approximately 6,500,000 acre-feet. This maximum, according to the present rate of increase, will not be reached short of 75 years. Taking, therefore, the mean annual run-off of the river above Lee's Ferry as the basis for calculation and deducting the maximum consumption for agricultural and domestic uses, including intermountain diversion, we have left for the lower basin and its uses 12,300,000 acre-feet per annum.

Now what are the probable needs of the states of the lower basin? None of the water that flows in the main stream may be used for agriculture and domestic purposes in Nevada. At present there is irrigated in California a total of 450,000 acres with a water consumption of 2,250,000 acre-feet. This area may not be increased until what is known as the All-American canal is built, which will cost at least \$30,000,000; but, when built, there is a possible increase to the present acreage of 490,000 acres, making in all 940,000 acres, with a total water consumption of 3,790,000 acre-feet. This acreage includes lands that are of extremely doubtful feasibility and lands that may only be irrigated by pumping. Deducting this maximum consumptive use in California, we have left of the water flowing at Lee's Ferry 8,510,000 acre-feet. The number of acres now being irrigated in Arizona from the waters of the Colorado river proper are 58,000 with

water consumption of 290,000 acre-feet. According to the estimate made by the reclamation service, this acreage may be increased to 285,000 with a consumptive use of 1,150,000 acre-feet. The estimate, therefore, of future consumption of water in the lower basin from the Colorado river proper is approximately 5,000,000 acre-feet. Deducting this from the flow at Lee's Ferry available after the maximum use in the upper states is attained, we have a surplus of something more than 6,000,000 acre-feet.

It is also estimated that when the waters of the river are conserved by storage dams so that the flow may be stabilized, a maximum of 4,000,000 horsepower may be developed between the Utah line and the mouth of the Grand canyon; this, too, without interfering with the proper and full use of the water for agriculture and domestic uses below. It is in view of the facts above stated that the compact provides for another apportionment after forty years from its ratification. This provision is especially advantageous to Arizona because of the limited number of acres the estimates now give us and the possibility that the engineering commission now in the field may report that a very considerable additional acreage is possible of reclamation within a cost that shall not be prohibitive, and if this proves to be the case Arizona undoubtedly will become the beneficiary of this surplus, for there is no other part of the basin in which it can possibly be used.

Bearing these facts in mind, let us briefly examine the provisions of the compact with respect to the allocation of uses. It will be observed that the compact does not divide the waters of the river. What is apportioned is the right to the beneficial consumptive use of the water for agriculture and domestic uses. In other words, it gives to each basin the right to acquire title as against the other basin to rights of appropriation up to a maximum sufficiently large to cover all known probable uses, leaving the disposition of title to the remainder to be made after a period of forty years.

In paragraphs "A" and "B" of Article III there is apportioned to the upper basin the exclusive consumptive use of 7,500,000 acre-feet of water per annum and to the lower basin the exclusive beneficial consumptive use of 8,500,000 acre-feet per annum. The legal effect of this apportionment is that the lower basin may not complain of the diversion and use of water in the upper basin for agriculture and domestic uses provided the annual limit of 7,500,000 acre-feet is not exceeded, but may complain if that limitation is exceeded so as to prevent the full use of 8,500,000 acre-feet annually in the lower basin. There is nowhere in the compact any limitation upon the use of water anywhere for power except that such use in the upper basin may not limit or restrict the use of the water for agriculture and domestic uses in the lower basin. There is nothing in the compact that restricts or limits the use of water in the lower basin, and the full flow of the

stream may be diverted and used without any interference from the upper basin, or without any limitation created by the compact. The effect of the compact is merely to place the two basins of use within the limitations upon a parity of right of 7,500,000 acre-feet for the upper basin and 8,500,000 acre-feet for the lower basin. Any use in either basin above these limits will acquire merely a secondary right of appropriation with respect to appropriations made within the definite allotments and title to which is deferred to a later date.

It may be of interest to know why the figures of 7,500,000 acre-feet for the upper basin and 8,500,000 acre-feet for the lower basin were reached. It grew out of the proposition made by the upper basin that there should be a fifty-fifty division of rights to the use of the water of the river between the upper and lower basins which should include the flow of the Gila, and the insistence of Mr. Norviel, commissioner from Arizona, that no fifty-fifty basis of division would be equitable unless the measurement should be at Lee's Ferry. As a compromise the known requirements of the two basins were to be taken as the basis of allotment with a definite quantity added as a margin of safety. The known requirements of the upper basin being placed at 6,500,000 acre-feet, a million acre-feet of margin gave the upper basin an allotment of 7,500,000 acre-feet. The known future requirements of the lower basin from the Colorado river proper were estimated at 5,100,000 acre-feet. To this, when the total possible consumptive use of 2,350,000 acre-feet from the Gila and its tributaries are added, gives a total of 7,450,000 acre-feet. In addition to this, upon the insistence of Mr. Norviel, 1,000,000 acre-feet was added as a margin of safety, bringing the total allotment for the lower basin up to 8,500,000 acre-feet. This compromise agreement is justified when we consider that the flow of the river will not be affected by any artificial division, but will continue uninterrupted, to be used for any beneficial purpose recognized, including power, as freely as though no such apportionment had been attempted.

In clause "D" of Article III of the compact there is a provision which in effect guarantees that the states of the upper division will not cause the flow of the river at Lee's Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years, reckoned in continuing progressive series. Manifestly, the only purpose of this provision is to safeguard the lower basin during periods of prolonged drought. The period of ten years is not one definite block of ten years, but is a continuing progressive series, so that it is impossible to group any definite number of wet years in any one series, and the upper basin must each year guard against the possibility of future shortage and against having to make up an unknown deficit in the future.

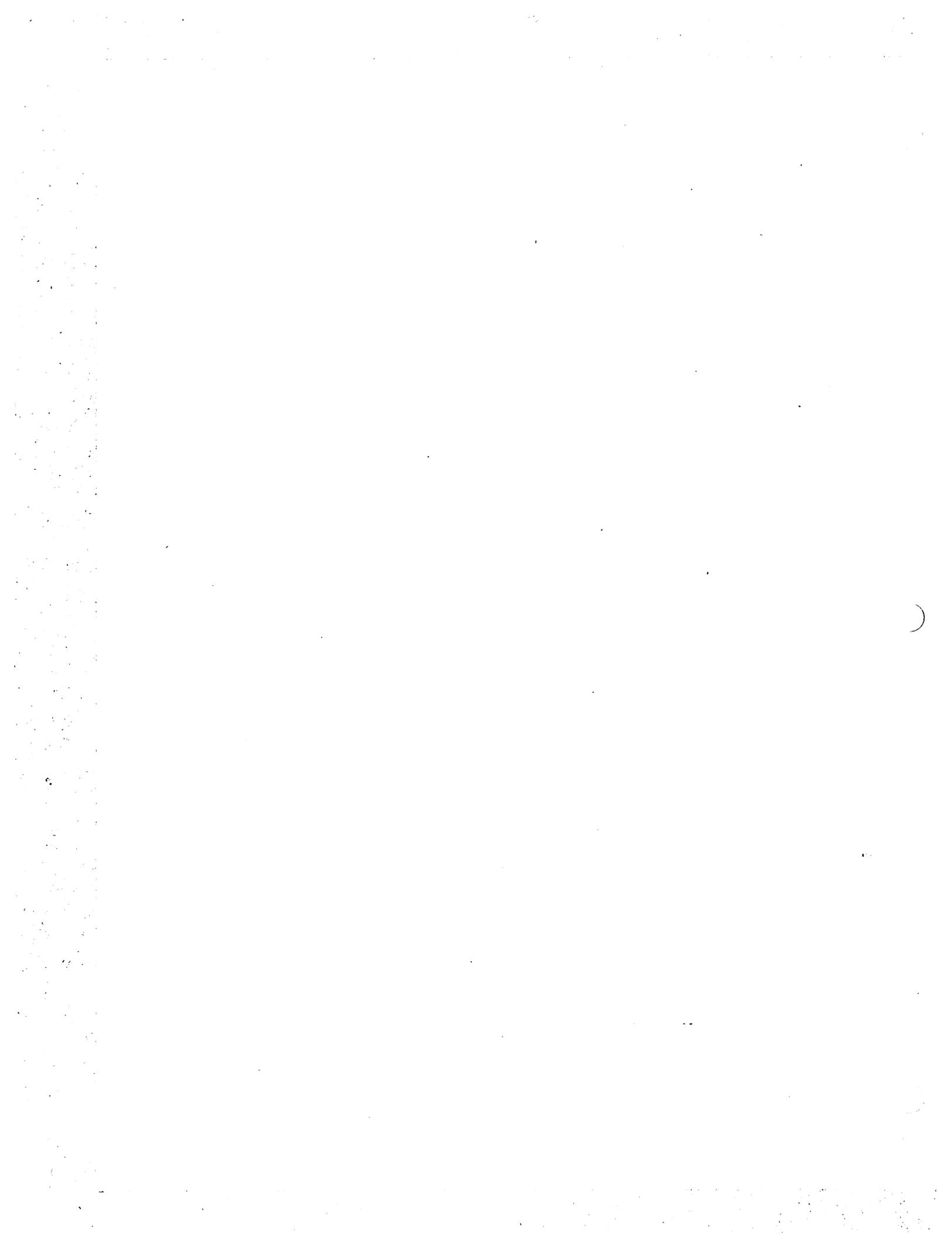
The compact has been attacked because of its recognition of Mexican rights in the river. It is difficult to reconcile good faith with such attacks. What are the facts and what does the pact provide with respect to the rights of Mexico? There are now being served with water from the Colorado river through the canal that supplies the Imperial valley about 190,000 acres in Lower California. These lands are receiving approximately 900,000 acre-feet per annum. The canal that supplies these lands as well as the Imperial valley runs for the most part through Mexican territory. To obtain a right of way the promoters of the Imperial valley and the builders of this canal were compelled to agree that one-half of the water diverted might be used upon Mexican lands. Under this contract these Mexican lands may use as much as 5,000 second-feet or enough to supply 255,000 acres, which is the maximum that may be supplied by gravity from the canal. A total of 500,000 acres in Lower California is possible of irrigation by gravity supplemented by pumping with a consumption of approximately 2,250,000 acre-feet. In addition to the lands in Lower California there are approximately 250,000 acres lying east of the Colorado river in Sonora, but in order that these lands may be irrigated the diversion point must be in or about Yuma. No appropriation has yet been made of any water for these lands. The only provision in the compact with regard to Mexico is found in paragraph "C" of Article III, which in effect is that if the government of the United States shall by treaty with Mexico allot any water to these Mexican lands, the burden of supplying such water shall fall equally upon the states of the upper and lower basins. This provision was necessary in order to safeguard the lower basin. More than that, however, this provision is of distinct advantage to the lower basin in that it united the seven states in opposition to any demand that Mexico may make that if granted may adversely affect their interests. With the seven states united in this way there is little or no probability that the United States will allot to Mexico in excess of 2,000,000 acre-feet. At any rate, water in excess of this amount ought never to be allotted as against any use that the States or any of them may possibly make. It must be remembered that Mexico is not a party to the compact and therefore can claim no right under it nor any benefit from any of its provisions. The critic who seeks to read anything of this sort into the pact either wilfully misrepresents it or is ignorant of the rules applicable to the construction of contracts.

There has been some opposition to the compact on the ground that it does not attempt to allot water particularly as between California and Arizona. Had such an attempt been made it would undoubtedly have proven disadvantageous to Arizona for the reason that the ultimate development possible in California is definitely well known and

the amount of water ultimately needed to fully supply its needs is also approximately well known; while in Arizona we are hoping that the reclamation service estimate as to the acreage in this state is altogether too small and that a very much larger acreage is possible of irrigation, for otherwise there will be a very large surplus of unused water in the river.

The amount available to Arizona after deducting all the possible requirements of the other states and any just allotment the United States by treaty may accord to Mexico, will be sufficient to take care of more than 1,000,000 acres of land in this state, for the amount will not be less than 6,000,000 acre-feet per annum.

Considering the pact, therefore, from the standpoint of its essential purposes, the physical facts constituting its subject matter, its effect upon the development in our own State, its advantages as well as its disadvantages, the probability or improbability that in the future any more favorable agreement may be secured, and I submit in all candor that no opposition or criticism can fairly be advanced sufficient in importance to warrant its rejection by the people of this state.



Appendix 209

**THE COLORADO RIVER COMPACT:
REPORT OF W. F. McCLURE, COMMISSIONER FOR
CALIFORNIA**

JANUARY 8, 1923.

To the Honorable FRIEND W. RICHARDSON,
*Governor, State of California,
State Capitol, Sacramento, California.*

SIR: I submit herewith, for your consideration, my report upon the Colorado River Compact, as agreed to by the representatives of the States of Arizona, California, Nevada, New Mexico, Utah, and Wyoming, and approved by Herbert Hoover, the Federal Commissioner.

It is my belief that the ratification of this compact by the legislatures of California and the States in interest, will tend to their lasting benefit; bringing forth the better understanding that is of most vital import to their progress, their growth, and future development.

Respectfully,

W. F. McCLURE,
*State Engineer,
Commissioner for California.*

REPORT ON COLORADO RIVER COMPACT

AUTHORIZATION

California sets forth in its title to Chapter 88 of the 1921 Statutes, approved May 12th, 1921, the purpose of negotiating a compact concerning the use and distribution of the waters of the Colorado River system, as follows:

CHAPTER 88, 1921 STATUTES

AN ACT Authorizing the governor of California to appoint a representative of the State of California to serve upon a joint commission composed of representatives of the states of Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, and the United States of America, and constituted for the purpose of negotiating and entering into an agreement between the several states hereinabove-mentioned and between said states and the United States of America, subject to the consent of Congress, respecting further use and disposition of the waters of the Colorado River and streams tributary thereto, and fixing and determining the rights of each of said states and rights of the United States in and to the use, benefit, and disposition of the waters of said stream and its tributaries.

By the authority vested in him through this Act, Hon. William D. Stephens, then Governor of California, appointed State Engineer W. F. McClure as the duly authorized Commissioner for California, and he represented this State upon the Colorado River Commission, which on November 24th, at Santa Fe, New Mexico, unanimously subscribed to the Colorado River Compact.

COMMISSIONERS' POWER

The signature of the Commissioner for California is made in accordance with Chapter 88 of the 1921 Statutes and with special reference to the provision in section one of Chapter 88, which reads as follows:

* * * provided, however, that any agreement so entered into by said states and the United States of America shall not be binding or obligatory upon any of the high contracting parties thereto unless and until such agreement shall have been ratified and approved by the legislature of each of the above-mentioned states and by the congress of the United States.

This provision is common to the Acts passed by the Legislatures of the several states interested and, in reflecting the mutual understanding of the Commissioners on this point, Article XI of the Compact provides that it shall become effective only after its approval by the legislatures of the states interested, and by the congress of the United States.

FORM OF COMPACT

The form of the Compact was only determined after a most thorough study of the many different phases of the problems presented in connection with the apportionment and use of the water of the great Colorado River System. It was the endeavor of the Commission to frame a document that would be as concise as possible without sacrifice of clarity. Every word and phrase was carefully considered with a view of obtaining a final form that could not be misinterpreted. The agreement does not attempt to do too much. Certain broad basic principles to govern the apportionment and use of the waters of the Colorado River System are laid down by plain statements that can be understood by the layman, without the necessity of complete information concerning the involved technical and legal phases of the whole problem.

The following is a copy of the Compact signed at Santa Fe, New Mexico:

(NOTE.—The full text of the compact appears at this point in Mr. McClure's report, but is omitted here to avoid duplication.)

SOLUTION

Through these eleven articles of agreement it is believed that a clear workable basis for the equitable apportionment and use of the waters

of the Colorado River System may be established. The function of the Compact is not to provide for the construction of any particular project or projects. Its main purpose is to afford the means of clearing the way for any development that may be undertaken in any section of the Colorado River Basin, by removing cause for artificial restriction or interference from other sections of the river basin.

This Treaty plan presents itself as the most satisfactory method of solving the Colorado River problem. No other stream in the arid West affects so many states as does the Colorado River.

In its lower reaches the Colorado River flows southerly along the entire eastern boundary of Imperial County, California. During the past twenty years a very prosperous community has been developed in the Imperial Valley, Imperial County, under the authorization of our irrigation district laws. The irrigation district contains something over 500,000 acres of very fertile land, and secures its entire water supply from the Colorado River. During the low-water flow of the river of three seasons within the past eighteen years, there has been a shortage of water for irrigation. A larger area of land is now being irrigated and a larger amount of water is needed, hence a much more serious condition is anticipated in the future because of the sure occurrence of other seasons of scant supply.

The other extreme as to the amount of water flowing down the Colorado River, namely, that of floods, creates a very serious condition also. The Imperial Valley Irrigation District has been compelled during a number of years past to spend large amounts of money in constructing and maintaining levees with which to form barriers against the entry of the river into the valley and into the Salton Sea. In order that protection may be provided for flood damage, and that additional water may be conserved for low-flow seasons, and in order to serve for the extension of the irrigable area, it is necessary that impounding works be constructed at some point on the river. This irrigation district has been cooperating with the U. S. Reclamation Service for some years in investigating the best site for such impounding works.

The proposal on the part of the State of California to so plan and protect the interests of Imperial County is of interest to the other states lying within the basin of the Colorado River drainage area and, in order that there may be general community interest and a general working plan adopted by all such states, certain legislation was proposed and passed by all of them during the year 1921. California's Act is expressed in the language of Chapter 88, Statutes of 1921, and is as follows:

(The text of California Statutes, 1921, chapter 88, appears at this point in Mr. McClure's report, but is omitted here.)

Legislation of similar character was adopted by all of the other states. President Harding appointed Mr. Herbert Hoover, Secretary of the Department of Commerce, as the federal member. The Commission met in Washington, D. C., on January 27, 1922, and chose Mr. Hoover as chairman. Meetings and hearings have been held at—

Phoenix, Arizona, March 15, 16, 17, 1922.

Los Angeles, California, March 20, 1922.

Salt Lake City, Utah, March 27, 28, 1922.

Grand Junction, Colorado, March 29, 1922.

Denver, Colorado, March 31 and April 1, 1922.

Cheyenne, Wyoming, April 2, 1922.

Santa Fe, New Mexico, November 9th to 24th, 1922.

Compact adopted November 24th, 1922, at Santa Fe, New Mexico.

The movement of which the Compact is the outgrowth started at the meeting of the League of the Southwest in Denver during August 1920. As a result of the Denver meeting a Commission was constituted as composed of the State Engineers, or similar officials, of each of the seven states in interest, together with the Director and Chief Engineer of the U. S. Reclamation Service, with the delegated purpose of studying the physical phases of the whole Colorado River problem and suggesting a basis and principles for solution. After a careful study of the matter uniform legislation was drafted for the creation of a Commission, which became known as the Colorado River Commission. This Commission was duly authorized by legislative enactment by the states in interest and the United States, and their respective representatives duly appointed.

CONCLUSION

In conclusion permit me to add that the terms of the compact do full justice to the states in interest, and the equitable division and apportionment of the use of the waters of the Colorado River System whereby the Lower Basin is allocated 7,500,000 acre-feet per annum, with an allowable increase of 1,000,000 acre-feet per annum by reason of the probable rapid development upon the lower river, and fully guarantees to California an ample water supply to adequately care for the enormous future growth of the Imperial Valley and adjacent territory. With the construction of an impounding dam at the proper location to restrain the floodwaters of the Colorado River, all menace of inundation, which is now an ever-present hazard to Imperial Valley, will be eliminated, and the value of electric energy possible of generation by water power through the construction of such dam will be of immense value not only to Imperial Valley but to our entire southwest.

Appendix 210

**THE COLORADO RIVER COMPACT:
REPORT OF DELPH E. CARPENTER,
COMMISSIONER FOR COLORADO**

(Reprinted from 70 Cong. Rec. 577-586 (December 14, 1928))

DENVER, COLO., *December 15, 1922.*

HON. OLIVER H. SHOUP,
*Governor of Colorado,
Capitol Building, Denver.*

SIR: I have the honor to report that a compact between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, providing for the equitable division and apportionment of the use of the waters of the Colorado River, was signed at Santa Fe, N. Mex., November 24, 1922, by the commissioners for said States, and was approved by the Hon. Herbert Hoover, Secretary of Commerce, representative for the United States of America upon said commission.

I signed the compact as commissioner for the State of Colorado, by your appointment, under authority of Chapter 246, Session Laws, 1921, and the commissioners for the other States acted under authority of similar legislation. The Hon. Herbert Hoover approved the compact, as the representative of the United States, under authority of the act of Congress approved August 19, 1921 (42 Stat. L., p. 171).

The compact was executed in a single original, which has been deposited in the archives of the Department of State of the United States, and a duly certified copy has been forwarded to the governor of each of the signatory States. It shall become binding and obligatory upon the signatories when approved by the legislature of each of said States and by the Congress of the United States.

I transmit herewith a copy of the compact. It provides in substance as follows:

All territory within the United States of America, to which the waters of the Colorado River and its tributaries are or may be beneficially applied, is designated as "the Colorado River Basin." The drainage area of the river consists of two great natural subdivisions, viz, the upper region, located above the head of the great canyon, and the lower region below the great canyon (including the territory

drained by the Gila, Little Colorado, and other lower tributaries). Lee Ferry is situated at the head of the canyon, in the State of Arizona, a few miles southerly from the intersection of the Colorado River with the boundary common to the States of Arizona and Utah, and is the natural point of demarcation between the upper region and the lower region.

All waters of the entire river system within the upper region (including those returning to the river from irrigated lands) unite to form a single stream at Lees Ferry, where the flow may be measured and recorded.

The compact conforms to this natural division. The upper region, plus all lands outside the drainage area which may be beneficially served by waters diverted from the river, is designated as the "upper basin." The lower region is designated as the "lower basin."

The seven States are grouped into two political divisions. Colorado, New Mexico, Utah, and Wyoming, constitute the States of the upper division. The States of Arizona, California, and Nevada constitute the lower division.

Seven million five hundred thousand acre-feet exclusive annual beneficial consumptive use is set apart and apportioned in perpetuity to the upper basin and a like amount to the lower basin.

Any waters necessary to supply lands in the Republic of Mexico (hereafter to be determined by international treaty) shall be supplied from the surplus flow of the river. If the surplus is not sufficient, any deficiency shall be borne equally by the upper basin and the lower basin.

By reason of development upon the Gila River and the probable rapid future development incident to the necessary construction of flood works on the lower river, the lower basin is permitted to increase its development to the extent of an additional 1,000,000 acre-feet annual beneficial consumptive use before being authorized to call for a further apportionment of any surplus waters of the river.

No further apportionment of surplus waters of the river shall occur within the next 40 years. At any time after 40 years, if the development in the upper basin has reached 7,500,000 acre-feet annual beneficial consumptive use or that of the lower basin has reached 8,500,000 acre-feet, any two States may call for a further apportionment of any surplus waters of the river, but such supplemental apportionment shall not affect the perpetual apportionment of 7,500,000 acre-feet made to each basin by this compact.

The States of the upper division shall not cause the flow of the river at Lees Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years (7,500,000 acre-feet average annual flow over any 10-year period) if necessary for use in the lower basin. This is approximately 50 percent of the river flow at Lees Ferry during the lowest 10-year period of which we have a record.

Navigation is made subservient to all other uses. Power is made subservient to domestic and agricultural uses.

State control of the appropriation, use, and disposition of water within each State is left undisturbed.

Present perfected appropriations of water are not disturbed, but such rights take their water from the apportionment to the basin in which they are located.

All future controversies between two or more States of each group are specifically reserved for separate consideration and adjustment by separate commissions, or by direct legislation, whenever such questions may arise, if ever they do.

Records of the river flow at Lees Ferry are under the control of the State engineers of the seven States and two representatives of the United States, but the authority of such officials terminates with the ascertainment and publication of the facts.

The compact may be terminated at any time by the unanimous agreement of the signatory States.

FURTHER COMMENT

I take the liberty of offering the following observations:

The upper basin constitutes the principal source of the water supply. All waters returned to the river from irrigated lands within the upper basin will pass Lees Ferry and be measured as a part of the water to be delivered to the lower basin. The upper States guarantee somewhat less than one-half the average annual flow of the river (at Lees Ferry) during the 10-year period from 1902 to 1911, inclusive, which was the period of the lowest recorded river flow. All water, both natural and return flow, which passes Lees Ferry will be credited to the delivery by the upper States. There is no minimum or maximum requirement for any particular year. The compact is satisfied by an aggregate delivery of 75,000,000 acre-feet of water during any 10-year period.

The topography of the upper basin limits the extent to which each of the upper States may go in its development and its corresponding consumption of river flow. As the various tributaries leave Colorado and Wyoming they have already entered into deep canyons and their waters are not available for diversion in Utah. The Utah development will be confined to tributary streams and the waters of such are no longer available to Utah lands after they have entered the Green or Colorado Rivers. The waters of the San Juan are no longer available for diversion in Utah after they have served lands in Colorado and New Mexico. These natural limitations upon the use of the waters within each of the upper States will always afford ample assurance against undue encroachment upon the flow at Lees Ferry by any one of the four upper States. Colorado cannot divert 5 percent of its portion of the river flow to regions outside the river basin.

All development in Utah and New Mexico, requiring diversions from streams in Colorado, shall be subject to separate adjustment with Colorado before construction occurs.

The term "beneficial consumptive use" is to be distinguished from the amounts diverted from the river. It does not mean head-gate diversions. It means the amount of water consumed and lost to the river during uses of the water diverted. Generally speaking, it is the difference between the aggregate diverted and the aggregate return flow. It is the net loss occurring through beneficial uses.

The apportionment of 7,500,000 acre-feet exclusive annual beneficial consumptive use to the upper basin means that the territory of the upper basin may exhaust that much water from the flow of the stream each year. The aggregate annual diversions in the upper basin are unlimited. The limitation applies only to the amount consumed, and all waters which return to stream are not "consumed."¹

The apportionment to the upper territory is perpetual. It is in no manner affected by subsequent development. It is not required that the water shall be used within any prescribed period. Further development on the lower river will in no manner affect this apportionment or impair the right of the upper States to consume their apportionment whenever their necessities require. Any immense reservoir hereafter constructed on the lower river cannot be the basis of a preferred claim which will interfere with the future development of the upper basin. The development in the lower basin will be confined to the apportionment made to that basin, with the permissible increase. Any excess of development cannot infringe upon the reservation perpetually set apart to the upper territory. There can be no rivalry or contest of speed in the development of the two basins. Priority of development in the lower basin will give no preference of right as against the apportionment to the upper basin.

The 7,500,000 acre-feet annual beneficial consumptive use apportioned to each basin includes the water necessary to supply present perfected uses in each of the basins. Such present uses consume but a small part of the apportionments. By reason of a fear that further upper development might temporarily deplete the low flow of the river in the autumn and early winter of dry years, it is provided by Article VIII that present perfected appropriations upon the lower river shall not be precluded from protecting any such appropriations

¹ The apportionment of 7,500,000 acre-feet exclusive annual beneficial consumptive use to the upper basin means that the territory of the upper basin may *exhaust* that much water from the flow of the stream each year. The aggregate annual *diversions* in the upper basin are unlimited. The limitation applies only to the amount *consumed*, and all waters which return to stream are not "consumed."

[The emphasis supplied in this paragraph appears in the reprint of Mr. Carpenter's report published in 1923 by the State of Colorado. The italics do not appear in the Congressional Record.]

from encroachments upon their supplies until reservoirs have been constructed to store a definite part of the water apportioned to the lower basin.

There is no treaty between the United States and Mexico fixing any right in Mexico to the use of waters of the Colorado River. All such matters must depend upon future treaties. The compact provides that water, if any, necessary to supply the obligations of any such treaty shall be taken first from any surplus after meeting the apportionments—and right to increase—already made to the upper and lower basins. If the surplus is inadequate any deficiency shall be borne equally by the two basins.

If the time arrives when the development in either of the basins requires a supplemental apportionment—which probably will never occur—the water available for such purposes will be the surplus remaining after deducting the perpetual apportionments—and right to increase—now made plus any possible international burden. The supplemental apportionment will not disturb or impair the perpetual apportionment made by the present compact.

The repayment of the cost of the construction of necessary flood-control reservoirs for the protection of the lower river country, probably will result in a forced development in the lower basin. For this reason a permissible additional development in the lower basin to the extent of a beneficial consumptive use of one million acre-feet, was recognized in order that any further apportionment of surplus waters might be altogether avoided or at least delayed to a very remote period. This right of additional development is not a final apportionment. This clause does not interfere with the apportionment to the upper basin or with the right of the States of the upper basin to ask for further apportionment by a subsequent commission.

The compact provides that the upper basin shall not be required to deliver any water to the lower basin which cannot be beneficially applied to domestic and agricultural uses. Power claims will always be limited by the quantity of water necessary for domestic and agricultural purposes. The generation of power is made subservient to the preferred and dominant uses and shall not interfere with junior preferred uses in either basin.

Article VII, protecting the obligations of the United States to the Indian tribes, avoids necessity of conditional ratification of the compact by the Congress. Such rights are negligible and the apportionment to each basin includes all such necessary diversions.

Broadly speaking, from a Colorado viewpoint, the compact perpetually sets apart and withholds for the benefit of Colorado a preferred right to utilize the waters of the river within this State to the extent of our present and future necessities. It protects our development from adverse claims on account of any great reservoir or other

construction on the lower river. It removes all excuses for embargoes upon our future development and leaves us free to develop our territory in the manner and at the times our necessities may require.

It affords me pleasure to call attention to the distinguished services of Ralph I. Meeker, engineering expert for the State of Colorado, whose comprehensive knowledge of the entire Colorado River Basin commanded the attention of the commission and facilitated its labors. I append hereto a table prepared by Mr. Meeker showing the estimated annual water supply of the Colorado River (including the amount at present consumed) and the disposition of such water by the compact.

I trust the compact will meet your favorable consideration, and I respectfully request that it be submitted to the legislature for its early approval.

Respectfully submitted.

DELPH E. CARPENTER,
Commissioner for Colorado.

DENVER, COLO., *December 15, 1922.*

Physical data

COLORADO RIVER BASIN

Table 1

	<i>Acre-feet</i>
Estimated average annual water supply	20, 500, 000
Estimated average annual water consumption, 1921.....	7, 000, 000
	<hr/>
Present unused surplus wasting to Pacific Ocean.....	13, 500, 000
	<hr/> <hr/>

Table 2

Upper basin water supply	17, 500, 000
Lower basin water supply	3, 000, 000
	<hr/>
Total water supply of basin.....	20, 500, 000
	<hr/> <hr/>

Table 3

Present unused surplus wasting to Pacific Ocean.....	13, 500, 000
	<hr/>
Estimated future water requirements, upper basin	5, 000, 000
Estimated future water requirements, lower basin (in- cludes Gila).....	4, 000, 000
	<hr/>
Estimated future water requirements.....	9, 000, 000
	<hr/>
Approximate surplus.....	4, 500, 000
	<hr/> <hr/>

Table 4

Estimated average annual water supply.....	<i>Acre-feet</i>	20, 500, 000
Upper division allocation, includes present consumption..	<i>Acre-feet</i>	7, 500, 000
Lower division allocation, includes present consumption..		7, 500, 000
Lower division permissible increase in water consumption..		1, 000, 000
		<hr/>
Total allocated or permitted.....		16, 000, 000
		<hr/>
Unallotted surplus.....		4, 500, 000
		<hr/> <hr/>

Table 5

Upper basin water allotment.....		7, 500, 000
Estimated present consumption, upper basin.....	<i>Acre-feet</i>	2, 500, 000
Estimated future water requirements, upper basin, in- cluding transmountain diversions.....		5, 000, 000
		<hr/>
		7, 500, 000
		<hr/> <hr/>

Table 6

COLORADO RIVER AREA IN THE STATE OF COLORADO
(WESTERN SLOPE)

Estimated average yearly water supply, western slope.....	12, 100, 000
Estimates present consumptive use per year on 859,000 acres irrigated land.....	1, 100, 000
	<hr/>
Unused water passing out of Colorado, average yearly flow..	11, 000, 000
Estimates future requirements all new lands western slope (1,500,000 acres) and future transmountain diversions.....	2, 600, 000
	<hr/>
Average annual surplus water to main Colorado River.....	8, 400, 000

[The full text of the compact appears at this point in the Congressional Record reprint of Mr. Carpenter's report. It is omitted here to avoid duplication.]

HISTORICAL MEMORANDUM IN RE COLORADO RIVER, AND BRIEF OF LAW OF INTERSTATE COMPACTS

(Submitted by Delph E. Carpenter to Judiciary Committee, House of Representatives, 67th Cong., 1st sess., on June 4, 1921, at hearing in re H. R. 6821)

HISTORICAL MEMORANDUM

The object of the pending legislation is to permit a settlement respecting the future utilization and disposition of the waters of the Colorado River, and of the streams tributary thereto, by compact between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming.

The object is to determine the respective rights of the States to the use and disposition of the waters of this great river prior to any further large construction or extensive utilization of these waters, in order that the rights of the States and the Government may be settled and determined in advance of construction and before interstate or other controversies may arise.

The pending bill was introduced pursuant to resolution adopted and signed by the governors of the seven States above named at Denver, Colo., May 10, 1921, wherein it is recited that each of the seven States, whose territory includes in part the drainage of the Colorado River, has already provided for adjustment respecting the future utilization and disposition of the waters of the stream and has appointed its commissioner to serve with commissioners from other interested States and with a commissioner to be appointed for the United States for this general purpose.

The resolution reads as follows:

Whereas the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming have by appropriate legislation authorized the governors of said States to appoint commissioners representing said States for the purpose of entering into a compact or agreement between said States and between said States and the United States respecting the future utilization and disposition of the waters of the Colorado River and the streams tributary thereto; and

Whereas the governors of said several States have named and appointed the commissioners contemplated by the legislative acts aforesaid: Now, therefore, be it

Resolved, That the Congress of the United States be, and is hereby, requested to provide for the appointment of a commissioner on behalf of the United States to act as a member of said Commission; and be it further

Resolved, That the proposed draft of a bill for presentation to Congress, a copy of which is hereto attached, be offered as a suggestion for legislation for the purposes aforesaid; and be it further

Resolved, That Gov. Thomas E. Campbell, of Arizona, and the governors of the other States in the Colorado River Basin, or such representatives as they may severally designate, be and they hereby are, authorized to present his resolution to the President and to the Congress of the United States.

We, the undersigned, do hereby certify that the foregoing resolution was adopted by unanimous vote at a meeting of the Governors of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, held at the capitol at Denver, in the State of Colorado, on the 10th day of May 1921.

THOMAS E. CAMPBELL,
Governor of Arizona.

WILLIAM D. STEPHENS,
Governor of California.

By W. F. McCLURE,
State Engineer.

OLIVER H. SHOUP,
Governor of Colorado.

EMMET D. BOYLE,
Governor of Nevada.

MERRITT C. MECHAM,
Governor of New Mexico.

CHARLES R. MABEY,
Governor of Utah.

ROBERT D. CAREY,
Governor of Wyoming.

HISTORY OF PROCEEDINGS BY COLORADO RIVER STATES LEADING TO
INTERSTATE COMPACT LEGISLATION—COLORADO RIVER

Salt Lake Conference

January 18–21, 1919, a conference between the representatives of the seven Colorado River States, to wit, Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, was called by the Governor of Utah for the purpose of discussing questions relating to the utilization of the water supplies of the Colorado River and its tributaries, and especially in connection with a law then proposed by Secretary Lane relating to soldiers' and sailors' settlement.

Hon. W. J. Spry, ex-Governor of Utah, present Commissioner of the General Land Office, presided over the meeting and was made permanent chairman of a continuing organization.

The other Colorado River Basin States above noted were represented. The meeting of the seven States resolved itself into a permanent organization to be known as The League of the Southwest.

As a result of the sessions the following resolutions, inter alia, were adopted:

The history of irrigation throughout the world has shown that the greatest duty of water is had by first using it upon the upper reaches of the stream and continuing the use progressively downward. In other words, "The water should

first be captured and used while it is young," for it can then be recaptured as it returns from the performance of its duties and thus be used over and over again.

Attention is further directed to the fact that many of these irrigation projects, of a magnitude to be developed only by the Federal Government, can be properly carried on without interfering with smaller developments which should be undertaken by individual and corporate initiative, and we therefore urge upon the Interior and Agricultural Departments the adoption of a liberal and sympathetic policy in the granting of rights-of-way for reservoirs and ditches upon the public domain, where the same are essential to the development of such private projects.

We further urge the liberal administration of all land laws of the United States looking to the end of placing the lands of the United States in the actual possession and occupation of its citizens in order that the citizens may have a home and that the lands may go upon the tax rolls of the various States in which they may be located in order that they may bear their just portion of the expense of State administration.

Along the lines set forth in these resolutions, we pledge ourselves to a hearty cooperation with the representatives of the Federal Government in order that the desired end may be attained at the earliest possible moment consistent with a wise administration of the affairs of the Nation and of States.

In the carrying out of all reclamation projects in which the Federal Government may become interested, its activities should ever be in conformity with the laws of the State in which the project under development is located. In the arid States of the West the irrigation projects undertaken by or with the aid of the Federal Government should in every instance be based upon a full compliance with the laws of the State wherein the projects are located so far as the appropriation of water and other matters of purely State control are concerned.

Subsequent meetings of the league were held at Los Angeles where resolutions of a similar character were adopted.

Denver Conference

A subsequent meeting of the league was held at Denver August 25-27, 1920, at which the desirability of encouraging the construction of large reservoirs in the canyon of the Colorado River for purposes of flood control, power, and irrigation was discussed, and at which the Director of the Reclamation Service assured the representatives of the seven States that the construction of such reservoirs need in no manner interfere with the future development of the upper reaches of the streams within the States of origin of the waters to be impounded by the reservoirs situate in the Lower States.

The following resolutions were unanimously adopted:

Be it resolved, That the resolution, adopted at the conference of the league, held at Salt Lake City, January 18-21, 1919, and the proceedings of the third convention of the League of the Southwest, held at Los Angeles, April 2-3, 1920, be, and the same are, hereby ratified, approved, and reaffirmed.

Whereas it is the understanding of this league, from information presented by Hon. Arthur P. Davis, director of the United States Reclamation Service, that the water supply of the Colorado River drainage is sufficient to supply the present and future necessities of all of the States whose territory is involved and that all present and future interference with development upon or from the upper reaches of the stream should be avoided: Now, therefore, be it

Resolved, That the league favors the early development of all possible beneficial uses of waters of the stream upon the upper reaches of the stream and its tributaries along the lines set forth in the resolutions adopted at the Salt Lake conference of January 28-31, 1919, and that the present and future restrictions upon such development by withholding or conditional granting of applications for rights of way across public lands for irrigation works should be discontinued and that such applications should be granted with that degree of dispatch which will permit the construction of all such projects while financial and other means are at hand and opportunity for construction exists: Be it further

Resolved, That it is the sense of this conference that the present and future rights of the several States whose territory is in whole or in part included within the drainage area of the Colorado River, and the rights of the United States, to the use and benefit of the waters of said stream and its tributaries, should be settled and determined by compact or agreement between said States and the United States, with consent of Congress, and that the legislatures of said States be requested to authorize the appointment of a commissioner for each of said States for the purpose of entering into such compact or agreement for subsequent ratification and approval by the legislature of each State and the Congress of the United States.

Pursuant to the last-quoted resolution, and at the request of the Governor of Arizona, president of the League of the Southwest, bills were drawn and submitted to the legislatures of the seven States involved, and were thereafter enacted by all of said States.

Each of said bills provide for the appointment of a commissioner for each of said States by the respective governors for the purpose of formulating the compact or agreement provided for by the concurrent legislation.

The legislation by each of the States also provided for a representative of the United States to act on behalf of the Federal Government in the formulation of the interstate compact or agreement.

Pursuant to the above legislation, the governors of each of the States have appointed their respective commissioners.

May 10, 1921, the governors of the seven States, or their duly accredited representatives, met at the city of Denver and there formulated resolutions calling upon the President of the United States and upon Congress to provide for the appointment of a representative for the United States in harmony with the above-mentioned legislation by the States, and directed that the resolution so formulated be laid before the President and Congress by the governors of the States. The resolution adopted by the governors at Denver was presented by the governors, or their duly accredited representatives, to the Secretary of the Interior, at Washington, May 17, and to the President of the United States, May 19, 1921.

BRIEF ON LAW OF INTERSTATE COMPACTS

POWERS OF STATES TO ENTER INTO COMPACTS

Compacts or agreements between the States are recognized by Article I, section 10, paragraph 3, of the Constitution of the United States, which provides:

No State shall, without consent of Congress, * * * enter into any agreement or compact with another State. * * *

Interstate controversies and differences respecting boundaries, fisheries, etc., have been frequently settled by interstate compact.

Among the many boundary disputes so settled may be mentioned the following: Virginia and Pennsylvania, 1780 (11 Pet. 20); Virginia and Pennsylvania, 1784 (3 Dall. 425); Kentucky and Tennessee, 1820 (11 Pet. 207); Virginia and Tennessee, 1802 and 1856 (148 U. S. 503, 511, 516); Virginia and Maryland, 1785 (153 U. S. 155, 162).

Of the compacts between States respecting the taking of fish in rivers forming the boundary between the two disputant States may be mentioned Washington and Oregon, Columbia River; Maryland and Virginia, Potomac River (153 U. S. 155).

The States of New York and New Jersey settled their harbor differences by interstate compact.

While all compacts which would in any way involve the Federal Government or its jurisdiction, property, etc., must be made with consent or approval of Congress in order to be binding, it has been suggested by the Supreme Court that compacts made between two States respecting matters in which the States alone are interested might be taken as binding without consent or approval of Congress (*Stearns v. Minnesota* 179 U. S. 223, 245; *Virginia v. Tennessee*, 148 U. S. 503; *Wharton v. Wise*, 153 U. S. 155).

For a full discussion respecting the rights of the States to enter into treaties or compacts, with consent of Congress, see *Rhode Island v. Massachusetts* (12 Pet. 657, 725-731).

In the case just cited the Supreme Court observed that when Congress has given its consent to two States to enter into a compact or agreement—

then the States were in this respect restored to their original inherent sovereignty; such consent, being the sole limitation imposed by the Constitution, when given, left the States as they were before, as held by this court in *Poole v. Fleeger* (11 Pet. 209); whereby their compacts became of binding force, and finally settled the boundary between them; operating with the same effect as a treaty between sovereign powers. That is, that the boundaries so established and fixed by compact between nations, become conclusive upon all the subjects and citizens thereof, and bind their rights, and are to be treated to all intents and purposes,

as the true real boundaries. * * * The construction of such a compact is a judicial question.

for the United States Supreme Court (12 Pet. 725).

See also discussion of the same subject in *Stearns v. Minnesota* (179 U. S. 223); *Virginia v. Tennessee* (148 U. S. 503, 517-528); *Wharton v. Wise* (153 U. S. 155).

In other words, the States of the Union, by consent of Congress, have the same power to enter into compacts with each other as do independent nations, upon all matters not delegated to the Federal Government.

INTERNATIONAL RIVERS

Controversies respecting international rivers have been settled by treaty (Heffter Droit Ind., appendix VIII; Hall, International Law, sec. 39).

While the right of the United States to the use and benefit of the entire flow of the Rio Grande River irrespective of any former uses made in Mexico was upheld by the opinion of the Attorney General in 1895 (21 Ops. Atty. Gen. 274, 282), the rights of the two nations were settled by a "convention providing for the equitable distribution of the waters of the Rio Grande for irrigation purposes" made May 21, 1906 (Malloy, Treaties, Vol. I, p. 1202).

That the United States has a perfect right to divert the waters of the Colorado River at any point above the international boundary with Mexico irrespective of the effect of such diversion upon the flow of the river in Mexico or along that part of its course which forms the boundary between the two nations was held by the Attorney General September 28, 1903 (Rept. to Atty. Gen. of U. S., Colorado River in California, p. 58; opinion of Atty. Gen., Aug. 20, 1919).

The above opinion is in harmony with the decision in the Rio Grande case, wherein it was held (quoting from syllabus):

The fact that there is not enough water in the Rio Grande for the use of the inhabitants of both countries for irrigation purposes does not give Mexico the right to subject the United States to the burden of arresting its development and of denying to its inhabitants the use of a provision which nature has supplied entirely within its territory. The recognition of such a right is entirely inconsistent with the sovereignty of the United States over its national domain.

The rules, principles, and precedents of international law imposed no duty or obligation upon the United States of denying to its inhabitants the use of the water of that part of the Rio Grande lying entirely within the United States although such use results in reducing the volume of water in the river below the point where it ceases to be entirely within the United States (21 Ops. Atty. Gen. 274).

For a full discussion of international rights upon the Colorado River, see appendix, pages 318-343, part 2, Hearings Before Com-

mittee on Irrigation of Arid Lands, House of Representatives, Sixty-sixth Congress, first session.

While by all rules of international law the upper nation is entitled to make full use of the waters of an international stream rising wholly within the borders of the upper nation, nevertheless such matters are usually settled by treaty in the same manner as the settlement between the United States and Mexico respecting the use and benefit of the waters of the Rio Grande (above cited), wherein it is provided for an "equitable apportionment" of the waters of the stream between the two Governments.

The rule of equitable apportionment applies to the settlement by the Supreme Court of controversies between States over rivers common to two or more States of the Union (*Kansas v. Colorado*, 206 U. S. 46, 117).

This equitable apportionment of the waters of an interstate river may be made by one of two methods:

- (1) By interstate "compact or agreement" between the States, by consent of Congress; and
- (2) By suit between the States before the United States Supreme Court.

The latter method is the substitute, under our form of government, for war between the States. In other words, were it not for the provisions of our Constitution, the States might settle their differences over interstate rivers by resort to arms. But by the terms of the Constitution the right to resort to settlement by force was surrendered, and in lieu thereof was substituted the right to submit interstate controversies to the Supreme Court in original proceedings between the States (*Kansas v. Colorado*, 206 U. S. 46; *Rhode Island v. Massachusetts*, 12 Pet. 657).

A suit between the States is but a substitute for war. It is the last resort, and should not be resorted to until all avenues of settlement by compact have been exhausted. It has been suggested that the Supreme Court should announce the principle that no suit between States would be entertained without a preliminary showing that reasonable efforts had been made by the complaining State to compose the differences between it and the defendant State by mutual agreement or interstate compact. It would appear that the rule of settlement by treaty of international disputes over rivers common to two nations should likewise apply to settlements of controversies, present or possible, between States of the Union.

The object of the present legislation is to follow the international principle of settlement.

INTERSTATE COMPACTS RESPECTING USE OF WATERS OF INTERSTATE RIVERS

While, as we have already observed, various of the States have settled their controversies respecting boundaries, fisheries, etc., by interstate compact or by concurrent State legislation, having the same effect, this method of settlement of pending or threatened controversies respecting the use and distribution of the waters of interstate streams for irrigation and other beneficial purposes, has not been availed of. The right of adjoining States to the use and benefit of the waters of the streams common to both States has been considered by the court in the case of *Kansas v. Colorado* (185 U. S. 125; 206 U. S. 46), in which case it was held that the respective States were each entitled to an equitable portion of the waters of the common river, the extent of the use in each State to be determined upon the facts and circumstances of each particular case.

In the above-mentioned case the right of the United States to the use of the waters of the western streams was also considered and determined (pp. 87-93).

An equitable apportionment or allocation of the use and distribution of the waters of western interstate streams may be best accomplished through the efforts of the States represented by commissioners fully acquainted with the facts and the surrounding conditions, as well as with the future possibilities of use of water from the streams.

Principles of international law are applicable to the use and distribution of waters of interstate streams, and as regards compacts between the States.

the rule of decision is not to be collected from the decisions of either State, but is one, if we may so speak, of an international character (*Marlett v. Silk*, 11 Pet. 1, 23).

The rights of the nation in whose territory an international stream has its rise to the use and benefit of its waters for the development of its territory, irrespective of the effect upon the territory of a lower nation through which the stream passes on its way to the sea, were fully considered by Attorney General Judson Harmon, with respect to the claims made by the Republic of Mexico to damage by depletion of the waters of the Rio Grande, occasioned by uses in the United States. After exhaustive consideration of the various authorities upon the subject, he arrived at the conclusion that, while the United States had the right to utilize the entire flow of the Rio Grande in the necessary reclamation of the lands near the source of the stream, and while "precedents of international law imposed no liability or obligation upon the United States" to permit any of the water of the stream to flow to El Paso, nevertheless, he advised that the matter be treated

as one of policy and settled by treaty with Mexico (21 Ops. Atty. Gen. 274, 280-283).

It is safe to predict that most of the past controversies respecting the waters of western interstate streams could have been avoided had the matters in dispute been first submitted to competent compact commissioners. Friction between the Federal departments and the State authorities should be avoided by proper compacts between the States before construction proceeds upon rivers where such controversies may arise.

The Colorado River is still "young," as regards utilization of its water supply. Conditions look to enormous development during the next quarter of a century. Nature facilitates an easy allocation and settlement of all matters pertaining to the future utilization of the waters of this stream, if means to that end are taken prior to further construction and before friction develops. All apprehension of interference with the gradual and necessary future development upon the upper reaches of the stream by reason of earlier construction of enormous works on the lower river may be avoided by compact and agreement entered into prior to any future construction.

In fact, settlement of possible interstate controversies by interstate compacts is recommended by the United States Supreme Court (*Washington v. Oregon*, 214 U. S. 205, 218).

COMPACT BY "JOINT COMMISSION" BETWEEN STATES AND UNITED STATES

In another section we observe that the States, with consent of Congress, have full powers to make compacts with each other. Treaties between States are designated as agreements or compacts (Art. I, sec. 10, par. 3, Constitution).

The United States, in the exercise of its sovereign powers, may enter into compacts or agreements with one or more of the States, acting in their sovereign capacities.

The usual method of formulating such compacts or agreements, either between the States or between the States and the United States, is through the instrumentality of joint commissions thereunto duly constituted by legislative enactments and appointment by the executives of the State or the States and of the Nation. Such joint commissions are in all respects similar to the joint commissions constituted by separate Governments for formulation of treaties between independent nations. The term does not refer to a joint commission consisting only of members of one sovereignty and created by joint action of two or more legislative branches, but refers to that character of commission formed by two independent powers for the purpose of joint action to a common end.

Of the available examples of settlements of controversies between the United States and one or more of the States through the instru-

mentality of joint commissions, the most convenient example is that of the attempts at settlement of the boundary between the United States and Texas. Here two joint commissions, duly constituted by the National and State Governments, sought to settle the boundary line. The history of these attempts is found in the reports of the United States Supreme Court in the case of *United States v. Texas* (143 U. S. 621, 162 U. S. 1).

Throughout the many pages of the reports covered by the decisions in this case, the representative of the Government of the United States, on the one hand and that of the State of Texas on the other, are designated as commissioners, and the common agency for settlement of the controversy is designated as the joint commission or joint boundary commission.

Lest there be some question respecting the use of the term "joint commission," the following references to the opinions in the above case may be profitable:

By a treaty concluded August 25, 1838, between the United States and the Republic of Texas (8 Stat. 511), each of the contracting parties agreed to appoint "a commissioner" for the purpose of jointly agreeing upon the line between the two Republics.

By the act of June 5, 1858, chapter 92 (11 Stat. 310), enacted in harmony with the act of the Legislature of the State of Texas, February 11, 1854, it was provided that the President should appoint a representative to act in harmony with one from the State of Texas for the purpose of definitely locating the boundary between the Indian Territory and the State of Texas. The following references to the representatives so appointed and the name of the body so constituted appear in the decisions in the above case at the following pages: "A commissioner was appointed on behalf of the United States" (162 U. S. 1, 65); "the commissioners of the two Governments"—i. e., the Government of Texas and the Government of the United States (162 U. S. 1, 66); "a joint commission on the part of the United States and Texas commenced the work," etc. (143 U. S. 621, 635); "the commissioner on the part of the United States" (id.); "the commissioners of the United States and Texas" (id.).

By the act of January 31, 1885, chapter 47 (23 Stat. 296, 297), it was provided that the United States should appoint a representative who should work in conjunction with a representative to be appointed by the State of Texas, for the purpose of ascertaining the boundary. The following references appear as descriptive of the person and the agency:

"The two Governments (United States and State of Texas) appointed commissioners" (162 U. S. 1, 70); the joint body so constituted is defined as "the Joint Boundary Commission" (162 U. S. 1, 21); in the act by the Legislature of Texas authorizing the appointment

of its commissioner, the combined representation of the two Governments (State and National) is designated a "joint commission" (162 U. S. 1, 73); by the act authorizing the suit between the United States and Texas (26 Stat., 81, 92, ch. 182, sec. 25) the commission formed under the act of 1885 with the State of Texas is designated as "the joint boundary commission under the act of Congress," etc. (143 U. S. 621, 622); and by the act of 1885 "a joint commission was organized" (143 U. S. 621, 636).

Without further multiplication of examples, it would appear that where two representatives of the United States and of a State are duly appointed for the purpose of settling a boundary or some other dispute, such persons are "commissioners" and are collectively a "joint commission," and as the Court said (162 U. S. 76), "Under the act of Texas of 1882 and the act of Congress of 1885, the two Governments appointed commissioners," and the body so constituted was a "joint commission."

This exercise of the treaty-making powers of the two separate Governments (National and State) necessarily proceeds upon the fundamental fact that there are two separate and distinct Governments, each having its attributes of sovereignty. Of this we shall make mention in a separate memorandum.

COMPACTS BETWEEN STATE AND NATIONAL GOVERNMENTS

Controversies arising between two States or between the United States and a State or States may be settled by compact or agreement or by judicial determination by the United States Supreme Court. Diplomacy failing, the suit before the Court is the substitute for war. In either event the high contracting or litigating parties proceed upon the basis of sovereignties, each exercising independent and separate powers, and each exclusive within its proper sphere. As said by Mr. Justice Harlan in *United States v. Texas* (143 U. S. 621, 646):

The submission to judicial solution of controversies arising between these two Governments, "each sovereign with respect to the objects committed to it, and neither sovereign with respect to the objects committed to the other" (*McCulloch v. State of Maryland*, 4 Wheat. 316, 400, 410), but both subject to the supreme law of the land, does no violence to the inherent nature of sovereignty. The States of the Union have agreed, in the Constitution, that the judicial power of the United States shall extend to all cases arising under the Constitution, laws, and treaties of the United States, without regard to the character of the parties (excluding, of course, suits against a State by its own citizens or by citizens of other States, or by citizens or subjects of foreign States), and equally to controversies to which the United States shall be a party, without regard to the subject of such controversies, and that this court may exercise original jurisdiction in all such cases "in the which a State shall be party," without excluding those in which the United States may be the opposite party.

The power to enter into compact between a State or States and the United States is founded upon the same principle as the power

in the Supreme Court to settle controversies between States, as said by Mr. Justice Harlan in the foregoing case (p. 644):

We cannot assume that the framers of the Constitution, while extending the judicial power of the United States to controversies between two or more States of the Union and between a State of the Union and foreign states, intended to exempt a State altogether from suit by the General Government.

The above statement followed an analysis of the position taken by Texas (p. 641):

Texas insists that no such jurisdiction has been conferred upon this Court, and that the only mode in which the present dispute can be peaceably settled is by agreement, in some form, between the United States and that State. Of course, if no such agreement can be reached—and it seems that one is not probable—and if neither party will surrender its claim of authority and jurisdiction over the disputed territory the result, according to the defendant's theory of the Constitution, must be that the United States, in order to effect a settlement of this vexed question of boundary, must bring its suit in one of the courts of Texas * * * or that, in the end, there must be a trial of physical strength between the Government of the Union and Texas.

The Court decided that, inasmuch as the State and the United States did not settle their controversy by compact, the Supreme Court had the power to determine the controversy between the United States and the State.

The right to settle by compact proceeds upon the sovereignty of the State and the sovereignty of the Nation. As stated regarding another matter, "It is a matter between two sovereign powers" (*U. S. v. La.*, 127 U. S. 182, 189).

The following quotations bear upon this general subject of power and separate sovereignty:

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States, respectively, or to the people (Constitution of the United States, tenth amendment).

It must be recollected that previous to the formation of the new Constitution we were divided into independent States, united for some purposes, but in most respects sovereign (Chief Justice Marshall in *Sturgis v. Crowninshield*, 4 Wheat. 122, 192).

Reference has been made to the political situation of these States, anterior to its [Constitution] formation. It has been said that they were sovereign, were completely independent, and were connected with each other only by a league. This is true (Chief Justice Marshall in *Gibbons v. Ogden*, 9 Wheat. 1, 187).

The United States are sovereign as to all the powers of Government actually surrendered. Each State in the Union is sovereign as to all the powers reserved. It must necessarily be so, because the United States have no claim to any authority but such as the States have surrendered to them. Of course, the part not surrendered must remain as it did before (*Chisholm v. Georgia*, 2 Dall. 419, 435).

In America the powers of sovereignty are divided between the Government of the Union and those of the States. They are each sovereign with respect to the objects committed to it, and neither sovereign with respect to the objects committed to the other. (Chief Justice Marshall in *McCulloch v. Maryland*, 4 Wheat. 316, 410.)

Under the Articles of Confederation each State retained its sovereignty, freedom, and independence, and every power, jurisdiction, and right not expressly delegated to the United States. Under the Constitution, though the powers of the States were much restricted, still all powers not delegated to the United States, nor prohibited to the States, are reserved to the States, respectively, or to the people. And we have already had occasion to remark at this term, that "the people of each State compose a State having its own government and endowed with all the functions essential to separate and independent existence," and that "without the States in union there could be no such political body as the United States." Not only therefore can there be no loss of separate and independent autonomy to the States through their Union under the Constitution, but it may be not unreasonably said that the preservation of the States and the maintenance of their governments are as much within the design and care of the Constitution as the preservation of the Union and the maintenance of the National Government. The Constitution, in all its provisions, looks to an indestructible Union, composed of indestructible States. (Chief Justice Chase in *Texas v. White*, 7 Wall. 670, 725, decided in 1868.)

The General Government, and the States, although both exist within the same territorial limits, are separate and distinct sovereignties, acting separately and independently of each other, within their respective spheres. The former in its appropriate sphere is supreme; but the States within the limits of their powers not granted, or, in the language of the tenth amendment, "reserved," are as independent of the General Government as that Government within its sphere is independent of the States (Mr. Justice Nelson in *Collector v. Day*, 11 Wall. 113, 124, decided in 1870).

We have in this Republic a dual system of government, National and State, each operating within the same territory and upon the same persons, and yet working without collision, because their functions are different. There are certain matters over which the National Government has absolute control and no action of the State can interfere therewith, and there are others in which the State is supreme, and in respect to them the National Government is powerless. To preserve the even balance between these two governments and hold each in its separate sphere is the peculiar duty of all courts, preeminently of this—a duty oftentimes of great delicacy and difficulty (Mr. Justice Brewer in *South Carolina v. United States*, 199 U. S. 437, 448, decided in 1905).

Each State is subject only to the limitations prescribed by the Constitution and within its own territory is otherwise supreme. Its Internal affairs are matters of its own discretion (*id.*, 454).

The powers affecting the internal affairs of the States not granted to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, and all powers of a national character which are not delegated to the National Government by the Constitution are reserved to the people of the United States (Justice Brewer in *Kansas v. Colorado*, 206 U. S. 46, 90).

In the case of *Kansas v. Colorado*, last above cited, the United States intervened, in effect claiming national control of the waters of western streams to be administered under the doctrine of prior appropriation. In answer to the primary question of national control, regardless of the rights of the States, *inter sese*, Justice Brewer, after observing that the United States had an interest in the public lands within the Western States and might legislate for their reclamation, subject to State laws, thus disposed of the claim of national control of western interstate streams:

Turning to the enumeration of the powers granted to Congress by the eighth section of the first article of the Constitution, it is enough to say that no one of them by any implication refers to the reclamation of arid land. * * * No independent and unmentioned power passes to the National Government or can rightfully be exercised by the Congress. * * * But it is useless to pursue the inquiry further in this direction. It is enough for the purpose of this case that each State has full jurisdiction over the lands within its borders, including the beds of streams and other waters. [Citing cases.] * * * It may determine for itself whether the common law rule in respect to riparian rights or that doctrine which obtains in the arid regions of the West of the appropriation of waters for the purposes of irrigation shall control. Congress cannot enforce either rule upon any State. * * * One cardinal rule, underlying all the relations of the States to each other, is that of the equality of right. Each State stands on the same level with all the rest. It can impose its own legislation on no one of the others, and is bound to yield its own views to none (*Kansas v. Colorado*, 206 U. S. 46, 87-97).

In concluding the above decision, the Supreme Court dismissed the case without prejudice to the right of Kansas to institute new proceedings

whenever it shall appear that through a material increase in the depletion of the waters of the Arkansas by Colorado * * * the substantial interests of Kansas are being injured to the extent of destroying the equitable apportionment of the benefits between the two States resulting from the flow of the river (206 U. S. 46, 117).

The United States has large interests in the form of public lands within the Colorado River area, and has already constructed large irrigation works near Yuma, Ariz., and is engaged in irrigation of large areas along the lower portion of the stream and in the vicinity of the Salton Sea. The seven Colorado River States have already enacted legislation authorizing a commissioner for each of the States, to meet with a representative of the United States, for the purpose of formulating and entering into a compact or agreement respecting the future utilization and disposition of the waters of the Colorado River and its tributaries. Any such compact will be of no binding force or effect until ratified by the legislatures of each of the States and by the Congress of the United States. The seven State sovereignties have legislated. The governor of each has appointed a commissioner pursuant to the legislation. The governors have collectively waited upon the President and presented their written request for national legislation authorizing the appointment by the President of a representative for the United States.

NOTE.—Since the foregoing memorandum was written the United States Supreme Court decided, in *Wyoming v. Colorado*, that in cases between two States both of which recognize the doctrine of prior appropriation as a matter of local law, the Court will apply the fundamental principles of the doctrine in the allocation of the waters of a river common to the two States and will so apportion the dependable average annual flow between the States that the older established uses in both States will receive first protection. The doctrine so announced leaves the Western

States to a rivalry and a contest of speed for future development. The upper State has but one alternative, that of using every means to retard development in the lower State until the uses within the upper State have reached their maximum. The States may avoid this unfortunate situation by determining their respective rights by interstate compact before further development in either State, thus permitting freedom of development in the lower State without injury to future growth in the upper.

(By the attached compact the objectionable features of leaving the destiny of the States to a wild scramble in a contest of speed for first development are avoided. The future uses within the upper State, according to its growing necessities, are protected without interfering with a similar growth in the lower State. Each State may proceed in an orderly manner in pace with the normal course of events, free from any cloud of threatened penalties.)

SUPPLEMENTAL REPORT OF DELPH E. CARPENTER,
COMMISSIONER FOR COLORADO, COLORADO RIVER
COMMISSION

(Printed in full in Senate Journal (Colorado, 1923, pp. 888-895, inclusive) as a part of the proceedings in re second reading of Senate Bill 410—"a bill for an act to approve the Colorado River Compact")

(Original report printed in Senate Journal of January 5, 1923, pp. 75-86, inclusive)

DENVER, COLO., *March 20, 1923.*

Senator M. E. BASHOR,

Chairman, Senate Committee on Agriculture and Irrigation; and

Hon. ROYAL W. CALKINS,

*Chairman, House Committee on Agriculture and Irrigation,
Denver, Colo.*

GENTLEMEN: Pursuant to your request I respectfully submit the following observations respecting certain provisions of the Colorado River Compact:

First and foremost, it should be ever kept in mind that the intent of the compact is to be ascertained from a consideration of the entire instrument and that each clause must be considered in connection with other clauses.

Art. III, par. (b): Paragraph (b) of Article III does not authorize a cumulative increase of beneficial consumptive use of waters to the extent of 1,000,000 acre-feet per annum. This paragraph means that the lower basin may increase its annual beneficial consumptive use of water 1,000,000 acre-feet and no more.

Paragraph (a) of said article permanently apportions to the lower basin the annual beneficial consumptive use of 7,500,000 acre-feet

of water which includes all water necessary for the supply of any rights which may now exist.

Paragraph (b) permits the lower basin to increase its annual beneficial consumptive use of water 1,000,000 acre-feet. The two paragraphs permit an aggregate annual beneficial consumptive use of 8,500,000 acre-feet, and no more. The words "per annum," as used in paragraph (b) are not synonymous with the word "annually." No cumulative increase is intended by that paragraph.

ARTICLE VIII

Article VIII is not intended to authorize, constitute or result in any apportionment of water to the lower basin beyond or in addition to that made in paragraphs (a) and (b) of Article III.

The Imperial Valley project which diverts water below Yuma, Ariz., is said to have diverted the entire low flow of the river for a period of several days in October during 3 of the past 10 years. Those in control of that project feared that additional development in the upper basin (before storage facilities had been provided for the lower basin) would materially decrease the October flow of the river at Yuma. Storage facilities constructed in the great canyon of the river will care for the entire supply necessary for the Imperial Valley. While the Imperial Valley probably has no legitimate claim which it may enforce against the upper basin, it was urged, nevertheless, that whatever rights such users may claim should not be disturbed until time and opportunity may afford the building of storage works.

The apportionment to the lower basin by paragraph (a) of Article III, provides that such apportionment "shall include all water necessary for the supply of any rights which may now exist." Any claims of the Imperial Valley therefore would be satisfied out of such apportionment of water. The storage of water in reservoirs, as provided in Article VIII, must be made "not in conflict with Article III." After storage is provided, water stored in harmony with Article III will be available to the Imperial Valley project and "present perfected rights" on the lower river shall thereafter be satisfied from the water stored in harmony with Article III and their claims, if any, against the upper basin are thereafter cut off by the substitution of stored water for direct flow.

Article I provides that "an apportionment of the use of part of the water of the Colorado River system is made to the upper basin and also to the lower basin with provision that further equitable apportionment may be made."

Paragraph (f) of Article III provides that "further equitable apportionment of the beneficial uses of the waters of the Colorado system unapportioned by paragraphs (a), (b), and (c) may be made * * *

if and when either basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b).” The storage of water under Article VIII must be in harmony with paragraph (f) of Article III, as well as with paragraph (a), and the latter paragraph provides that the apportionment to the lower basin “shall include all water necessary for the supply of any rights which may now exist” and the second paragraph of Article VIII provides that all other rights (than present perfected rights) “shall be satisfied solely from the water apportioned to that basin in which they are situate.”

Taking the compact as a whole and construing its provisions together, Article VIII does not authorize, constitute or result in any apportionment of water to the lower basin beyond that made in paragraphs (a) and (b) of Article III.

It will be noted that Article VIII does not concede that “present perfected rights” in the lower basin have any claims against the upper basin, the language being “claims of such rights, if any, by appropriators or users of water in the lower basin against the appropriators or users of water in the upper basin.” In other words any such claims are neither acknowledged nor denied and their legal status, whatever it may be, is temporarily left as it was at the time of the compact. But when the reservoir is constructed, any claims against the upper basin by such “present perfected rights” are thereafter cut off.

ARTICLE III, PARAGRAPH (e)

Paragraph (e) of Article III is reciprocal. It should be construed with paragraph (b) of Article IV. The States of the lower division cannot require the delivery of water at Lees Ferry, by the upper division, which cannot be reasonably applied to domestic and agricultural uses in the lower basin. The clause preserves the dominant rights of agricultural and domestic uses over power uses and only prevents the withholding of water for power development within the upper basin to the extent that such withholding may encroach upon the supply necessary for agricultural and domestic uses in the lower basin. In other words the compact means that power claims by the lower basin cannot compel the upper basin to turn down any water which cannot reasonably be applied to domestic and agricultural uses in the lower basin. This permits the first use of the waters of the upper basin for the generation of power, limited only by the agricultural and domestic demands in the lower basin. All power uses in both basins are made “subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes” (referring to agricultural and domestic uses).

ARTICLE III, PARAGRAPH (f)

The compact reserves for future apportionment (between the two basins of the river) all of the waters of the river and its tributaries unapportioned by paragraphs (a), (b), and (c) of Article III. This is specifically provided in paragraph (f) of Article III. No such apportionment can occur (except by unanimous consent) until after October 1, 1963 (40 years). If at any time after 40 years either basin shall have reached its total beneficial consumptive use, as provided in paragraphs (a) and (b) of Article III, either basin may demand an equitable apportionment of the beneficial uses of the remainder of the water of the river. This does not prevent a diversion and use of water in either basin in excess of the apportionment but all such excess diversions will be made at the peril of the users. This applies to the excess uses made either before or after the expiration of the 40-year period. The apportionment of water to supply any such excess uses will be a matter entirely within the keeping and jurisdiction of the new compact commission and will require its unanimous approval.

By the compact the unapportioned waters are reserved for "further equitable apportionment" between the two basins. This negatives any suggestion that excess uses in either basin will be regarded as legal "appropriations." Any such excess uses will be by sufferance and without legal foundation but such users will not be prevented from pressing their equitable claims in the future apportionment provided for in paragraph (g) of Article III. This will apply to all excess uses made by means of enormous reservoirs in the lower basin capable of storing and beneficially using (for power or other uses) all of the flow of the river which may pass Lees Ferry. All such uses, made by means of such structures, are and will be subject to the Colorado River compact and can perfect no claim which will prevent further "equitable apportionment" between the basins at any time after 40 years.

ARTICLE IV, PARAGRAPH (c)

Intrastate control of appropriations made within the apportionments provided by the compact is specifically reserved by paragraph (c), Article IV. This includes such regulations as each State may provide by its constitution and laws respecting the preference of one class of use over other classes of use. In other words the constitution and laws of Colorado control the details of appropriation, use, and distribution of water within the State. The compact does not attempt to invade such matters of local concern. When approved, the compact will be the law of the river as between the States. It deals wholly with interstate relations. The paragraph refers to intrastate control. Whatever the intrastate regulation and control may be it cannot affect

the interstate relations. No law of any State can have extraterritorial effect or interfere with the operation of the compact as between the States.

"BENEFICIAL CONSUMPTIVE USE"

In my original report (printed in the Senate Journal of January 5, 1923) I discussed and defined the term "beneficial consumptive use." In addition to the discussion there contained, I might add there is a vast difference between the term "beneficial use" and the term "beneficial consumptive use." A use may be beneficial and at the same time nonconsumptive or the use may be partly or wholly consumptive. A wholly consumptive use is a use which wholly consumes the water. A nonconsumptive use is a use in which no water is consumed (lost to the stream). "Consume" means to exhaust or destroy. The use of water for irrigation is but partially consumptive for the reason that a great part of the water diverted ultimately finds its way back to the stream. All uses which are beneficial are included within the apportionments (i. e. domestic, agricultural, power, etc.). The measure of the apportionment is the amount of water lost to the river. The "beneficial consumptive use" refers to the amount of water exhausted or lost to the stream in the process of making all beneficial uses. As recently defined by Director Davis, of the United States Reclamation Service, it is the "diversion minus the return flow" (Congressional Record, January 31, 1923, p. 2815). Water diverted and carried out of the basin of the Colorado River by the Strawberry, Moffat, or other tunnels or by canal into the Imperial Valley is wholly consumed as regards the Colorado River, because no part of it ever returns to that stream system.

AMOUNT OF FLOW AT LEES FERRY

The net measured flow of the Colorado River at Lees Ferry (after all uses above) was 16,000,000 acre-feet from September 30, 1921, to September 30, 1922, according to the report of the Director of the United States Geological Survey. The net flow of the whole river (after all uses above Yuma) has been measured and recorded at Yuma, Ariz. (below all tributaries including the Gila River), since 1899. The mean or average flow at Yuma for the 20-year period 1903-22 is 17,400,000 acre-feet per annum. The flow September 30, 1921, to September 30, 1922, at Yuma was 17,600,000 acre-feet. This was 200,000 acre-feet (1 percent) greater than the 20-year average. (See Congressional Record, January 31, 1923, p. 2819.) In other words, the flow of the river for that period was 101 percent of normal. The flow of 16,100,000 acre-feet at Lees Ferry therefore represents 101 percent of the average annual net flow of the river at that point (after deducting all water consumed during uses in the entire upper

basin). Assuming that 2,500,000 is now annually consumed during uses in the upper basin, we would obtain a "reconstructed river" by adding that amount to 16,100,000 acre-feet, making an aggregate of 18,600,000 acre-feet annual discharge, which is 101 percent of the 20-year annual average.

It is evident that the States of the upper basin may safely guarantee 75,000,000 acre-feet aggregate delivery at Lees Ferry during each 10-year period. This would mean an average annual delivery of 7,500,000 acre-feet as against 15,940,594 acre-feet present net annual average flow (100 percent) at Lees Ferry or 18,415,842 acre-feet natural average annual flow (100 percent) on the basis of a "reconstructed" river.

I herewith attach, for your information, copies of certain telegrams which will be self-explanatory.

Very truly yours,

DELPH E. CARPENTER,
Commissioner for Colorado.

[Telegram]

CAPITOL BUILDING,
Denver, Colo., February 10, 1923.

Hon. HERBERT HOOVER,
Chairman, Colorado River Commission,
Washington, D. C.:

Do you concur with me that the intent of the commission in framing the Colorado River Compact was as follows:

That paragraph (b) of Article III means that the lower basin may increase its annual beneficial consumptive use of water 1,000,000 acre-feet and no more?

That Article VIII is not intended to authorize, constitute, or result in any apportionment of water to the lower basin beyond that made in paragraphs (a) and (b) of article III?

DELPH E. CARPENTER.

[Telegram]

WASHINGTON, D. C., *February 12, 1923.*

DELPH E. CARPENTER,
State Capitol, Denver, Colo.:

I concur with you, and shall so advise Congress in my report, that the intent of the Commission in framing the Colorado River compact was as follows:

First, that paragraph (b) of Article III means that lower basin may acquire rights under the compact to annual beneficial consumptive use of water in excess of the apportionment in paragraph (a) of that article by 1,000,000 acre-feet and no more. There is nothing in the compact to prevent the States of either Basin using more water than the amount apportioned under paragraphs (a) and (b) of Article III, but such use would be subject to the further apportionment provided for in paragraph (f) of Article III and would vest no rights under the present compact.

Second, That Article VIII is not intended to authorize, constitute, or result in any apportionment of water to the lower basin beyond that made in paragraphs (a) and (b) of Article III.

HERBERT HOOVER.

[Telegram]

DENVER, COLO., *February 13, 1923.*

R. H. McKisick,

Deputy Attorney General, Sacramento, Calif.:

Do you concur with me that intent of Commission in framing Colorado River Compact was as follows:

That paragraph (b) of Article III means that the lower basin may increase its annual beneficial consumptive use of water 1,000,000 acre-feet and no more?

That Article VIII is not intended to authorize, constitute, or result in any apportionment of water to the lower basin beyond that made in paragraphs (a) and (b) of Article III?

DELPH E. CARPENTER.

[Telegram]

SACRAMENTO, CALIF., *February 13, 1923.*

HON. DELPH E. CARPENTER,

State Capitol, Denver, Colo.:

Am of opinion that paragraph (b) of Article III permits increase of annual beneficial consumption use of water by lower basin to 8,500,000 acre-feet total or 1,000,000 in excess quantity apportioned each basin in perpetuity by paragraph (a), Article III, and no more. When both paragraphs are read together no other construction tenable. "Per annum" not synonymous with "annually."

Article VIII is not intended to authorize, constitute, or result in any apportionment of water to the lower basin beyond that made in paragraphs (a) and (b) of Article III, but means that if and when the water passing Lees Ferry as provided in paragraphs (d) and (e), Article III, is impounded within specified storage, claims of lower basin appropriators or users adverse to those of upper basin appropriators or users shall be transferred to and satisfied from the water so stored.

R. T. McKisick.

[Telegram]

SACRAMENTO, CALIF., *February 15, 1923.*

DELPH E. CARPENTER,

Denver, Colo.:

My interpretation of Articles III and VIII well expressed in McKisick's wire of the thirteenth.

W. F. McCLURE.

The following is from letter of February 16, 1923, of Arthur P. Davis, Director United States Reclamation Service, addressed to Clarence C. Stetson, executive secretary, Colorado River Commission, interpreting paragraph (b), Article III and Article VIII, Colorado River compact:

"Article VIII provides that all of the rights of the lower basin shall be satisfied from the water apportioned to that basin. There is no indication that any portion of its needs shall be taken from the allotment to the upper basin. The assumption that the lower basin could claim priority for the appropriation of water in a reservoir is an assumption that the compact is invalid, for this is just the contingency which it was designed to meet. The proviso that a storage reservoir of 5,000,000 acre-feet or more shall take care of the perfected rights in

the lower basin is designed to lift the ban upon the diversion of the low-water flow from the upper tributaries after the construction of such a reservoir, which will be filled from the floodwaters, but which is to be charged against the allotment of the lower division as specifically provided in paragraph (a), Article III. This provides conclusively against the supposition that the stored waters are not to come out of the allotment to the lower basin.

"The assumption that paragraph (b) of Article III has no limit is its own refutation on account of the absurdity of that assumption. It would in a few years, if so construed, absorb more than the entire flow of the river, which reduces the assumption to an absurdity. Furthermore, the language is specific as the apportionment is for the consumptive use of 1,000,000 acre-feet per annum and cannot be construed to mean 2,000,000 acre-feet per annum or any other amount."

(NOTE.—The Colorado Legislature also had before it, during the debates in re approval of Colorado River compact, the report of Herbert Hoover, representative for the United States, the same being Document No. 605, 67th Congress, 4th session, House of Representatives; also extension of remarks of Congressman Carl Hayden, of Arizona. See Congressional Record, January 30, 1923, Sixty-seventh Congress, 4th session.)

Appendix 211

THE COLORADO RIVER COMPACT:

**REPORT OF JAMES G. SCRUGHAM,
COMMISSIONER FOR NEVADA**

(Extract from Inaugural Message of Gov. James G. Scrugham to the
Legislature of 1923 (31st sess.))

IRRIGATION AND POWER DEVELOPMENT

The great handicap to agricultural and power development in Nevada has been the fact that no satisfactory regulation, distribution, or storage of water could be made on any stream until the relative rights of the parties of interest had been determined.

The necessity for a definite determination of water rights was realized long ago by our administrative and legislative officials, and adequate legislation has been provided. Through the medium of frequent meetings and discussions the issues have been clarified and a better understanding of the vexing problems involved has been secured by practically all of the water users of the State. The Engineer's findings on the water rights of the major stream systems of Nevada are now practically completed and ready for final action by the courts.

Plans for two great impounding reservoirs to be located wholly or partly in Nevada have been made through cooperation of state and federal interests. One of these reservoirs, for impounding the floodwaters of the Truckee River, will be located in the Spanish Springs Valley near Reno, and the other, for the impounding of the waters of the Colorado River, will be located at either Boulder or Black Canyon, near Las Vegas. Another reservoir is being planned by private interests for utilization of floodwaters of the Carson River. Opportunities exist for profitable storage of floodwaters on the Virgin and Humbolt Rivers.

It is probable that there is a considerable acreage of land in Nevada which can be successfully irrigated from ground waters. However, under present conditions, the speculative element encountered in underground water explorations is too great to warrant its being undertaken by persons of limited financial resources. The large majority of such experiments have been failures, chiefly because of a

lack of understanding of the economic and technical factors necessary for success.

Some of the greatest undeveloped water-power sites in the entire world lie on the Colorado River in southern Nevada. Many hundreds of thousands of horsepower can be cheaply developed by waiting capital, when a definite authority is established through state and federal cooperation which will adequately protect the necessary investments. Electrochemical and metallurgical industries will congregate where the lowest-cost power and raw materials can be obtained.

The Legislature of 1921 initiated an investigation of Nevada's equity in the Colorado River through creation of the Colorado River Commission. This Commission has thoroughly performed the duties assigned. Surveys were made to determine the areas of land for which this State claims water rights. In conjunction with representatives of other interested States, the Nevada Commission conducted a series of conferences looking to a satisfactory adjustment of the complex problems of river development. As the Constitution of the United States contains a clause forbidding the States of the Union to enter into an agreement without federal consent, it was necessary for the Government to give its approval to the proposed negotiations. This was done in August 1921 by legislation authorizing the negotiations, providing for the appointment of a representative who should participate to protect the interests of the United States, and specifying that the negotiations between the States should be terminated by January 1, 1923.

The President in December 1921 appointed Secretary Hoover of the Department of Commerce as Federal Representative. The first meetings of the Commission were held in Washington in late January 1922. At these meetings, at which Secretary Hoover was elected permanent chairman of the Commission, and after serious discussion of various proposals for a compact, it was decided that before reaching a definite determination it would be best to hold a series of hearings in the seven interested States, where different viewpoints could be heard at first hand by the Commissioners. Meetings were then held in all of the interested States.

At the final meeting a form of compact was evolved which had the full approval of the representatives of all the interested States and the Federal Government. This compact will be immediately submitted for your consideration. It has my unqualified approval, and I deem its endorsement by your body is imperative in the interest of an early development of the Colorado River projects.

In order that the interests of the State of Nevada in such projects may be fully promoted, I recommend the retention of the Colorado River Commission with its present duties and powers.

**THE COLORADO RIVER COMPACT:
REPORT OF S. B. DAVIS, JR., COMMISSIONER FOR
NEW MEXICO**

JANUARY 5, 1923.

HON. JAMES F. HINKLE,
*Governor of New Mexico,
Santa Fe, New Mexico.*

DEAR SIR: There has been filed with the Secretary of State, a duly certified copy of the Colorado River Compact recently signed at Santa Fe by the commissioners representing the United States and the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. This compact is the result of legislative action by the United States and the several states authorizing the appointment of commissioners to form an agreement for the equitable division among the states of the waters of the Colorado River. The New Mexico act is found as Chapter 121 of the Laws of 1921.

The Colorado River is the third largest stream in the United States in volume of discharge. Several million acres of land are now irrigated from it, but there is still a very large flow, many million acre-feet, which is unappropriated and unused.

All of the states interested have large areas of land on which the water of the river could be used and all have ambitious projects looking to their development. Such a condition necessarily gives rise to interstate conflict. That situation on other interstate streams has caused frequent disputes in the past giving rise to long, tedious, and expensive litigation usually with results unsatisfactory to both parties. So long as the rights to the use of water are doubtful, development is necessarily delayed, for irrigation projects involve large expenditures of money and their success must depend upon the certainty of water supply. The underlying thought behind the compact was the correction of this situation by substituting agreement for litigation and by making an apportionment of the water among the states so that all might know the extent of their rights in advance of the construction of any works.

All of the acts which authorize the appointment of commissioners provide that the compact agreed upon must be approved by the Congress of various states before it becomes effective. It is therefore

appropriate that it be submitted to the New Mexico Legislature for its consideration at the present session.

The compact does not allocate water to each individual state as that plan was found to be impractical for several reasons. Instead of this, it divides the states into two groups, the Lower composed of the territory lying below Lee's Ferry and situated mostly in the States of Arizona and California, and the Upper comprising the territory above Lee's Ferry.

Lee's Ferry is the point at which the river enters a canyon many miles in length below the mouth of the San Juan River. New Mexico falls in both the Upper and the Lower divisions, the drainage of the San Juan being in the Upper and that of the Gila and the tributaries of the Little Colorado in the Lower.

Under the compact, the waters are divided between the two basins, each being entitled to the use of seven and one-half million acre-feet per annum, with an agreement on the part of the Upper States that they will not diminish the flow of the river below a total of seventy-five million acre-feet in any ten-year period. This amount of water is ample for the present needs of both divisions and also for any projects which can be reasonably anticipated in the future. There is a provision for a further distribution of the surplus waters of the river by another commission at the end of forty years, at which time an apportionment may be made in accordance with the conditions then existing, which, of course, cannot now be foreseen.

New Mexico's principal interest in the matter is in the development of the lands in San Juan County. The San Juan River with its tributaries furnishes about one-sixth of the flow of the Colorado River, having a volume of some three million acre-feet per annum passing the state line. There are ample lands on which this water can be utilized and which need nothing more to become fertile and productive. The largest projects contemplated are on the San Juan proper and on the Las Animas. I shall not discuss them in this report as information regarding them is available in the files of the State Engineer. I may mention, however, that the available lands in New Mexico constitute the largest single area subject to irrigation in the entire Colorado River Basin, excepting perhaps those in the Imperial Valley.

There are several very large sites for power dams in the Basin and a number of power projects are in contemplation. New Mexico is not directly interested at this time because of their distance from us which probably makes the attaining of power on them for any large portion of this state economically impractical under existing methods for the transmission of electrical power. How rapidly such methods may develop and how soon it may become possible for us to obtain power from these sources is a matter of prophecy or interesting speculation.

None of the large power sites are within our boundaries. The use of the water for power purposes is made by the compact subservient to its use for agriculture as is entirely proper.

The compact contains provision for the settlement of disputes which may arise under it by representatives of the interested states to be appointed by the governors—another attempt to adjust the controversies without recourse to litigation.

This agreement was reached among the states only after long investigations and hearings extending over two years and carried on in all of the states interested, and after protracted discussions and negotiations, the last meeting at Bishop's Lodge having been a continuous conference for nearly three weeks. It summarizes the best thought and effort of the representatives of the states interested, and of the United States. In some respects it is the result of compromise as is inevitable in the solving of a situation made up of conflicting desires, diverse ideas, and opposing ambitions. I believe it is an eminently just solution of a perplexing problem and that under it the rights of all the states are fully protected. It is a particularly fair agreement for New Mexico. Its ratification will constitute the first step toward the development of what is, without doubt, the greatest undeveloped resource of this state.

As the New Mexico representative on this Commission, I have no hesitation in urging that this state ratify the compact by proper legislative action.

A copy of the proposed compact is attached.

Yours very respectfully,

(Signed) S. B. DAVIS, Jr.

Appendix 213

**THE COLORADO RIVER COMPACT:
REPORT OF R. E. CALDWELL, COMMISSIONER
FOR UTAH**

Mr. President and Members of the Utah Senate:

It is my purpose to present to you in outline, matters concerning, pertaining to, and pertinent to the Colorado River Compact which is before you for ratification. I shall sketch the history of it, give you a few reasons for it, and indicate to you the scope and gist of it.

The Colorado River compact as it is before you, is the direct result of the work of the Commission which has come to be known as the Colorado River Commission.

REASON FOR THE COMMISSION

Chapter 68, Session Laws of the State of Utah, 1921, is an act providing for the appointment of a representative on behalf of the State of Utah to negotiate a compact and agreement between and among the States of the Colorado River Basin, and between the States of the Colorado River Basin and the United States of America respecting the use and distribution of the waters of the Colorado River and its tributaries, and the rights of said States thereto.

On the 14th day of January 1922, at the pleasure of Hon. Charles R. Mabey, Governor, I had the honor to receive an appointment as the representative of the State of Utah provided for by statute. Since receiving the appointment I have functioned as such representative, and I am now directed by the Governor and requested by your President to make a report of my stewardship and that of the Colorado River Commission to you gentlemen of the Senate.

Possibly what I shall say is a recapitulation of much of what you have already heard and know of this important matter.

It is my hope that when I have done this that there will have arisen in your minds out of your general conception of the Colorado River problem pertinent questions which you will wish to ask, and, time permitting, I should like to engage with you in a brief informal discussion believing it to be the surest way of getting before you the things which you wish to and should know.

Every raindrop, congealed, or fluid, which falls on a surface sloping to the Colorado River is necessarily a matter of consideration, and is affected by any use or control of the Colorado River.

The Colorado River is erratic in its flow, carrying past Yuma, Arizona, as much as 240,000 second-feet in floodtime and as low as 2,600 second-feet in the driest portion of the driest year. In acre-feet, the river flows annually, amounts varying from twenty-six million down to approximately ten million. Obviously, the best conservation of the water of the river and its potential value is to be accomplished by its control in such a manner that the flow may be equalized from wet to dry years, and within each year from the wet to dry season. This control may be accomplished quite thoroughly, if not completely, by utilization of available storage on the river.

The unprecedented storage necessary for this control cannot well be undertaken unitedly by all the States of the Colorado River Basin or at all, perhaps, unless there is settled in advance, upon some basic principles, and upon good irrigation and water-rights practice, the rights of the various interested States to the use of the water of the Colorado River and its tributaries. For this reason and purpose, the Colorado River Commission was formed in accordance with appropriate concurrent legislation of the States of Arizona, Colorado, California, New Mexico, Nevada, Utah, and Wyoming, and the United States of America.

THE COMMISSION

The Basin States mentioned above, each appointed a representative to act on the Commission, and the United States of America, as provided by Congress, appointed a representative to sit with the Commission in its deliberations on behalf of and in the interests of the United States of America which had given its consent that a compact might be entered into between and among the Basin States. The personnel of the Commission is as follows:

Hon. Herbert Hoover, Secretary of Commerce, representing the United States of America.

Hon. W. S. Norviel, State Water Commissioner, representing the State of Arizona.

Hon. Delph E. Carpenter, former Attorney General, and now a prominent water rights lawyer of the State of Colorado, representing the State of Colorado.

Hon. W. F. McClure, State Engineer, representing the State of California.

Hon. James G. Scrugham, State Engineer, representing the State of Nevada.

Hon. Stephen B. Davis, Jr., Supreme Court Justice, representing the State of New Mexico.

Hon. R. E. Caldwell, State Engineer, representing the State of Utah.

Hon. Frank C. Emerson, State Engineer, representing the State of Wyoming.

The representatives were appointed, respectively, by Hon. Warren G. Harding, President of the United States of America.

Hon. Thos. E. Campbell, Governor of the State of Arizona.

Hon. O. H. Shoup, Governor of the State of Colorado.

Hon. Wm. D. Stephens, Governor of the State of California.

Hon. Emmet D. Boyle, Governor of the State of Nevada.

Hon. Merritt C. Mecham, Governor of the State of New Mexico.

Hon. Charles R. Mabey, Governor of the State of Utah.

Hon. Robert D. Carey, Governor of the State of Wyoming.

MEETINGS

All the meetings of the Colorado River Commission were held during the year of 1922.

On January 26th, the Colorado River Commission appointees met in Washington, D. C., at the office of Mr. Herbert Hoover, Secretary of Commerce, presented their credentials, were accredited, and the Colorado River Commission was formally brought into existence.

At the first meeting of the Commission, held January 26th, in Washington, D. C., at the offices of Mr. Hoover, he was elected by the unanimous vote of the State representatives to the position of Chairman of the Commission, from which time all meetings were held under his chairmanship and leadership.

In all, seven meetings were held in the office of the Honorable Herbert Hoover, Secretary of Commerce, Washington, D. C.

In these meetings much of general interest and importance was discussed, and permit me to say that a complete record of these meetings is on file at this time in the office of the State Engineer. At this time no basic principles were laid down, no conclusions arrived at or anything very definitely accomplished. The Commissioners and the Chairman received, however, the necessary opportunity to get acquainted with one another's views, personalities, attitudes, and state requirements, which acquaintance was invaluable in the later work of the Commission. The last session held in Washington adjourned on the 30th day of January, to meet at an early date somewhere in the West in some of the Basin States at the call of the Chairman.

The first of these meetings of the Colorado River Commission were held at Phoenix, Arizona, on the 15th, 16th, and 17th of March. Thereafter meetings were held on March 20th at Los Angeles; at Salt Lake City on March 27th and 28th; at Grand Junction, Colorado,

March 29th; at Denver, March 31st and April 1st; and at Cheyenne, April 2nd.

These meetings held in the various States above-mentioned, had the double purpose of permitting the interested States to be heard as to their views on the Colorado River water-right problems and of acquainting the members of the Commission and its Chairman with the facts, so far as they could be gleaned, from those who wished to be heard before the Commission. A complete record of all these sessions is on file in the State Engineer's Office for the State of Utah.

At Denver, Colorado, at an informal session held in the Palace Hotel, Denver, the Commission agreed to meet at the call of the Chairman somewhere in the West, approximately sixty days after the record was complete and in the hands of the various commissioners.

It was later proposed to hold this meeting at Santa Fe, New Mexico, August 1st, but for unavoidable reasons it was postponed to meet November 9th. It began with a session on November 9th, and ended with a session on the 24th day of November.

The sessions held at Santa Fe were attended by all of the members of the Commission and the Chairman, which members were spokesmen for the respective States and the Chairman for the United States of America. Though all the sessions except one were executive, it was agreed by the members of the Commission that certain persons might be admitted. Each commissioner was permitted to have, if he wished it, at each session a legal and an engineering adviser, also such governors of the Basin States as were on the ground were invited to be present at the session. The participants in the discussions were the members of the Commission and the Chairman.

The sessions at Santa Fe were most interesting, and I think of great general interest and benefit. The result of these sessions is a compact signed by all of the State representatives and the representative of the United States of America.

A complete record of these sessions, I understand, will be made available for the files of each of the States concerned and the Governor of each State has been furnished with a certified copy of the compact as prepared and signed.

THE COMPACT

The compact as signed seemed to meet with the favor of all of the Commissioners and of the Chairman of the Commission. The compact though signed by the representatives of the States and the Chairman of the Commission is not binding until ratified by each of the legislatures of the several States and by the Congress of the United States. I have heard of no objection to the ratification so far from any State or from the Federal Government except that it

has been reported through newspapers that Governor Geo. W. P. Hunt, of Arizona, is opposed to the ratification; also it is reported that certain factions in Arizona are opposing the ratification of the compact.

I believe the compact to be fair in every way to Utah and to all of the other interested States and to be of such a nature that it will permit the fullest unrestricted development of all of the water resources of the Colorado River and its tributaries without doing violence to the rights or necessities of any Basin State.

It is entirely possible that without any compact whatever, the river would finally have been developed in such a way as to get a maximum benefit from the river for all concerned but it would have been after tremendous and prolonged litigation, unnecessary bitterness, suspicions and ill will. The big thing that the compact will do if ratified is to prevent litigation and knit the States together in a close and satisfied relationship working harmoniously and effectively for the full scientific development of all of the resources pertaining to the river.

This compact is a departure in several things. It distinguishes between different classes of rights and attempts to relegate each right to its appropriate relative position. Water rights for agriculture, including water rights for industrial, domestic, municipal, and culinary purposes, and excluding water rights for the development of electric power, are dominant as between the Upper Basin and the Lower Basin. Water rights for power purposes are secondary to the dominant rights and navigation is made subservient to all rights on the river. Thus, the rule of priority in this respect is for the first time definitely set aside for a special reason. For the first time a drainage area is divided into Upper and Lower Basins and a river divided between them for the benefit of the river system.

As between the two divisions the privilege to initiate a right by mere storage of water is abrogated or at least abridged.

The compact may be summarized somewhat as follows:

1st. The Colorado River Basin is divided into Upper and Lower Basin and the States are grouped for convenience.

2nd. The unit of partition and appropriation on the Colorado River is the acre-foot, as between the basins.

3rd. A definite amount of water is allocated to each of the subdivisions of the Basin in perpetuity and the surplus in the river over and above this amount is dedicated first to the satisfying of any international water obligation from the Colorado River which the United States of America may assume with respect to the United States of Mexico and any surplus then left in the river is to be divided or allocated among the States or between the divisions by another commission to be assembled not earlier than forty years hence, unless by the common consent of all of the interested States.

4th. Agriculture is made paramount, the development of electric power secondary, and navigation subservient on the Colorado River.

5th. An ex officio committee is constituted for the purpose of collecting, compiling, and publishing Colorado River data.

6th. Litigation between claimants is not prohibited by this compact with respect to the waters of the Colorado River System not covered by the terms of the compact.

7th. Rights of Indian tribes are protected.

8th. Present legally applied use of water of the Colorado River System is not impaired.

9th. When storage capacity of 5,000,000 acre-feet is created in the river for the benefit of the Lower Basin, claims by users in the Lower Basin to low water of the river as against the claims of the users of water in the Upper Basin shall cease and the rights of the Lower Basin users attach to water which may be stored.

10th. If the compact is terminated by unanimous agreement of the signatory States, all rights established under it shall continue unimpaired.

I have now encompassed the whole of what I promised to say, but I am sure that you will permit the following observations which, I think, are pertinent and will be of interest and possibly of help to you in the line of thought to be taken up.

1. The Upper States are not limited as to their diversions.
2. They are only charged with that which they consume.
3. The river may be wholly diverted by the Upper States and more than enough to supply the quantity required to pass Lee's Ferry will still be assured.

4. It will be impossible under any conceivable circumstance for the Upper States to prevent 75,000,000 acre-feet going past Lee's Ferry in any ten-year period.

5. Should the Upper States divert 180,000,000 acre-feet of water onto the uplands during any ten-year period, there would still be 90,000,000 acre-feet pass Lee's Ferry out of the return flow to the river.

6. The reconstructed Colorado River would have an average annual flow of from 20,000,000 to 22,000,000 acre-feet, and if it is assumed to be 20,000,000 acre-feet, approximately 18,000,000 acre-feet would pass Lee's Ferry if there were no diversions.

7. Assuming that the reconstructed river has 22,000,000 acre-feet in it, the compact has left for future allocation after 40 years, 6,000,000 acre-feet of water if either the Upper Basin or the Lower Basin has wholly beneficially consumed its allocation.

8. It follows that if when a new apportionment is undertaken, it is apparent that either basin has had more or less than its share of the

water, an adjustment for the sake of equity may be had out of the 6,000,000 acre-feet of water unapportioned except that the Mexican burden, if the United States assumes any, shall be taken from the 6,000,000 acre-feet surplus unapportioned, before any further apportionment is made.

9. The States of the upper division would in all probability consume less than $1\frac{1}{2}$ acre-feet of water per acre of land irrigated except that the small portion which may be diverted from the Colorado River Basin by tunneling will be wholly consumed. On a basis of $1\frac{1}{2}$ acre-feet per acre consumptive use, the Upper States would be able to irrigate 5,000,000 acres out of 75,000,000 acre-feet during a ten-year period.

10. The Lower Basin States, for the most part, when they divert their water, wholly consume it and they get no credit for use of return flow for it does not exist, and they are, therefore, limited to the diversion of 8,500,000 acre-feet and are held strictly to the requirement of "consumptive beneficial use" of such as they do divert.

11. Out of the apportionment of 16,000,000 acre-feet, as now made by the provisions of the compact, each of the basins is required to stand its own losses due to evaporation from the surfaces of large reservoirs, etc., and out-basin diversions are not prohibited.

12. The creation of 5,000,000 acre-feet storage capacity in the river for the benefit of the Lower Basin, automatically terminates claims which Lower Basin users may assert as against users in the Upper Basin.

I am quite sure that there is nothing in this compact that in any way does violence to any of the fundamental water-rights practice and principles which have grown up in Utah and the arid West during the past three-quarters of a century, and that in every way where it is a departure that it is an advantage and a step forward.

I believe that the legislature of the State of Utah should ratify this compact as it now exists without any hesitation and in the interest of the development of the Colorado River, the largest single undeveloped resource of the United States today.

The compact in full is in the hands of the Members of the Senate.

Appendix 214

**THE COLORADO RIVER COMPACT:
REPORT OF FRANK C. EMERSON, COMMISSIONER
FOR WYOMING**

To the Honorable William B. Ross, Governor, and to the Honorable Senate and House of the Seventeenth Wyoming Legislature.

SIRS: I have the honor to submit herewith for your consideration my report upon the Colorado River Compact as negotiated between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, including such explanation and comment as seems at this time proper.

Believing that a treaty based upon this Compact would inure to the lasting benefit of the State of Wyoming, it is my earnest recommendation that the Compact be ratified by appropriate action of your honorable bodies with the approval of the Governor.

Respectfully,

FRANK C. EMERSON,
Commissioner for Wyoming.

CHEYENNE, WYOMING, *January 18, 1923.*

(Mr. Emerson's report contains the full text of the compact, followed by comments. The text is omitted here, to avoid duplication. The comments follow.)

COMMENT

Chapter 120, Session Laws of Wyoming, 1921, sets forth in its title the purpose of negotiating a compact concerning the use and distribution of the waters of the Colorado River System, as follows:

AN ACT Providing for the appointment of a Commissioner on behalf of the State of Wyoming to negotiate a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and between said States and the United States, respecting the use and distribution of the waters of the Colorado River and tributaries, and the rights of said States and the United States thereto.

By appointment of Governor Robert D. Carey, State Engineer Frank C. Emerson became the duly authorized Commissioner for Wyoming and represented this State upon the Colorado River Commission, which, on November 24, 1922, at Santa Fe, New Mexico, unanimously

subscribed to the Colorado River Compact. The statute referred to contains the following provision:

provided, however, that any compact or agreement so entered into by said States and the United States shall not be binding or obligatory upon any of the high contracting parties thereto unless and until the same shall have been ratified and approved by the legislature of each of said States and by the Congress of the United States.

In order that the material facts may be known, and a general understanding of the Compact reached by all interested, I take the liberty of presenting the following explanation and comment.

Physical situation.—At the end of the Mexican War a treaty was entered into between Mexico and the United States whereby Mexico ceded to the United States a great arid territory. A portion of this territory embraced the area drained by the Colorado River, the third largest river in America and the largest river in the arid West. The drainage area of this great river includes portions of what are now the seven States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. The United States failed to acquire by the said treaty the territory surrounding the lower ninety miles of the Colorado River, and this stretch of river therefore remains in Mexico. The Colorado River problem therefore has an important international as well as interstate aspect.

The Colorado River Basin in the United States naturally divides itself into two great basins separated by hundreds of miles of deep barren canyon cutting through high and rough plateaus. The Upper Basin embraces areas in the four States of Colorado, New Mexico, Utah, and Wyoming, and these States furnish about 85 percent of the flow of the river. Millions of acres of land are irrigable in the Upper Basin, and possibilities exist for large developments of hydroelectric power. Throughout the canyon region separating the two basins large power possibilities also exist although it is impractical to divert water in amount for irrigation. The Lower Basin comprises areas chiefly in the States of Arizona, California, and Nevada, supplying only about 15 percent of the water to the river, but which have extensive possibilities for the use of water for domestic, agricultural, and power purposes. The agricultural and economic conditions in the Upper and Lower Basins are entirely different. Development of the water supply for the benefit of the Lower Basin will be much more rapid than for the Upper. Conflict of interest therefore arises between the two basins, and the logical plan of solution is an apportionment of water between them.

The Green River rising in the mountains of Wyoming is one of the most important tributaries of the Colorado River. The Little Snake is also a Wyoming tributary. These two streams drain about one-fifth the area of Wyoming, and furnish about 14 percent of the total

flow of the Colorado River System. Present irrigation from these streams in Wyoming cover areas of about 435,000 acres. Additional irrigation possibilities to the extent of 765,000 acres are estimated. We therefore have a possible total development of 1,200,000 acres upon Wyoming tributaries of the Colorado. The developments of the future will not be rapid, but will be none the less desirable as our projects become feasible. Wyoming has therefore looked with much concern upon the proposed large developments on the lower Colorado River that would establish priorities to the use of water from the river that might well cause an embargo against future developments in this State.

Wyoming's own contention in regard to the doctrine of the priority of appropriation was upheld by the Supreme Court of the United States in the now famous case of Wyoming vs. Colorado in reference to the use of water from the Laramie River. The following excerpt from the opinion of the Court illuminates the point:

The contention of Colorado that she as a State rightfully may divert and use, as she may choose, the waters flowing within her boundaries in this interstate stream, regardless of any prejudice that this may work to others having rights in the stream below her boundary, cannot be maintained. The river throughout its course in both States is but a single stream wherein each State has an interest which should be respected by the other.

By this, and other argument the Court definitely establishes the principle that "he who is first in time is first in right." Even though Wyoming may contribute a large supply of water to the Colorado River it would be entirely possible that the early developments in the Lower Basin would establish priority rights to the use of water that would place effective embargo against the more tardy developments in this State.

Adoption of Treaty Plan.—No other stream in the arid West affects so many states as does the Colorado River. Extensive additional uses of water, beyond the important uses now established, are proposed. Another element of material importance entering into the problem is that of the necessity of flood-control measures in order to relieve the menace of floods to the valleys upon the lower river. Conflict of interests between states in relation to these and other phases of the Colorado River problem have led to the adoption of the treaty plan of solution. Without an agreement between states there is little question but that the river system would be involved in litigation for years in event any large additional developments were attempted upon any section of the river. By treaty between states, following the ratification of the form of compact that has now been agreed upon, the way will be cleared for all practical developments that may be proposed.

Movement toward the end of securing a treaty between states was started at the meeting of the League of the Southwest, in Denver during August 1920. This Denver meeting brought to the forefront the important interests of the upper river which had received but little attention at the previous meetings of the League in California and Arizona, although these meetings had primarily been held for consideration of Colorado River problems. As a result of the Denver meeting a Commission was constituted as composed of the State Engineers, or similar officials, of each of the seven States in interest, together with the Director and Chief Engineer of the U. S. Reclamation Service, with the delegated purpose to study the physical phases of the whole Colorado River problem and suggest basis and principles for solution. After carefully considering the matter, this Engineering Commission, following further the plan proposed by the Denver meeting, drafted uniform legislation for the creation of a treaty or compact commission which became known as the Colorado River Commission. This Commission was duly authorized by proper legislative enactment by each State and by the United States, and the several representatives appointed.

Proceedings of Colorado River Commission.—The first session of the Colorado River Commission was held in Washington, D. C., in January 1922. No definite plan of solution of the complex problems presented could be determined at this meeting. It was then decided to hold a series of public hearings at different points in the Southwest in order to give all parties an opportunity to present their plans and projects, to advise the Commission as to their ideas of the form an agreement between the States should take, and otherwise be fully heard. Following this plan public hearings were held by the Commission during the month of March at Phoenix, Arizona; Los Angeles, California; Salt Lake City, Utah; Grand Junction and Denver, Colorado; and upon April 2 at Cheyenne, Wyoming. El Centro, California, and Las Vegas, Nevada, were also visited but no special hearings were held. During the series of hearings the Commission received a large amount of information and many suggestions as to a proper solution of problems involved. Adjournment was then taken by the Commission in order that all matter might be carefully considered by the members. The final meeting of the Commission was held at Santa Fe, New Mexico, beginning upon November 9, 1922. After eighteen days of continuous session, the Commission was able to unanimously agree upon a form of Compact, and in the historic Palace of the Governors, in the City of Santa Fe, the "Colorado River Compact" was subscribed to on the 24th day of November 1922 by all the Commissioners. Upon ratification by the several State Legislatures, and the approval by the Congress of the United States, this Compact will become a treaty between the seven States and will be the water law of the

Colorado River Basin so far as interstate matters are concerned, and the terms and provisions of the agreement apply. The document comprises some one thousand eight hundred words contained in eleven articles of agreement.

The Compact.—The form of Compact was only determined after a most thorough study of the many different phases of the problems presented in connection with the apportionment and use of the water of the great Colorado River System. It was the endeavor of the Commission to frame a document that would be as concise as possible without sacrifice of clarity. Every word and phrase was carefully considered with a view of obtaining a final form that would not be misinterpreted. One of the virtues of the Compact may well be found in the fact that it does not attempt to do too much. Certain broad basic principles to govern the apportionment and use of the waters of the Colorado River System are laid down by plain statements that can be understood by the laymen, without the necessity of complete information concerning the involved technical and legal phases of the whole problem. The following amplification upon the provisions of the Compact may assist toward a proper understanding.

Article I well states that—

the major purposes of this Compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water; to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods.

This article further presents the logical plan of dividing the Colorado River Basin into the two great basins arranged by nature, and making an apportionment of water to each.

Article II is devoted to terminology and contains definitions used in the Compact, as well as setting forth the uses of water that shall be included under the head of "domestic use." The several definitions, and the statement concerning domestic use, allow simplification as to verbiage and [sic] repetition in the Compact that might well have otherwise been confusing. The Colorado River Basin is divided geographically according to the lines laid down by nature into the "Upper Basin" and the "Lower Basin."

It will be noted that the term "basin" is to a certain extent a misnomer in each instance, as the term is used to mean not only the natural drainage area but also other territory to which water shall be beneficially applied. The Strawberry Project in Utah, and the Imperial Valley in California, now receive water from the Colorado River System. The legality of such diversions is definitely established by the principle laid down by the United States Supreme Court in the

Wyoming v. Colorado case. The practice of interwatershed diversion is extensively followed in Wyoming, and this State itself has limited possibilities for diversions of water from the Green River Basin. The proposed diversion from the Colorado watershed for use by the City of Denver and adjacent country is the only other diversion of any size. The natural limitations are such as to prevent any material amount of water from being diverted from the Colorado watershed, and the question need therefore give no concern.

For the purpose of making the Compact effective a political division of the interested States is made by grouping Colorado, New Mexico, Utah, and Wyoming as the "States of the Upper Division," and Arizona, California, and Nevada as the "States of the Lower Division," these groups representing, respectively, the interests of the Upper Basin and the Lower Basin. The term "Lee Ferry" is used to designate a natural point of demarcation upon the main Colorado River between the Upper Basin and the Lower Basin as located near the upper end of the Grand Canyon.

Article III contains the important provisions as to the apportionment of the waters of the river, the agreement as to the delivery by the Upper Division of certain amounts of water at Lee Ferry, and provision for further equitable apportionment of the unapportioned water of the Colorado River System whenever the need for same might become apparent. It was the endeavor of the Commission at its first session to arrive at a basis whereby a definite apportionment of the use of water could be made to each of the seven States. After extended consideration this plan was found to be impractical by reason of the facts that accurate determination could not now be made as to the possibilities of development in the different States, and agreement could not be reached upon any relative figures. By reason of the fact that the great conflict arises between the interests in the Upper Basin and the Lower Basin, it was finally agreed that apportionment between the two should form the basis of the Compact so far as the division of water was concerned. The apportionment of water allowed to each division is more than sufficient for the ultimate use of water in each so far as same is determined by the present estimates of the United States Reclamation Service. To Wyoming the grouping of the States into the two divisions appears of especial advantage as the possibilities of future development in this State, compared to the amount of water Wyoming contributes to the Colorado River, is greater than for any of the other three States of the Upper Division.

The average flow of water available for use in the entire Colorado River System is estimated at about twenty million acre-feet annually. Sixteen million acre-feet are allocated under the terms of the Compact, leaving a residue of four million acre-feet to be apportioned at a future date. Development in the Upper Basin will be much slower than in

the Lower Basin, but will be nonetheless desirable when same can be accomplished. The present apportionment of the use of 7,500,000 acre-feet per annum to the Upper Basin is "in perpetuity." These two words are of especial significance as their use means that Wyoming and the other States of the Upper Division will find water supply available for the developments of the future whenever our projects may become economically feasible of undertaking, and whether the time be in the near future or a century or more from now. The Lower Basin is allowed to increase its use of water one million acre-feet per annum in addition to the 7,500,000 acre-feet apportioned for its use by reason of the possible developments upon the Gila River, and the probable rapid development generally upon the lower river. This additional development is at the peril of the lower division as no provision is made for delivery of water at Lee Ferry for this additional amount.

The Compact provides that further apportionment of the use of water cannot be made prior to 1963. During the period of the next forty years Wyoming will have opportunity to develop as far as possible, and be able to determine any future possibilities of the use of the waters of the Green and Little Snake Rivers and tributaries that may not now be foreseen. Then when further apportionment is considered Wyoming will be in position to present any additional claims for use of water that may have been determined.

The States of the Upper Division agree that the flow of the Colorado River at Lee Ferry shall not be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years. This is an agreement that can surely be performed. Over 18,500,000 acre-feet of water is contributed annually to the river by the Upper Basin, and all of this amount could be once diverted and the return flow would still be sufficient to supply the specified delivery at Lee Ferry. The fact that the agreement for delivery of water is for a period of ten consecutive years places the burden of reservoir construction upon the lower river, and protects the Upper Division against years of low flow by full allowance for years of large discharge.

Article III further makes provision for the supply of water to Mexico in event it is determined that Mexico has any rights to the use of water of the Colorado River. The Commission was very careful not to place any provisions in the Compact that would embarrass the international situation, but at the same time it was felt necessary to provide for any grant that might be made to Mexico through treaty between that country and the United States. The international situation is therefore left in statu quo, and no opposition from Mexico to the Compact need therefore be expected.

Article IV provides for what may be termed "preferred uses" of water. As the Colorado River has ceased to be navigable in practical

fact the use of its waters for the purposes of navigation are made subservient to other uses. The use of the water for the generation of electrical power is made subservient to the use of water for agricultural and domestic purposes. Both of these provisions of the Compact are much in favor of Wyoming interests. The installation of great power plants upon the lower river will cause no call to be made upon us for water, and if Congress approves of the provision for the subserviency of navigation we need have no fear that the regulations of the War Department, or other agency at Washington, will interfere in any way with the use of water above.

Article V provides for the cooperation of State and Government officials in the gathering of authentic data in regard to the Colorado River Basin, and the determination of facts generally as they apply to the matter of Compact. As these officials act *ex officio* no new Commission is set up for the purposes described, nor will any expense of amount attach to the work.

Article VI sets up a plan for the solution of any claims or controversies that may arise between any two or more of the States in respect to the provisions of the Compact, or other matters concerning the use of water in the Colorado River Basin. By the appointment of Commissioners opportunity would be given for the consideration of such questions as might arise without resort to court action. As is true of this compact any action by such Commissioners would be subject to ratification by the legislatures of the States affected.

Article VII provides that the Compact shall have no effect upon the obligations of the United States to Indian tribes. This provision was deemed advisable by reason of the fact that the United States has heretofore entered into certain treaties with the different Indian tribes that must be respected, and can in no manner be affected by any later agreement.

Article VIII provides that all present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this Compact. It is, of course, true that all rights perfected heretofore could not be prejudiced in any way by a Compact entered into at this time. This provision is therefore but a statement of fact to reassure the many parties now having water rights in the Colorado River Basin that the validity of any rights established to date is not in any way threatened. Article VIII further provides that any claims appropriators or users of water in the Lower Basin might have against appropriators or users of water in the Upper Basin shall attach to and be satisfied from stored water, whenever storage capacity of five million acre-feet shall have been provided for the benefit of the Lower Basin. This provision was entered into the Compact by reason of the concern of the Imperial Valley in regard to the low-water situation that now exists. During two different seasons heretofore

it has been claimed by Imperial Valley that the supply of water at the intake on the Colorado River of the Canal serving this valley has been deficient, and that appropriators in the valley were entitled to more water under the priorities of their appropriations than they were able to obtain from the river. They therefore are of the opinion that they have a right of action against junior appropriators of water above. Any such right or claim they may have would not be affected by the Compact. This article of the Compact provides in effect, however, that such claims would cease whenever storage capacity to the specified amount is created by the construction of a reservoir or reservoirs.

Article IX speaks for itself in providing that any State will have the right of court action in enforcing any of the provisions of the Compact, or protecting any right established thereunder.

Article X also speaks for itself in providing for the termination of the Compact at any time by unanimous consent, further providing, however, that all rights that might have been established at the time of such termination would continue unimpaired.

Article XI provides that the Compact shall become effective only after approval by the seven State Legislatures and by the Congress of the United States. The article further sets forth the method of notification, concerning legislative action, between the several States and the United States. Further provision is made for the disposition and care of copies of the Compact.

Through these eleven articles of agreement it is believed that broad basic principles for the equitable apportionment and use of the waters of the Colorado River System will be established. The function of the Compact was not to provide for the construction of any particular project or projects. Its main purpose was to afford the means of clearing the way for any developments that may be practically undertaken at any time in any section of the Colorado River Basin, by removing cause for artificial restriction or interference from other sections of the river. This purpose a treaty between States based upon this form of Compact will no doubt accomplish.

It would seem that the interests of the upper States were well protected during the negotiations of the Colorado River Commission by reason of the personnel and qualifications of the four State Commissioners. Colorado was represented by the Honorable Delph E. Carpenter, and New Mexico by Stephen B. Davis, Jr., Associate Justice of the Supreme Court. Both of these prominent attorneys have had a wide experience in irrigation law and interstate water matters. Wyoming and Utah were represented by their State Engineers, both of whom are men of large experience in the practical field. The Colorado River Compact as a whole is the result of the labors of qualified legal, engineering, and other talent, all engaged in

a sincere effort to prepare a practical workable agreement that would largely solve the Colorado River situation. It is believed that the Compact will speak well for itself.

There is no question but that it is to the material interest of each of the States in interest to ratify the form of Compact that is now presented with the unanimous approval of the several State Commissioners. Wyoming particularly would have much to gain through the proposed treaty. It took the Supreme Court of the United States many years to decide interstate questions arising between only the two States of Wyoming and Colorado, upon the Laramie River, a comparatively small stream. While the main points in the decision of the Court in this case were in principle in favor of Wyoming, the practical effect has been found to be of but little advantage. As a matter of actual fact, both Wyoming and Colorado expended much of both time and effort in contesting an interstate water situation that finally brought but an empty victory to the winner. Then again, upon the North Platte River, Wyoming found larger developments in this State effectively prevented for a period of over twelve years because a proper understanding had not been reached concerning the water supply of this river and of its use between the States of Wyoming and Nebraska. An amicable agreement through cooperative effort finally brought solution. The Colorado is a great river in which many important and powerful interests are concerned, and presents problems of much greater complexity than those encountered upon these other two streams as mentioned. The Colorado River Compact offers a plan of basic principles which in effect will guarantee to Wyoming water supply sufficient for the development of all our possibilities to the limits that can be foreseen.

General Observation.—The ratification of the Colorado River Compact will be one of the most important and far-reaching questions to be considered by this Legislature. It is well then that all take an active interest and study the question thoroughly. It is not only proper, but it is in reality your duty, to become acquainted with the material facts, to subject the Compact to the most searching criticism, and to obtain such information as may enable you to act to the best interests of Wyoming.

Although the legal and technical phases of the Colorado River problem are many and important, there come out of the whole question certain fundamental principles applying to the situation which can be well understood by anyone interested. All can realize the natural physical situation which causes the division of the river into two great basins; that the economic conditions that apply to the two basins are entirely different, and that therefore a division of water between the two basins is a very logical plan; that the additional development of the Green River and the Little Snake River basins in Wyoming will

be very tardy as compared with development in California; that if proper agreement can now be had between the great conflicting interests upon the Colorado River this accomplishment would be most desirable for all.

We do need to clear our vision if only in the light of the protection of Wyoming interests. We need to realize that, instead of the Colorado River Compact being negotiated for the benefit of California as some would believe, the facts will in reality show that the compact idea was initiated by the Upper States for their own protection. Interests upon the lower river have consistently opposed the compact plan believing that their development would be rapid and assurance of water supply would come to them through priority of use. The real main incentive the lower river has in agreeing to compact grows out of the fact that they wish, and to a certain extent need, the support of the upper river, in order that their projects may be put over in the most competent manner through national legislation or otherwise. The Upper States' support must be largely contingent upon an agreement that will protect our water supply against the lower developments; therefore the conception of the treaty plan of solution of the Colorado River situation at the Denver meeting of the League of the Southwest in August 1920.

We cannot lose sight of the situation on the lower river with its economic phase that will force early development whether we support or oppose, and its humanitarian phase in relation to the flood menace. Whether we look at the question from the standpoint of our own selfish interests, or whether we have the desire to extend our reasonable aid to a serious situation, the question demands our attention. To properly protect Wyoming interests we must know conditions that apply to other sections of the river.

To our own State we have a dual responsibility: first, that we must be convinced that we are not jeopardizing any of the material interests of Wyoming either now or for the future; second, that we do not miss the opportunity that now appears to be knocking at our door. As serious a responsibility as is the first, the second is fully as important. Wyoming and the other Upper States are in a strategic position today that we will never have again. Once means is provided for the construction of a great control reservoir on the lower Colorado the need for support from the Upper States will be largely gone; once the Colorado River bursts through the man-made levees that stand between it and the great Imperial Valley, as it may now do any day, public sentiment will force a bill through Congress providing for relief. A great reservoir will come with its threat to establish priority to use of water and to build up powerful interests on the lower river that will not look with favor upon developments in the upper reaches. Despite any opposition we may present, either the economic or the

flood situation, or both, will force development upon the lower river. Then our real opportunity for a protecting agreement will have passed.

Presented to this Legislature is a comparatively simple workable agreement that will protect Wyoming interests in the water supply of the Colorado River. Let the Compact speak largely for itself through its provisions that must on the whole be clear to all who study the essential facts. For your consideration, however, I take the liberty to present the following general conclusions that are clearly apparent to me in relation to the Compact:

The Upper States, by the allocation of 7,500,000 acre-feet of water for annual use, have reserved to them for all future time an amount of water sufficient for all requirements.

The Upper Basin is now enjoying a use of water exceeding 2,000,000 acre-feet. This amount never reaches Lee Ferry. The Upper States are only agreeing to allow to pass Lee Ferry less than one-half the amount that now actually reaches that point.

The Upper States will have the privilege of once diverting all of the over 18,000,000 acre-feet of water supplied by the Upper Basin, and the return flow alone from this amount will provide the entire delivery at Lee Ferry; under the provisions of the Compact it will be noted that the Lower Basin is only assured the amount of 7,500,000 acre-feet at Lee Ferry.

By reason of the extent of our possibilities of development as compared with water supply furnished, Wyoming is in a very advantageous position by reason of being one of the group of four Upper States. According to figures presented by Colorado, based upon very liberal estimates of their future possibilities, that State will contribute 8,400,000 acre-feet of water per annum after all future requirements are satisfied. This amount alone would more than satisfy the delivery at Lee Ferry.

The menace coming from the development of great power projects upon the river below Wyoming will be removed, as under the Compact power will have no call on the use of water exercised in this State.

Navigation rights that might otherwise be asserted by the War or some other Department of our national government would not interfere with our water supply.

Such a situation as the Pathfinder Reservoir created upon the North Platte River would not be repeated upon the Colorado.

Wyoming would be in position to avoid the spending of large sums of money and years in the courts in an interstate water suit upon the Colorado River, such as we have experienced upon the Laramie.

Generally speaking, Wyoming would continue the full enjoyment of our own good laws and practice within our State and at the same time not suffer from embargo or interference from without.

These matters are presented to you for your careful consideration. Every proper criticism should be brought to bear upon the Compact, but at the same time its essential merits should not be overlooked. I am convinced that the Compact as a whole is very favorable to Wyoming interests. I commend it to you for the most earnest consideration, trusting that the action you may see fit to take may be for the lasting benefit of our State.

Appendix 215

**1923 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

CALIFORNIA

(Act of February 3, 1923; Ch. 17, 45th sess., Statutes and Amendments to the Codes, 1923, pp. 1530-1535)

CHAPTER 17

Assembly Joint Resolution No. 3—Relative to approving the Colorado River Compact

(Filed with Secretary of State, February 9, 1923)

Whereas, Pursuant to appropriate action of their respective legislatures, the states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming did heretofore appoint commissioners to negotiate and enter into a compact or agreement providing for an equitable distribution and apportionment among the said states of the waters of the Colorado river and of streams tributary thereto; and

Whereas, The congress of the United States did by an act approved August 19, 1921 (42 Statutes at Large, page 171), grant its consent to the making of such compact or agreement, upon condition that a suitable person, to be appointed by the president of the United States, should participate in said negotiations as the representative of and for the protection of the interests of the United States, and upon the further condition that any such compact or agreement shall not be binding or obligatory upon any of the parties thereto unless and until the same shall have been approved by the legislature of each of said states and by the congress of the United States; and

Whereas, The commissioners representing the said states, after negotiations participated in by Herbert Hoover appointed by the president as the representative of the United States, did, on the twenty-fourth day of November 1922, at the city of Santa Fe, New Mexico, agree upon and sign a compact, which was then and there approved by the representative appointed by the president of the United States, and which is in the words and figures following, to wit:

(Text of compact omitted, to avoid duplication.)

Resolved by the assembly and the senate of the legislature of the State of California, jointly, at its forty-fifth session, commencing on the eighth day of January 1923, a majority of all the members elected to each house of said legislature voting in favor thereof, That the said Colorado river compact be and the same is hereby approved by the legislature of the State of California; and

Be it further resolved, That the governor of California be and he is hereby authorized and requested to give notice of the foregoing approval to the governor of each of the other signatory states and to the president of the United States.

Appendix 216

**1923 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

COLORADO

(Act of April 2, 1923; ch. 189, 24th General Assembly; Session Laws
of Colorado, 1923, p. 684)

CHAPTER 189

WATER COMMISSION

COLORADO RIVER COMPACT

(S. B. No. 410, by Senators Tobin, Callen, Follett, Bannister, and
Saunders, and Mr. Calkins)

An Act to approve the Colorado River Compact

Be It Enacted by the General Assembly of the State of Colorado:

SECTION 1. The General Assembly hereby approves the compact, designated as the "Colorado River compact," signed at the City of Santa Fe, State of New Mexico, on the 24th day of November, A. D. 1922, by Delph E. Carpenter, as the Commissioner for the State of Colorado, under authority of and in conformity with the provisions of an act of the General Assembly of the State of Colorado, approved April 2, 1921, entitled "An Act providing for the appointment of a Commissioner on behalf of the State of Colorado to negotiate a compact and agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming and between said States and the United States respecting the use and distribution of the waters of the Colorado River and the rights of said States and the United States thereto, and making an appropriation therefor, "the same being Chapter 246 of the Session Laws of Colorado, 1921, and signed by the Commissioners for the States of Arizona, California, Nevada, New Mexico, Utah, and Wyoming, under legislative authority, and signed by the Commissioners for said seven States and approved by the Representative of the United States of America under authority and in conformity with the provisions of an Act of the Congress of the United States, approved August 19, 1921,

entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes," which said compact is as follows:

(Text of compact omitted, to avoid duplication.)

SECTION 2. That said compact shall not be binding and obligatory on any of the parties thereto unless and until the same shall have been approved by the Legislature of each of the said States and by the Congress of the United States, and the Governor of the State of Colorado shall give notice of the approval of said compact by the General Assembly of the State of Colorado to the Governors of each of the remaining signatory States and to the President of the United States, in conformity with Article XI of said compact.

SECTION 3. The General Assembly hereby finds, determines, and declares that this Act is necessary for the immediate preservation of public peace, health, and safety.

SECTION 4. In the opinion of the General Assembly an emergency exists, therefore, this Act shall take effect and be in force from and after its passage.

Approved: April 2, 1923.

Appendix 217

**1923 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

NEVADA

(Act of January 27, 1923; Resolution No. 2, 31st Sess., Statutes of Nevada, 1923, p. 393)

(Assembly Joint Resolution No. 1—Clark County Delegation)

No. 2—Assembly Joint Resolution, relative to approving Colorado River compact

(Approved January 27, 1923)

Whereas, Pursuant to appropriate action of their respective legislatures, the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming did heretofore appoint commissioners to negotiate and enter into a compact or agreement providing for an equitable distribution and apportionment among the said states of the waters of the Colorado river and of streams tributary thereto; and

Whereas the Congress of the United States did by an act approved August 19, 1921 (42 Statutes at Large, page 171), grant its consent to the making of such compact or agreement, upon condition that a suitable person, to be appointed by the President of the United States, should participate in said negotiations as the representative of and for the protection of the interests of the United States and upon the further condition that any such compact or agreement shall not be binding or obligatory upon any of the parties thereto unless and until the same shall have been approved by the legislature of each of said states and by the Congress of the United States; and

Whereas the commissioners representing the said states after negotiations participated in by Herbert Hoover appointed by the President as the representative of the United States, did, on the twenty-fourth day of November 1922, at the city of Santa Fe, New Mexico, agree upon and sign a compact, which was then and there approved by the representative appointed by the President of the United States, and which is in the words and figures following, to wit:

(Text of compact omitted, to avoid duplication.)

Now, therefore, be it

Resolved by the Assembly and the Senate of the Legislature of the State of Nevada, jointly, at its thirty-first session, commencing on the fifteenth day of January 1923, a majority of all the members elected to each house of said legislature voting in favor thereof, That the said Colorado river compact be and the same is hereby approved by the legislature of the State of Nevada; and be it further

Resolved, That the governor of Nevada be and he is hereby authorized and requested to give notice of the foregoing approval to the governor of each of the other signatory states and to the President of the United States.

Appendix 218

**1923 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

NEW MEXICO

(Act Approved February 7, 1923, Ch. 6, 6th Sess.; New Mexico Laws,
1923, p. 7)

CHAPTER 6

An Act ratifying and approving the Colorado River Compact

(H. B. No. 46; approved February 7, 1923)

Whereas the Legislature of New Mexico, by an Act approved March 11, 1921, entitled "An Act Providing for the Appointment of a Commissioner on Behalf of the State of New Mexico to Negotiate a Compact and Agreement Between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and between said States and the United States respecting the Use and Distribution of the Waters of the Colorado River and the Rights of Said States and the United States Thereto, and Making an Appropriation Therefor," appearing as Chapter 121 of the Session Laws of 1921, authorized the appointment of a Commissioner to represent the State of New Mexico upon a joint commission to be composed of Commissioners representing the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming and a representative of the United States of America, for the purpose of negotiating and entering into a compact or agreement respecting the utilization and disposition of the waters of the Colorado River; and

Whereas the representatives of said states on the 24th day of November 1922, at the City of Santa Fe, New Mexico, signed a compact in accordance with the provisions of said Act, a copy whereof, duly certified by the Secretary of State of the United States, is now on file with the Secretary of this State, therefore;

Be It Enacted by the Legislature of the State of New Mexico:

SECTION 1. The State of New Mexico does hereby ratify, approve and adopt the compact aforesaid, which is as follows:

(Text of compact omitted to avoid duplication.)

SEC. 2. Notice of the approval of said compact shall be given by the Governor of New Mexico to the Governors of each of the other signatory States and to the President of the United States, as provided in Article II (11) of said compact.

SEC. 3. The ratification and approval of said compact by this State shall not be binding or obligatory until it shall have been likewise approved by the Legislatures of the other signatory States and by the Congress of the United States.

SEC. 4. That it is necessary for the preservation of the public peace and safety of the inhabitants of the State of New Mexico, that the provisions of this Act shall become effective at the earliest possible time, and therefore an emergency is hereby declared to exist, and this Act shall take effect and be in full force and effect from and after its passage and approval.

Appendix 219

**1923 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

UTAH

(Act Approved January 29, 1923; Ch. 5, 15th Sess.; Laws of Utah,
1923, p. 4)

CHAPTER 5

(Senate Bill No. 4)

(Passed January 26, 1923; approved January 29, 1923; in effect May 8,
1923)

COLORADO RIVER COMPACT

*An Act ratifying a compact and treaty apportioning the waters of the
Colorado river, approved by a representative of the United States of
America and entered into by representatives of Utah, Wyoming,
Colorado, New Mexico, Arizona, Nevada, and California, sitting as
the Colorado River Commission*

Be it enacted by the Legislature of the State of Utah:

SECTION 1. COMPACT RATIFIED. That certain compact and treaty approved by a representative of the United States of America and negotiated and entered into by representatives of the States of Utah, Wyoming, Colorado, New Mexico, Arizona, Nevada, and California, sitting as the Colorado River Commission, which compact and treaty apportions the waters of the Colorado river, and which commission was created in conformity with Chapter 68, Session Laws of Utah, 1921, and similar acts of the legislatures of the several respective States named and of the Congress of the United States, is hereby approved, confirmed, and ratified for and by the State of Utah.

SEC. 2. TEXT OF COMPACT. The text of said compact is as follows:

(Text of compact omitted to avoid duplication.)

SEC. 3. VALIDITY. The compact and treaty ratified by this Act is the original signed by members of the Colorado River Commission, approved by a representative of the United States of America, and deposited in the archives of the Department of State of the United States at Washington, D. C. Any error made in copying the original compact and treaty as in Section 2 hereof shall be held not to invalidate this ratification or compact and treaty in any way.

Approved January 29, 1923.

Appendix 220

**1923 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

WYOMING

(Act Approved February 2, 1923; Ch. 3, 17th State Legislature;
Session Laws of Wyoming, 1923, p. 3)

CHAPTER 3

(Senate File No. 20)

RATIFICATION OF COLORADO RIVER CONFERENCE

*An Act to provide for the ratification and approval of the Colorado River
Compact*

Whereas the Sixteenth Wyoming Legislature passed an Act entitled "An Act providing for the appointment of a Commissioner on behalf of the State of Wyoming to negotiate a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and between said States and the United States, respecting the use and distribution of the waters of the Colorado River and tributaries, and the rights of said States and the United States thereto." which [sic] said Act was approved under date of February 22, 1921, by the Governor; and

Whereas, under the authority of said Act, the Governor of Wyoming duly appointed a Commissioner who, together with the duly appointed Commissioners of the States of Arizona, California, Colorado, Nevada, New Mexico, and Utah, and the representative of the United States, negotiated a compact or agreement now called the "Colorado River Compact" and unanimously signed same upon the twenty-fourth day of November A. D. 1922, at Santa Fe, New Mexico; and

Whereas the said Act of the Sixteenth Wyoming Legislature further contained the following provision: "provided, however, that any compact or agreement so entered into by said States and the United States shall not be binding or obligatory upon any of the high contracting parties thereto unless and until the same shall have been ratified and approved by the legislature of each of said States and by the Congress of the United States."

A145

Therefore

Be It Enacted by the Legislature of the State of Wyoming:

SECTION 1. That ratification and approval is hereby given to the Colorado River Compact as signed at the City of Santa Fe, New Mexico, on the twenty-fourth day of November, A. D. 1922, by Frank C. Emerson, the duly appointed Commissioner for the State of Wyoming, under and in accordance with the authority of the Act of the Sixteenth Wyoming Legislature approved February 22, 1921, entitled: "An Act providing for the appointment of a Commissioner on behalf of the State of Wyoming to negotiate a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, and between said States and the United States respecting the use and distribution of the waters of the Colorado River and tributaries, and the rights of said States and the United States thereto," which compact was also signed by the duly authorized Commissioners of the States of Arizona, California, Colorado, Nevada, New Mexico and Utah, and approved by the representative of the United States, which Colorado River Compact is in full as follows:

(Text of compact omitted to avoid duplication.)

SECTION 2. That the said compact shall not be binding or obligatory upon any of the high contracting parties thereto unless and until the same shall have been ratified by the legislature of each of said States and approved by the Congress of the United States, and proclamation thereof shall be made by the President of the United States upon receipt by him, from the Governors of all the signatory States, of notice of ratification of such compact by the legislatures thereof. The Governor of Wyoming shall give notice of the ratification and approval of said Compact by the Seventeenth Wyoming Legislature to the Governors of each of the remaining signatory States and to the President of the United States, in conformity with Article XI of said Compact.

SECTION 3. This Act shall be in effect from and after its passage.

Approved February 2, 1923.

Appendix 221

**1925 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

CALIFORNIA

(Act of April 8, 1925; Ch. 33, 46th Sess.; Statutes and Amendments
to the Codes, 1925, pp. 1321-1322)

CHAPTER 33

*Assembly Joint Resolution No. 15—Relating to the Colorado River
Compact between the states of California, Arizona, Colorado, Nevada,
New Mexico, Utah, and Wyoming*

(Filed with Secretary of State April 8, 1925)

Whereas the legislature of the states of California, Colorado, New Mexico, Nevada, Utah, and Wyoming have heretofore approved the Colorado River Compact, signed by the commissioners for said states and the state of Arizona, and approved by Herbert Hoover, as the representative of the United States of America, at Santa Fe, New Mexico, November 24, 1922, and notice of the approval by the legislature of each of said approving states has been given by the governor thereof to the governors of the other signatory states, and to the President of the United States, as required by article eleven of said compact; and

Whereas the said compact has not been approved by the legislature of the state of Arizona, nor by the congress of the United States; now, therefore be it

Resolved by the assembly and the senate of the legislature of the State of California, jointly, at its forty-sixth session commencing on the fifth day of January, 1925, a majority of all the members elected to each house of said legislature voting in favor thereof, That the provisions of the first paragraph of article eleven of the said Colorado River Compact, making said compact binding and obligatory when it shall have been approved by the legislature of each of the signatory states, are hereby waived and said compact shall become binding and obligatory upon the State of California, when by act or resolution of their respective legislatures at least six of the signatory states, which have approved or which may hereafter approve said compact, shall consent

to such waiver and the congress of the United States shall have given its consent and approval; *provided, however*, that said Colorado River Compact shall not be binding or obligatory upon the State of California by this or any former approval thereof, or in any event until the President of the United States shall certify and declare (a) that the congress of the United States has duly authorized and directed the construction by the United States of a dam in the main stream of the Colorado river, at or below Boulder canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water; and, (b) that the congress of the United States has exercised the power and jurisdiction of the United States to make the terms of said Colorado River Compact binding and effective as to the waters of said Colorado river.

That certified copies of the foregoing preamble and resolution be forwarded by the governor of the State of California to the President of the United States, the secretary of state of the United States, and the governors of the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming.

Appendix 222

**1925 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

COLORADO

(Act of February 26, 1925; Ch. 177, 25th Sess.; Session Laws of
Colorado, 1925, pp. 525-526)

CHAPTER 177

WATER COMMISSION

COLORADO RIVER COMPACT

(H. B. No. 483, by Messrs. Calkins, Rees, Cowan, Newland, Day,
and McCormick)

An Act relating to the Colorado River Compact

Whereas the Legislatures of the States of California, Colorado, Nevada, New Mexico, Utah, and Wyoming heretofore have approved The Colorado River Compact, signed by the Commissioners for said States and the State of Arizona and approved by Herbert Hoover as the representative of the United States of America, at Santa Fe, New Mexico, November 24, 1922 (Chap. 189, pp. 684-693, Sess. Laws, Colo., 1923, etc.), and notice of the approval by the Legislature of each of said approving States has been given by the Governor to the Governors of the other signatory States and to the President of the United States, as required by Article XI of said compact; now therefore,

Be It Enacted by the General Assembly of the State of Colorado:

SECTION 1. That the provisions of the first paragraph of Article XI of The Colorado River Compact, making said compact effective when it shall have been approved by the Legislature of each of the signatory States, are hereby waived and said compact shall become binding and obligatory upon the State of Colorado and upon the other signatory States, which have ratified or may hereafter ratify it, whenever at least six of the signatory states shall have consented thereto and the Congress of the United States shall have given its consent and approval, *Provided, however,* that this Act shall be of no

force or effect until a similar Act or Resolution shall have been passed or adopted by the Legislatures of the States of California, Nevada, New Mexico, Utah, and Wyoming.

SECTION 2. That certified copies of this Act be forwarded by the Governor of the State of Colorado to the President of the United States, the Secretary of State of the United States, and the Governors of the States of Arizona, California, Nevada, New Mexico, Utah, and Wyoming.

SECTION 3. The General Assembly hereby finds, determines, and declares that this Act is necessary for the immediate preservation of the public peace, health, and safety.

SECTION 4. In the opinion of the General Assembly an emergency exists, therefore, subject to the provision of Section 1 hereof, this Act shall take effect and be in force from and after its passage.

Approved February 26, 1925.

Appendix 223

**1925 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

NEVADA

(Act of March 18, 1925; Ch. 96, 32d Sess.; Statutes of Nevada, 1925,
pp. 134-135)

CHAPTER 96

(Senate Bill No. 87, Senator Smith)

An Act relating to the Colorado river compact; waiving certain provisions of article XI thereof; agreeing to and entering into said Colorado river compact as so modified, and providing for the ratification and going into effect of said compact as so modified

(Approved March 18, 1925)

Whereas the legislatures of the states of California, Colorado, Nevada, New Mexico, Utah, and Wyoming heretofore have approved the Colorado river compact signed by the commissioners for said states and the state of Arizona and approved by Herbert Hoover as the representative of the United States of America, at Santa Fe, New Mexico, November 24, 1922, and the approval of the legislature of the State of Nevada was given and granted by chapter No. 2 of resolutions and memorials passed at the thirty-first session, Nevada legislature, 1923, printed and published at pages 393 to 399, inclusive, and notice of the approval by the legislature of each of the said approving states has been given by the governor and each respective governor to the governors of the other signatory states and to the president of the United States, as required by article XI of said compact; now, therefore,

The People of the State of Nevada, represented in Senate and Assembly, do enact as follows:

SECTION 1. That the provisions of the first paragraph of article XI of the Colorado river compact, making said compact effective when it shall have been approved by the legislature of each of the signatory states, are hereby waived and said compact shall become binding and obligatory upon the State of Nevada and upon the other signatory

states which have ratified or may hereafter ratify it, whenever at least six (6) of the signatory states shall have consented thereto and the Congress of the United States shall have given its consent and approval; *provided, however*, that this act shall be of no force or effect until this or a similar resolution shall have been passed or adopted by the legislatures of the states of California, Colorado, Nevada, New Mexico, Utah, and Wyoming.

SEC. 2. That certified copies of this act be prepared by the secretary of state and forwarded by the governor of the State of Nevada to the president of the United States, the secretary of state of the United States, and the governors of the states of Arizona, California, Colorado, New Mexico, Utah, and Wyoming.

SEC. 3. Good cause appearing, this act shall take effect immediately from and after its passage.

Appendix 224

**1925 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

NEW MEXICO

(Act of March 17, 1925; Ch. 78, 7th Sess.; Laws of New Mexico, 1925,
pp. 116-117)

CHAPTER 78

An Act relating to the Colorado River compact

(S. B. No. 105; approved March 17, 1925)

Whereas the Legislatures of the States of California, Colorado, Nevada, New Mexico, Utah and Wyoming heretofore have approved The Colorado River Compact, signed by the Commissioners for said States and the State of Arizona and approved by Herbert Hoover as the representative of the United States of America, at Santa Fe, New Mexico, November 24, 1922 (Chap. 6, pp. 7-13, Laws of New Mexico, 1923), and notice of the approval by the Legislature of each of said approving States has been given by the Governor to the Governors of the other signatory States and to the President of the United States as required by Article XI of said compact; now therefore,

Be It Enacted by the Legislature of the State of New Mexico:

SECTION 1. That the provisions of the first paragraph of Article XI of The Colorado River Compact, making said compact effective when it shall have been approved by the Legislature of each of the signatory states, are hereby waived and said compact shall become binding and obligatory upon the State of New Mexico and upon the other signatory States, which have ratified or may hereafter ratify it, whenever at least six of the signatory states shall have consented thereto and the Congress of the United States shall have given its consent and approval: *provided, however*, that this Act shall be of no force or effect until a similar Act or resolution shall have been passed or adopted by the Legislature of the States of California, Nevada, Colorado, Utah, and Wyoming.

SEC. 2. That certified copies of this Act be forwarded by the Governor of the State of New Mexico to the President of the United States, the Secretary of State of the United States, and the Governors of the States of Arizona, California, Nevada, Colorado, Utah and Wyoming.

SEC. 3. That it is necessary for the preservation of the public peace, health and safety of the inhabitants of the State of New Mexico that the provisions of this Act shall become effective at the earliest possible time, and therefore an emergency is hereby declared to exist, and this Act shall take effect and be in full force and effect from and after its passage and approval.

Appendix 225

**1925 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

UTAH

(Act of March 13, 1925; Ch. 64, 16th Sess.; Laws of Utah, 1925,
p. 127)

CHAPTER 64

(Senate Bill No. 122, by Mr. Robinson)

(Passed March 10, 1925; approved March 13, 1925; in effect March
13, 1925)

COLORADO RIVER COMPACT

*An Act approving and ratifying the Colorado river compact upon similar
action by the six states which have already ratified, and providing
for certification of the action of this State to the other states and the
United States*

Be it enacted by the Legislature of the State of Utah:

SECTION 1. Compact effective, when—reservation. That the provisions of the first paragraph, Article XI, of the Colorado River Compact, as set forth in the original compact filed in the archives of the department of state of the United States, at Washington, D. C., a copy of which is set forth in Chapter 5, Session Laws of Utah, 1923, which article of said compact makes the compact effective when it shall have been approved by the legislatures of the signatory states and by the Congress of the United States, are hereby waived and said compact shall become binding and obligatory upon the State of Utah and upon the other signatory states which have ratified or may hereafter ratify the said compact whenever at least six of the signatory states shall have consented thereto or approved the same and the Congress of the United States shall have given its consent and approval, provided that this Act shall be of no force or effect until this or a similar Act or resolution shall have been passed or adopted by the legislatures of the states which have heretofore ratified and approved the Colorado River Compact.

SEC. 2. Forwarding copies. That certified copies of this Act be forwarded by the governor of the State of Utah to the President of the United States, the Secretary of State of the United States and the governors of the States of Arizona, Colorado, California, New Mexico, Wyoming and Nevada.

SEC. 3. This Act shall take effect upon approval.

Approved March 13, 1925.

NOTE.—The foregoing act was repealed by the act of January 19, 1927 (Utah Laws, 1927, p. 1). See Appendix 229, p. A163, for the act of March 6, 1929, which again approved the Compact as a six-State agreement.

Appendix 226

**1925 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

WYOMING

(Act of February 25, 1925; Ch. 82, 18th Sess.; State Legislature;
Session Laws of Wyoming, 1925, pp. 85-86)

CHAPTER 82

(Original Senate File No. 75)

RATIFICATION OF COLORADO RIVER COMPACT

An Act relating to the Colorado River Compact

Whereas the Legislatures of the States of California, Colorado, Nevada, New Mexico, Utah, and Wyoming, heretofore have approved the Colorado River Compact, signed by the Commissioners for said States and the state of Arizona, and approved by Herbert Hoover as a representative of the United States of America, at Santa Fe, New Mexico, November 24th, 1922 (Chapter 3 of the Session Laws of Wyoming, 1923), and notice of the approval by the Legislature of each of said approving states has been given by the Governor to the Governors of the other signatory states, and to the President of the United States, as required by Article XI of said Compact: Now, Therefore,

Be It Enacted by the Legislature of the State of Wyoming:

SECTION 1. That the provisions of the first paragraph of Article XI of the Colorado River Compact, making said compact effective when it shall have been approved by the Legislature of each of the signatory states, are hereby waived and said Compact shall become binding and obligatory upon the State of Wyoming, and upon the other signatory states which have ratified and may hereafter ratify it, whenever at least six of the signatory states shall have consented thereto and the Congress of the United States shall have given its consent

and approval, provided, however, that this Act shall be of no force and effect until a similar Act or Resolution shall have been passed or adopted by the Legislatures of the States of California, Colorado, Nevada, New Mexico, and Utah.

SEC. 2: This Act shall take effect and be in force from and after its passage.

Approved February 25, 1925.

Appendix 227

**1929 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

CALIFORNIA

(Act of January 10, 1929; Ch. 1, 48th Sess.; Statutes and Amendments
to the Codes, 1929, pp. 1-7)

CHAPTER 1

*An Act to ratify and approve the Colorado river compact, signed at
Santa Fe, New Mexico, November 24, 1922, to repeal conflicting acts
and resolutions and directing that notice be given by the governor of
such ratification and approval*

(Approved by the Governor January 10, 1929; in effect immediately)

The people of the State of California do enact as follows:

SECTION 1. The Legislature of California hereby ratifies and approves that certain agreement or compact designated as the "Colorado river compact" signed at Santa Fe, New Mexico, on the twenty-fourth day of November 1922, by W. F. McClure as the commissioner for California under authority of and in conformity with the provisions of an act of the Legislature of California, approved May 12, 1921, entitled "An act authorizing the governor of California to appoint a representative of the State of California to serve upon a joint commission composed of representatives of the states of Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming and the United States of America, and constituted for the purpose of negotiating and entering into an agreement between the several states hereinabove mentioned and between said states and the United States of America, subject to the consent of congress, respecting further use and disposition of the waters of the Colorado river and streams tributary thereto, and fixing and determining the rights of each of said states and rights of the United States in and to the use, benefit and disposition of the waters of said stream and its tributaries," and signed by the commissioners for the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming under legislative authority of said states and approved by Herbert Hoover, appointed by the president as the representative of the United States under authority

and in conformity with the provisions of an act of the congress of the United States, approved August 19, 1921 (42 statutes at large, p. 171), entitled "An act to permit a compact or agreement between the states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado river, and for other purposes," which said compact is in words and figures as follows:

(Text of compact omitted, to avoid duplication.)

SEC. 2. That said compact shall not be binding or obligatory upon the State of California, unless and until the same shall have been approved by the legislature of each of the said signatory states and by the congress of the United States.

SEC. 3. All acts or parts of acts, and resolutions or parts of resolutions in conflict with this act are hereby repealed.

SEC. 4. The governor of the State of California shall give notice of this approval to the governor of each of the remaining signatory states and to the President of the United States in conformity with article eleven of said compact.

SEC. 5. Inasmuch as the Colorado river, during flood periods, constitutes a menace to life and property, and inasmuch as the act of congress, entitled "An act to provide for the construction of works for the protection and development of the Colorado river basin, for the approval of the Colorado river compact, and for other purposes," approved December 21, 1928, provides, among other things, for controlling the floods of the Colorado river and thereby eliminating such hazard, and also expressly provides that said act shall not take effect unless and until the said Colorado river compact shall have been ratified by each of the seven states signatory thereto, and the President by public proclamation shall have so declared, or, in the event the seven states signatory thereto shall have failed to ratify the said compact within six months from the date of the passage of said act, then until six of said states, including the State of California, shall have ratified said compact and shall consent to waive the provisions of the first paragraph of article eleven of said compact, which makes the same binding and obligatory only when approved by each of the seven states signatory thereto, and shall have approved said compact without conditions, save that of such six-state approval, and the President by public proclamation shall have so declared, it is hereby declared that this act is an urgency measure, necessary for the immediate preservation of the public health, peace, and safety and that under the provisions of section 1 of article four of the constitution of the State of California an urgency exists and this act shall take effect immediately.

Appendix 228

**1929 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

CALIFORNIA

(Act of March 4, 1929; Ch. 15, 48th Sess.; Statutes and Amendments
to the Codes, 1929, pp. 37-38)

CHAPTER 15

*An Act to waive certain provisions of the Colorado river compact approved
by California, January 10, 1929 (statutes 1929, chapter 1), and to
make said compact effective on a six-state basis, and to direct that
notice be given*

(Approved by the Governor March 4, 1929; in effect August 14, 1929)

The people of the State of California do enact as follows:

SECTION 1. The provisions of the first paragraph of article eleven of the Colorado river compact, signed at Santa Fe, New Mexico, November 24, 1922, referred to and set out at length in that certain act entitled "An act to ratify and approve the Colorado river compact, signed at Santa Fe, New Mexico, November 24, 1922, to repeal conflicting acts and resolutions and directing that notice be given by the governor of such ratification and approval," approved January 10, 1929 (statutes 1929, chapter 1), making said compact binding and obligatory when it shall have been approved by the legislature of each of the signatory states are hereby waived, and said compact shall become binding and obligatory upon the State of California, and upon the other signatory states which have ratified or may hereafter ratify said compact when at least six of the signatory states shall have consented thereto, approved and ratified the same, and the congress of the United States shall have given its consent and approval; *provided however*, that this act shall be of no force or effect until a similar act or resolution shall have been passed or adopted by the legislatures of the states of Colorado, Nevada, New Mexico, Utah, and Wyoming.

SEC. 2. Certified copies of this act shall be forwarded by the governor to the President of the United States, the secretary of state of the United States, and the governors of the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming.

A161

Appendix 229

**1929 LEGISLATION RATIFYING THE SIX-STATE
COMPACT**

UTAH

(Act of March 6, 1929; Ch. 31, 18th Sess.; Laws of Utah, 1929, pp.
25-26)

CHAPTER 31

(House Bill No. 162)

(Passed March 6, 1929; approved March 6, 1929; in effect March 6,
1929)

COLORADO RIVER COMPACT

An Act waiving certain provisions of the Colorado River Compact and approving and ratifying the same when at least five other states signatory thereto, including California, have taken similar action, and providing for certification of the action of this State to the other states and the United States

Be it enacted by the Legislature of the State of Utah:

SECTION 1. When compact becomes binding. That the provisions of the first paragraph, Article XI, of the Colorado river compact, as set forth in the original compact filed in the archives of the Department of State, of the United States, at Washington, D. C., a copy of which is set forth in Chapter 5, Session Laws of Utah, 1923, which article of said compact makes the compact effective when it shall have been approved by the legislatures of the signatory states and by the congress of the United States, are hereby waived and said compact shall become binding and obligatory upon the State of Utah, and upon the other signatory states which have ratified or may hereafter ratify the said compact whenever at least six of the signatory states, including the State of California, shall have consented thereto, approved and ratified the same without condition save that of six-state approval, and the congress of the United States shall have given its consent and approval, provided that this Act shall be of no force or effect until this or a similar Act or resolution shall have been passed

and adopted by the legislatures of six of the signatory states, including the State of California.

SEC. 2. Governor to forward copies. That certified copies of this Act be forwarded by the governor of the State of Utah, to the president of the United States, the secretary of state of the United States, and the governors of the States of Arizona, Colorado, California, New Mexico, Wyoming and Nevada.

SEC. 3. This Act shall take effect upon approval.

Approved March 6, 1929.

Appendix 230

**1944 LEGISLATION RATIFYING THE SEVEN-STATE
COMPACT**

ARIZONA

(Act approved February 24, 1944; Ch. 5, 17th Legislature; Session
Laws of Arizona, 1944, pp. 427-428)

CHAPTER 5

(Senate Bill No. 1)

*An Act ratifying the Colorado River Compact; and declaring an emer-
gency.*

Be it enacted by the Legislature of the State of Arizona:

SECTION 1. RATIFICATION. The Colorado River Compact executed at Santa Fe, New Mexico, November 24, 1922, by representatives of the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming is unconditionally ratified, approved and confirmed.

SEC. 2. EMERGENCY. To preserve the public peace, health and safety it is necessary that this Act become immediately operative. It is therefore declared to be an emergency measure, to take effect as provided by law.

Approved by the Governor February 24, 1944.

Filed in the office of the Secretary of State February 24, 1944.

Appendix 231

THE COLORADO RIVER COMPACT:

TEXT OF THE UPPER COLORADO RIVER BASIN COMPACT

(Entered into by the States of Arizona, Colorado, New Mexico, Utah, and Wyoming, at Santa Fe, New Mexico, October 11, 1948)

The State of Arizona, the State of Colorado, the State of New Mexico, the State of Utah and the State of Wyoming, acting through their Commissioners,

Charles A. Carson for the State of Arizona,
Clifford H. Stone for the State of Colorado,
Fred E. Wilson for the State of New Mexico,
Edward H. Watson for the State of Utah, and
L. C. Bishop for the State of Wyoming,

after negotiations participated in by Harry W. Bashore, appointed by the President as the representative of the United States of America, have agreed, subject to the provisions of the Colorado River Compact, to determine the rights and obligations of each signatory State respecting the uses and deliveries of the water of the Upper Basin of the Colorado River, as follows:

ARTICLE I

(a) The major purposes of this Compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System, the use of which was apportioned in perpetuity to the Upper Basin by the Colorado River Compact; to establish the obligations of each State of the Upper Division with respect to the deliveries of water required to be made at Lee Ferry by the Colorado River Compact; to promote interstate comity; to remove causes of present and future controversies; to secure the expeditious agricultural and industrial development of the Upper Basin, the storage of water and to protect life and property from floods.

(b) It is recognized that the Colorado River Compact is in full force and effect and all of the provisions hereof are subject thereto.

ARTICLE II

As used in this Compact:

(a) The term "Colorado River System" means that portion of the Colorado River and its tributaries within the United States of America.

(b) The term "Colorado River Basin" means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied.

(c) The term "States of the Upper Division" means the States of Colorado, New Mexico, Utah and Wyoming.

(d) The term "States of the Lower Division" means the States of Arizona, California, and Nevada.

(e) The term "Lee Ferry" means a point in the main stream of the Colorado River one mile below the mouth of the Paria River.

(f) The term "Upper Basin" means those parts of the States of Arizona, Colorado, New Mexico, Utah and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the Colorado River System above Lee Ferry.

(g) The term "Lower Basin" means those parts of the States of Arizona, California, Nevada, New Mexico and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the Colorado River System below Lee Ferry.

(h) The term "Colorado River Compact" means the agreement concerning the apportionment of the use of the waters of the Colorado River System dated November 24, 1922, executed by Commissioners for the States of Arizona, California, Colorado Nevada, New Mexico, Utah and Wyoming, approved by Herbert Hoover, representative of the United States of America, and proclaimed effective by the President of the United States of America, June 25, 1929.

(i) The term "Upper Colorado River System" means that portion of the Colorado River System above Lee Ferry.

(j) The term "Commission" means the administrative agency created by Article VIII of this Compact.

(k) The term "water year" means that period of twelve months ending September 30 of each year.

(l) The term "acre-foot" means the quantity of water required to cover an acre to the depth of one foot and is equivalent to 43,560 cubic feet.

(m) The term "domestic use" shall include the use of water for household, stock, municipal, mining, milling, industrial and other like purposes, but shall exclude the generation of electrical power.

(n) The term "virgin flow" means the flow of any stream undepleted by the activities of man.

ARTICLE III

(a) Subject to the provisions and limitations contained in the Colorado River Compact and in this Compact, there is hereby apportioned from the Upper Colorado River System in perpetuity to the States of Arizona, Colorado, New Mexico, Utah and Wyoming, respectively, the consumptive use of water as follows:

(1) To the State of Arizona the consumptive use of 50,000 acre-feet of water per annum.

(2) To the States of Colorado, New Mexico, Utah and Wyoming, respectively, the consumptive use per annum of the quantities resulting from the application of the following percentages to the total quantity of consumptive use per annum apportioned in perpetuity to and available for use each year by Upper Basin [sic] under the Colorado River Compact and remaining after the deduction of the use, not to exceed 50,000 acre-feet per annum, made in the State of Arizona.

State of Colorado.....	51.75 percent,
State of New Mexico.....	11.25 percent,
State of Utah.....	23.00 percent,
State of Wyoming.....	14.00 percent.

(b) The apportionment made to the respective States by paragraph (a) of this Article is based upon, and shall be applied in conformity with, the following principles and each of them:

(1) The apportionment is of any and all man-made depletions;

(2) Beneficial use is the basis, the measure and the limit of the right to use;

(3) No State shall exceed its apportioned use in any water year when the effect of such excess use, as determined by the Commission, is to deprive another signatory State of its apportioned use during that water year; provided, that this subparagraph (b) (3) shall not be construed as:

(i) Altering the apportionment of use, or obligations to make deliveries as provided in Article XI, XII, XIII or XIV of this Compact;

(ii) Purporting to apportion among the signatory States such uses of water as the Upper Basin may be entitled to under paragraphs (f) and (g) of Article III of the Colorado River Compact; or

(iii) Countenancing average uses by any signatory State in excess of its apportionment.

(4) The apportionment to each State includes all water necessary for the supply of any rights which now exist.

(c) No apportionment is hereby made, or intended to be made, of such uses of water as the Upper Basin may be entitled to under paragraphs (f) and (g) of Article III of the Colorado River Compact.

(d) The apportionment made by this Article shall not be taken as any basis for the allocation among the signatory States of any benefits resulting from the generation of power.

ARTICLE IV

In the event curtailment of use of water by the States of the Upper Division at any time shall become necessary in order that the flow at Lee Ferry shall not be depleted below that required by Article III of the Colorado River Compact, the extent of curtailment by each State of the consumptive use of water apportioned to it by Article III of this Compact shall be in such quantities and at such times as shall be determined by the Commission upon the application of the following principles:

(a) The extent and times of curtailment shall be such as to assure full compliance with Article III of the Colorado River Compact;

(b) If any State or States of the Upper Division, in the ten years immediately preceding the water year in which curtailment is necessary, shall have consumptively used more water than it was or they were, as the case may be, entitled to use under the apportionment made by Article III of this Compact, such State or States shall be required to supply at Lee Ferry a quantity of water equal to its, or the aggregate of their, overdraft or the proportionate part of such overdraft, as may be necessary to assure compliance with Article III of the Colorado River Compact, before demand is made on any other State of the Upper Division;

(c) Except as provided in subparagraph (b) of this Article, the extent of curtailment by each State of the Upper Division of the consumptive use of water apportioned to it by Article III of this Compact shall be such as to result in the delivery at Lee Ferry of a quantity of water which bears the same relation to the total required curtailment of use by the States of the Upper Division as the consumptive use of Upper Colorado River System water which was made by each such State during the water year immediately preceding the year in which the curtailment becomes necessary bears to the total consumptive use of such water in the States of the Upper Division during the same water year; provided, that in determining such relation the uses of water under rights perfected prior to November 24, 1922, shall be excluded.

ARTICLE V

(a) All losses of water occurring from or as the result of the storage of water in reservoirs constructed prior to the signing of this Compact shall be charged to the State in which such reservoir or reservoirs are located. Water stored in reservoirs covered by this paragraph (a)

shall be for the exclusive use of and shall be charged to the State in which the reservoir or reservoirs are located.

(b) All losses of water occurring from or as the result of the storage of water in reservoirs constructed after the signing of this Compact shall be charged as follows:

(1) If the Commission finds that the reservoir is used, in whole or in part, to assist the States of the Upper Division in meeting their obligations to deliver water at Lee Ferry imposed by Article III of the Colorado River Compact, the Commission shall make findings, which in no event shall be contrary to the laws of the United States of America under which any reservoir is constructed, as to the reservoir capacity allocated for that purpose. The whole or that proportion, as the case may be, of reservoir losses as found by the Commission to be reasonably and properly chargeable to the reservoir or reservoir capacity utilized to assure deliveries at Lee Ferry shall be charged to the States of the Upper Division in the proportion which the consumptive use of water in each State of the Upper Division during the water year in which the charge is made bears to the total consumptive use of water in all States of the Upper Division during the same water year. Water stored in reservoirs or in reservoir capacity covered by this subparagraph (b) (1) shall be for the common benefit of all of the States of the Upper Division.

(2) If the Commission finds that the reservoir is used, in whole or in part, to supply water for use in a State of the Upper Division, the Commission shall make findings, which in no event shall be contrary to the laws of the United States of America under which any reservoir is constructed, as to the reservoir or reservoir capacity utilized to supply water for use and the State in which such water will be used. The whole or that proportion, as the case may be, of reservoir losses as found by the Commission to be reasonably and properly chargeable to the State in which such water will be used shall be borne by that State. As determined by the Commission, water stored in reservoirs covered by this subparagraph (b) (2) shall be earmarked for and charged to the State in which the water will be used.

(c) In the event the Commission finds that a reservoir site is available both to assure deliveries at Lee Ferry and to store water for consumptive use in a State of the Upper Division, the storage of water for consumptive use shall be given preference. Any reservoir or reservoir capacity hereafter used to assure deliveries at Lee Ferry shall by order of the Commission be used to store water for consumptive use in a State, provided the Commission finds that such storage is reasonably necessary to permit such State to make the use of the water apportioned to it by this Compact.

ARTICLE VI

The Commission shall determine the quantity of the consumptive use of water, which use is apportioned by Article III hereof, for the Upper Basin and for each State of the Upper Basin by the inflow-outflow method in terms of man-made depletions of the virgin flow at Lee Ferry, unless the Commission, by unanimous action, shall adopt a different method of determination.

ARTICLE VII

The consumptive use of water by the United States of America or any of its agencies, instrumentalities or wards shall be charged as a use by the State in which the use is made; provided, that such consumptive use incident to the diversion, impounding, or conveyance of water in one State for use in another shall be charged to such latter State.

ARTICLE VIII

(a) There is hereby created an interstate administrative agency to be known as the "Upper Colorado River Commission." The Commission shall be composed of one Commissioner representing each of the States of the Upper Division, namely, the States of Colorado, New Mexico, Utah and Wyoming, designated or appointed in accordance with the laws of each such State and, if designated by the President, one Commissioner representing the United States of America. The President is hereby requested to designate a Commissioner. If so designated the Commissioner representing the United States of America shall be the presiding officer of the Commission and shall be entitled to the same powers and rights as the Commissioner of any State. Any four members of the Commission shall constitute a quorum.

(b) The salaries and personal expenses of each Commissioner shall be paid by the Government which he represents. All other expenses which are incurred by the Commission incident to the administration of this Compact, and which are not paid by the United States of America, shall be borne by the four States according to the percentage of consumptive use apportioned to each. On or before December 1 of each year, the Commission shall adopt and transmit to the Governors of the four States and to the President a budget covering an estimate of its expenses for the following year, and of the amount payable by each State. Each State shall pay the amount due by it to the Commission on or before April 1 of the year following. The payment of the expenses of the Commission and of its employees shall not be subject to the audit and accounting procedures of any of the four States; however, all receipts and disbursement of funds

handled by the Commission shall be audited yearly by a qualified independent public accountant and the report of the audit shall be included in and become a part of the annual report of the Commission.

(c) The Commission shall appoint a Secretary, who shall not be a member of the Commission, or an employee of any signatory State or of the United States of America while so acting. He shall serve for such term and receive such salary and perform such duties as the Commission may direct. The Commission may employ such engineering, legal, clerical and other personnel as, in its judgment, may be necessary for the performance of its functions under this Compact. In the hiring of employees, the Commission shall not be bound by the civil service laws of any State.

(d) The Commission, so far as consistent with this Compact, shall have the power to:

- (1) Adopt rules and regulations;
- (2) Locate, establish, construct, abandon, operate and maintain water gaging stations;
- (3) Make estimates to forecast water run-off on the Colorado River and any of its tributaries;
- (4) Engage in cooperative studies of water supplies of the Colorado River and its tributaries;
- (5) Collect, analyze, correlate, preserve and report on data as to the stream flows, storage, diversions and use of the waters of the Colorado River, and any of its tributaries;
- (6) Make findings as to the quantity of water of the Upper Colorado River System used each year in the Upper Colorado River Basin and in each State thereof;
- (7) Make findings as to the quantity of water deliveries at Lee Ferry during each water year;
- (8) Make findings as to the necessity for and the extent of the curtailment of use, required, if any, pursuant to Article IV hereof;
- (9) Make findings as to the quantity of reservoir losses and as to the share thereof chargeable under Article V hereof to each of the States;
- (10) Make findings of fact in the event of the occurrence of extraordinary drought or serious accident to the irrigation system in the Upper Basin, whereby deliveries by the Upper Basin of water which it may be required to deliver in order to aid in fulfilling obligations of the United States of America to the United Mexican States arising under the Treaty between the United States of America and the United Mexican States, dated February 3, 1944 (Treaty Series 994) become difficult, and report such findings to the Governors of the Upper Basin States, the President of the United States of America, the United States Section of the International Boundary and Water Commission,

and such other Federal officials and agencies as it may deem appropriate to the end that the water allotted to Mexico under Division III of such treaty may be reduced in accordance with the terms of such Treaty;

(11) Acquire and hold such personal and real property as may be necessary for the performance of its duties hereunder and to dispose of the same when no longer required;

(12) Perform all functions required of it by this Compact and do all things necessary, proper or convenient in the performance of its duties hereunder, either independently or in cooperation with any state or federal agency;

(13) Make and transmit annually to the Governors of the signatory States and the President of the United States of America, with the estimated budget, a report covering the activities of the Commission for the preceding water year.

(e) Except as otherwise provided in this Compact the concurrence of four members of the Commission shall be required in any action taken by it.

(f) The Commission and its Secretary shall make available to the Governor of each of the signatory States any information within its possession at any time, and shall always provide free access to its records by the Governors of each of the States, or their representatives, or authorized representatives of the United States of America.

(g) Findings of fact made by the Commission shall not be conclusive in any court, or before any agency or tribunal, but shall constitute prima facie evidence of the facts found.

(h) The organization meeting of the Commission shall be held within four months from the effective date of this Compact.

ARTICLE IX

(a) No State shall deny the right of the United States of America and, subject to the conditions hereinafter contained, no State shall deny the right of another signatory State, any person, or entity of any signatory State to acquire rights to the use of water, or to construct or participate in the construction and use of diversion works and storage reservoirs with appurtenant works, canals and conduits in one State for the purpose of diverting, conveying, storing, regulating and releasing water to satisfy the provisions of the Colorado River Compact relating to the obligation of the States of the Upper Division to make deliveries of water at Lee Ferry, or for the purpose of diverting, conveying, storing or regulating water in an upper signatory State for consumptive use in a lower signatory State, when such use is within the apportionment to such lower State made by this Compact. Such rights shall be subject to the rights of water users, in a

State in which such reservoir or works are located, to receive and use water, the use of which is within the apportionment to such State by this Compact.

(b) Any signatory State, any person or any entity of any signatory State shall have the right to acquire such property rights as are necessary to the use of water in conformity with this Compact in any other signatory State by donation, purchase or through the exercise of the power of eminent domain. Any signatory State, upon the written request of the Governor of any other signatory State, for the benefit of whose water users property is to be acquired in the State to which such written request is made, shall proceed expeditiously to acquire the desired property either by purchase at a price satisfactory to the requesting State, or, if such purchase cannot be made, then through the exercise of its power of eminent domain and shall convey such property to the requesting State or such entity as may be designated by the requesting State; provided, that all costs of acquisition and expenses of every kind and nature whatsoever incurred in obtaining the requested property shall be paid by the requesting State at the time and in the manner prescribed by the State requested to acquire the property.

(c) Should any facility be constructed in a signatory State by and for the benefit of another signatory State or States or the water users thereof, as above provided, the construction, repair, replacement, maintenance and operation of such facility shall be subject to the laws of the State in which the facility is located, except that, in the case of a reservoir constructed in one State for the benefit of another State or States, the water administration officials of the State in which the facility is located shall permit the storage and release of any water which, as determined by findings of the Commission, falls within the apportionment of the State or States for whose benefit the facility is constructed. In the case of a regulating reservoir for the joint benefit of all States in making Lee Ferry deliveries, the water administration officials of the State in which the facility is located, in permitting the storage and release of water, shall comply with the findings and orders of the Commission.

(d) In the event property is acquired by a signatory State in another signatory State for the use and benefit of the former, the users of water made available by such facilities, as a condition precedent to the use thereof, shall pay to the political subdivisions of the State in which such works are located, each and every year during which such rights are enjoyed for such purposes, a sum of money equivalent to the average annual amount of taxes levied and assessed against the land and improvements thereon during the ten years preceding the acquisition of such land. Said payments shall be in full reimbursement for the loss of taxes in such political subdivisions

of the State, and in lieu of any and all taxes on said property, improvements and rights. The signatory States recommend to the President and the Congress that, in the event the United States of America shall acquire property in one of the signatory States for the benefit of another signatory State, or its water users, provision be made for like payment in reimbursement of loss of taxes.

ARTICLE X

(a) The signatory States recognize La Plata River Compact [*sic*] entered into between the States of Colorado and New Mexico, dated November 27, 1922, approved by the Congress on January 29, 1925 (43 Stat. 796), and this Compact shall not affect the apportionment therein made.

(b) All consumptive use of water of La Plata River and its tributaries shall be charged under the apportionment of Article III hereof to the State in which the use is made; provided, that consumptive use incident to the diversion, impounding or conveyance of water in one State for use in the other shall be charged to the latter State.

ARTICLE XI

Subject to the provisions of this Compact, the consumptive use of the water of the Little Snake River and its tributaries is hereby apportioned between the States of Colorado and Wyoming in such quantities as shall result from the application of the following principles and procedures:

(a) *Water used under rights existing prior to the signing of this Compact.*

(1) Water diverted from any tributary of the Little Snake River or from the main stem of the Little Snake River above a point one hundred feet below the confluence of Savery Creek and the Little Snake River shall be administered without regard to rights covering the diversion of water from any down-stream points.

(2) Water diverted from the main stem of the Little Snake River below a point one hundred feet below the confluence of Savery Creek and the Little Snake River shall be administered on the basis of an interstate priority schedule prepared by the Commission in conformity with priority dates established by the laws of the respective States.

(b) *Water used under rights initiated subsequent to the signing of this Compact.*

(1) Direct flow diversions shall be so administered that, in time of shortage, the curtailment of use on each acre of land irrigated thereunder shall be as nearly equal as may be possible in both of the States.

(2) The storage of water by projects located in either State, whether of supplemental supply or of water used to irrigate land not irrigated at the date of the signing of this Compact, shall be so administered that in times of water shortage the curtailment of storage of water available for each acre of land irrigated thereunder shall be as nearly equal as may be possible in both States.

(c) Water uses under the apportionment made by this Article shall be in accordance with the principle that beneficial use shall be the basis, measure and limit of the right to use.

(d) The States of Colorado and Wyoming each assent to diversions and storage of water in one State for use in the other State, subject to compliance with Article IX of this Compact.

(e) In the event of the importation of water to the Little Snake River Basin from any other river basin, the State making the importation shall have the exclusive use of such imported water unless by written agreement, made by the representatives of the States of Colorado and Wyoming on the Commission, it is otherwise provided.

(f) Water use projects initiated after the signing of this Compact, to the greatest extent possible, shall permit the full use within the Basin in the most feasible manner of the waters of the Little Snake River and its tributaries, without regard to the state line; and, so far as is practicable, shall result in an equal division between the States of the use of water not used under rights existing prior to the signing of this Compact.

(g) All consumptive use of the waters of the Little Snake River and its tributaries shall be charged under the apportionment of Article III hereof to the State in which the use is made; provided, that consumptive use incident to the diversion, impounding or conveyance of water in one State for use in the other shall be charged to the latter State.

ARTICLE XII

Subject to the provisions of this Compact, the consumptive use of the waters of Henry's Fork, a tributary of Green River originating in the State of Utah and flowing into the State of Wyoming and thence into the Green River in the State of Utah; Beaver Creek, originating in the State of Utah and flowing into Henry's Fork in the State of Wyoming; Burnt Fork, a tributary of Henry's Fork, originating in the State of Utah and flowing into Henry's Fork in the State of Wyoming; Birch Creek, a tributary of Henry's Fork originating in the State of Utah and flowing into Henry's Fork in the State of Wyoming; and Sheep Creek, a tributary of Green River in the State of Utah, and their tributaries, are hereby apportioned between

the States of Utah and Wyoming in such quantities as will result from the application of the following principles and procedures:

(a) *Waters used under rights existing prior to the signing of this Compact.*

Waters diverted from Henry's Fork, Beaver Creek, Burnt Fork, Birch Creek and their tributaries, shall be administered without regard to the state line on the basis of an interstate priority schedule to be prepared by the States affected and approved by the Commission in conformity with the actual priority of right of use, the water requirements of the land irrigated and the acreage irrigated in connection therewith.

(b) Waters used under rights from Henry's Fork, Beaver Creek, Burnt Fork, Birch Creek and their tributaries, initiated after the signing of this Compact shall be divided fifty percent to the State of Wyoming and fifty percent to the State of Utah and each State may use said waters as and where it deems advisable.

(c) The State of Wyoming assents to the exclusive use by the State of Utah of the water of Sheep Creek, except that the lands, if any, presently irrigated in the State of Wyoming from the water of Sheep Creek shall be supplied with water from Sheep Creek in order of priority and in such quantities as are in conformity with the laws of the State of Utah.

(d) In the event of the importation of water to Henry's Fork, or any of its tributaries, from any other river basin, the State making the importation shall have the exclusive use of such imported water unless by written agreement made by the representatives of the States of Utah and Wyoming on the Commission, it is otherwise provided.

(e) All consumptive use of waters of Henry's Fork, Beaver Creek, Burnt Fork, Birch Creek, Sheep Creek, and their tributaries shall be charged under the apportionment of Article III hereof to the State in which the use is made; provided, that consumptive use incident to the diversion, impounding or conveyance of water in one State for use in the other shall be charged to the latter State.

(f) The States of Utah and Wyoming each assent to the diversion and storage of water in one State for use in the other State, subject to compliance with Article IX of this Compact. It shall be the duty of the water administrative officials of the State where the water is stored to release said stored water to the other State upon demand. If either the State of Utah or the State of Wyoming shall construct a reservoir in the other State for use in its own State, the water users of the State in which said facilities are constructed may purchase at cost a portion of the capacity of said reservoir sufficient for the irrigation of their lands thereunder.

(g) In order to measure the flow of water diverted, each State shall cause suitable measuring devices to be constructed, maintained and operated at or near the point of diversion into each ditch.

(h) The State Engineers of the two States jointly shall appoint a Special Water Commissioner who shall have authority to administer the water in both States in accordance with the terms of this Article. The salary and expenses of such Special Water Commissioner shall be paid, thirty percent by the State of Utah and seventy percent by the State of Wyoming.

ARTICLE XIII

Subject to the provisions of this Compact, the rights to the consumptive use of the water of the Yampa River, a tributary entering the Green River in the State of Colorado, are hereby apportioned between the States of Colorado and Utah in accordance with the following principles:

(a) The State of Colorado will not cause the flow of the Yampa River at the Maybell Gaging Station to be depleted below an aggregate of 5,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification and approval of this Compact. In the event any diversion is made from the Yampa River or from tributaries entering the Yampa River above the Maybell Gaging Station for the benefit of any water use project in the State of Utah, then the gross amount of all such diversions for use in the State of Utah, less any returns from such diversions to the River above Maybell, shall be added to the actual flow at the Maybell Gaging Station to determine the total flow at the Maybell Gaging Station.

(b) All consumptive use of the waters of the Yampa River and its tributaries shall be charged under the apportionment of Article III hereof to the State in which the use is made; provided, that consumptive use incident to the diversion, impounding or conveyance of water in one State for use in the other shall be charged to the latter State.

ARTICLE XIV

Subject to the provisions of this Compact, the consumptive use of the waters of the San Juan River and its tributaries is hereby apportioned between the States of Colorado and New Mexico as follows:

The State of Colorado agrees to deliver to the State of New Mexico from the San Juan River and its tributaries which rise in the State of Colorado a quantity of water which shall be sufficient, together with water originating in the San Juan Basin in the State of New

Mexico, to enable the State of New Mexico to make full use of the water apportioned to the State of New Mexico by Article III of this Compact, subject, however, to the following:

(a) A first and prior right shall be recognized as to:

(1) All uses of water made in either State at the time of the signing of this Compact; and

(2) All uses of water contemplated by projects authorized, at the time of the signing of this Compact, under the laws of the United States of America whether or not such projects are eventually constructed by the United States of America or by some other entity.

(b) The State of Colorado assents to diversions and storage of water in the State of Colorado for use in the State of New Mexico, subject to compliance with Article IX of this Compact.

(c) The uses of the waters of the San Juan River and any of its tributaries within either State which are dependent upon a common source of water and which are not covered by (a) hereof, shall in times of water shortages be reduced in such quantity that the resulting consumptive use in each State will bear the same proportionate relation to the consumptive use made in each State during times of average water supply as determined by the Commission; provided, that any preferential uses of water to which Indians are entitled under Article XIX shall be excluded in determining the amount of curtailment to be made under this paragraph.

(d) The curtailment of water use by either State in order to make deliveries at Lee Ferry as required by Article IV of this Compact shall be independent of any and all conditions imposed by this Article and shall be made by each State, as and when required, without regard to any provision of this Article.

(e) All consumptive use of the waters of the San Juan River and its tributaries shall be charged under the apportionment of Article III hereof to the State in which the use is made; provided, that consumptive use incident to the diversion, impounding or conveyance of water in one State for use in the other shall be charged to the latter State.

ARTICLE XV

(a) Subject to the provisions of the Colorado River Compact and of this Compact, water of the Upper Colorado River System may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes.

(b) The provisions of this Compact shall not apply to or interfere with the right or power of any signatory State to regulate within its boundaries the appropriation, use and control of water, the consump-

tive use of which is apportioned and available to such State by this Compact.

ARTICLE XVI

The failure of any State to use the water, or any part thereof, the use of which is apportioned to it under the terms of this Compact, shall not constitute a relinquishment of the right to such use to the Lower Basin or to any other State, nor shall it constitute a forfeiture or abandonment of the right to such use.

ARTICLE XVII

The use of any water now or hereafter imported into the natural drainage basin of the Upper Colorado River System shall not be charged to any State under the apportionment of consumptive use made by this Compact.

ARTICLE XVIII

(a) The State of Arizona reserves its rights and interests under the Colorado River Compact as a State of the Lower Division and as a State of the Lower Basin.

(b) The State of New Mexico and the State of Utah reserve their respective rights and interests under the Colorado River Compact as States of the Lower Basin.

ARTICLE XIX

Nothing in this Compact shall be construed as:

(a) Affecting the obligations of the United States of America to Indian tribes;

(b) Affecting the obligations of the United States of America under the Treaty with the United Mexican States (Treaty Series 994);

(c) Affecting any rights or powers of the United States of America, its agencies or instrumentalities, in or to the waters of the Upper Colorado River System, or its capacity to acquire rights in and to the use of said waters;

(d) Subjecting any property of the United States of America, its agencies or instrumentalities, to taxation by any State or subdivision thereof, or creating any obligation on the part of the United States of America, its agencies or instrumentalities, by reason of the acquisition, construction or operation of any property or works of whatever kind, to make any payment to any State or political subdivision thereof, State agency, municipality or entity whatsoever, in reimbursement for the loss of taxes;

(e) Subjecting any property of the United States of America, its agencies or instrumentalities, to the laws of any State to an extent other than the extent to which such laws would apply without regard to this Compact.

ARTICLE XX

This Compact may be terminated at any time by the unanimous agreement of the signatory States. In the event of such termination, all rights established under it shall continue unimpaired.

ARTICLE XXI

This Compact shall become binding and obligatory when it shall have been ratified by the legislatures of each of the signatory States and approved by the Congress of the United States of America. Notice of ratification by the legislatures of the signatory States shall be given by the Governor of each signatory State to the Governor of each of the other signatory States and to the President of the United States of America, and the President is hereby requested to give notice to the Governor of each of the signatory States of approval by the Congress of the United States of America.

IN WITNESS WHEREOF, the Commissioners have executed six counterparts hereof each of which shall be and constitute an original, one of which shall be deposited in the archives of the Department of State of the United States of America, and one of which shall be forwarded to the Governor of each of the signatory States.

Done at the City of Santa Fe, State of New Mexico, this 11th day of October, 1948.

Charles A. Carson,

CHARLES A. CARSON,

Commissioner for the State of Arizona.

Clifford H. Stone,

CLIFFORD H. STONE,

Commissioner for the State of Colorado.

Fred E. Wilson,

FRED E. WILSON,

Commissioner for the State of New Mexico.

Edward H. Watson,

EDWARD H. WATSON,

Commissioner for the State of Utah.

L. C. Bishop,

L. C. BISHOP,

Commissioner for the State of Wyoming.

Grover A. Giles,

GROVER A. GILES,

Secretary.

Approved:

Harry W. Bashore,

HARRY W. BASHORE,

Representative of the United States of America.

Part III

DOCUMENTS RELATED TO THE ENACTMENT OF THE BOULDER CANYON PROJECT ACT: THE "SIBERT BOARD"

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301	Act authorizing appointment of Colorado River Board ("Sibert Board"); act of May 29, 1928 (45 Stat. 1011)-----	A185
302	Report of Colorado River Board ("Sibert Board"), December 3, 1928 (H. Doc. 446, 70th Cong., 2d sess.)-----	A187
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Appendix 301

**LEGISLATION AUTHORIZING APPOINTMENT OF
BOARD OF ENGINEERS AND GEOLOGISTS
("SIBERT BOARD")**

(Act of May 29, 1928, 45 Stat. 1011)

JOINT RESOLUTION To appoint a Board of Engineers to examine and report upon the dam to be constructed under H. R. 5773, the Boulder Dam bill

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is hereby authorized and directed to appoint a board of five eminent engineers and geologists, at least one of whom shall be an engineer officer of the Army on the active or retired list, to examine the proposed site of the dam to be constructed under the provisions of H. R. 5773, Seventieth Congress, first session, and review the plans and estimates made therefor, and to advise him prior to December 1, 1928, as to matters affecting the safety, the economic and engineering feasibility, and adequacy of the proposed structure and incidental works, the compensation of said board to be fixed by him for each, respectively, but not to exceed \$50 per day and necessary traveling expenses, including a per diem of not to exceed \$6, in lieu of subsistence, for each member of the board so employed for the time employed and actually engaged upon such work: And provided further, That the work of construction shall not be commenced until plans therefor are approved by said special board of engineers. No authority hereby conferred on the Secretary of the Interior shall be exercised without the President's sanction and approval. The expenses herein authorized shall be paid out of the reclamation fund established by the Act of June 17, 1902.

Approved, May 29, 1928.

Appendix 302

REPORT OF BOARD OF ENGINEERS ("SIBERT BOARD") ON "THE BOULDER CANYON PROJECT"

(H. Doc. 446, 70th Cong.)

LETTER OF TRANSMITTAL

THE SECRETARY OF THE INTERIOR,
Washington, December 3, 1928.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit herewith a copy of the report of the board of engineers appointed by the Secretary of the Interior, with the approval of the President, under authority of the joint resolution approved May 29, 1928, "To appoint a board of engineers to examine and report upon the dam to be constructed under H. R. 5773, the Boulder Dam bill" (S. J. Res. 164).

Very truly yours,

ROY O. WEST.

LETTER OF SUBMITTAL

DEPARTMENT OF THE INTERIOR,
COLORADO RIVER BOARD,
Denver, Colo., November 24, 1928.

HON. ROY O. WEST,
Secretary of the Interior, Washington, D. C.

SIR: The Colorado River Board has the honor to forward herewith five copies (one by air mail) of its report on the Boulder Canyon project, made in accordance with the requirements of Public Resolution 65, Seventieth Congress.

Very respectfully,

WM. L. SIBERT,
Chairman, Colorado River Board.

A187

REPORT OF THE COLORADO RIVER BOARD ON THE BOULDER CANYON PROJECT

The board of engineers and geologists appointed in accordance with Resolution 65, Seventieth Congress, approved May 29, 1928, has the honor to submit the following report as to the matters enumerated in said resolution, that were to be reported on prior to December 1, 1928.

The duties of the board, in so far as this report is concerned, are:

To examine the proposed site of the dam to be constructed under the provisions of H. R. 5773, Seventieth Congress, first session, and review the plans and estimates made therefor, and to advise him (the Secretary of the Interior) prior to December 1, 1928, as to matters affecting the safety, the economic and engineering feasibility, and adequacy of the proposed structure and incidental works.

The structures proposed in H. R. 5773, Seventieth Congress, are:

A dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water and a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam with the Imperial and Coachella Valleys in California.

The "incidental works" at the dam are construed to be a power house with its equipment of turbines, generators, and all appurtenant appliances needed in the generation and control of electric energy.

The "appurtenant structures" for the main canal are construed to be a higher dam at Laguna, an enlargement of the headworks and desilting basin, together with the necessary flumes, bridges, culverts, and other incidental structures along the line of the canal.

THE COLORADO RIVER

The Colorado River, one of the large rivers of the country, drains an area of about 244,000 square miles and has a total length from source to mouth of about 1,700 miles.

Its total fall is over 7,500 feet, or an average fall of about 4.5 feet per mile. The average rainfall on the drainage area is about 10 inches, over thousands of square miles less than 5 inches, and the average annual run-off is less than 1½ inches. Its main flow is derived from the melting of snow on the mountains of the upper basin. The principal characteristics of its flow are low waters during the autumn and winter months, with a normal flood from the melting snows, usually beginning late in April, reaching its maximum in June, and ending by the middle of August. This flow is modified and intensified by torrential floods of short duration, which come in general from its southern tributaries, and may occur during almost any month of the spring, fall, or winter. Its flood flows afford by far the greater quantity of water produced by the stream, and must

be conserved and impounded in order to be successfully utilized for water supply and power production. Floods of 200,000 second-feet are not unusual, and much larger ones have occurred.

ENGINEERING FEASIBILITY

The engineering feasibility of the proposed dam across the main stream of the Colorado River, at Black Canyon or Boulder Canyon, is basic.

SELECTION OF SITE

The board examined both sites in question, studied the available data concerning them, the geological formations surrounding them, and the seismic history of the region. Conclusions concerning these dam sites are embodied in the following statement:

Boulder Canyon site

The site in Boulder Canyon is about 40 miles distant from the nearest railway line passing through Las Vegas, Nev. The railway approach is comparatively easy to the vicinity of the canyon, where extremely rugged topography adds considerable, though not insurmountable, difficulties.

The canyon walls at this site rise to 1,000 feet above the river and the rock gorge is at least 150 feet deep below low-water level. It is 420 feet wide at the low-water line and approximately 1,020 feet wide at the crest of a dam that would impound 26,000,000 acre-feet of water.

The foundation rock is granite and associated granitic rock of excellent quality. Regular joints and more irregular fractures are very numerous, and there is an occasional fault zone. These weaknesses are prominent on the weathered surface, but test tunnels prove that they are of little consequence to within a few feet from the surface. On the whole, the rock is strong, substantial, durable, and the whole mass is essentially tight. It will stand well in tunneling. There is no danger of the rock failing to meet requirements as a dam foundation.

The rock of the vicinity is suitable for construction material, and there are local sources of good gravel.

If no other site were available, the Boulder Canyon site could safely be used so far as geological conditions are concerned. In comparison with the Black Canyon site, however, the latter has certain advantages.

Black Canyon site

The most favorable location in Black Canyon is about 40 miles distant from Las Vegas, Nev., and the Union Pacific Railroad. The approach is comparatively easy to the vicinity and not particularly

difficult to the site itself. A construction railway from Las Vegas would pass near available gravel deposits and the best quarry sites lie immediately adjacent to the dam site on the same line of approach. Despite the ruggedness of the surrounding country and the depth of the gorge, the terrain above the 1,500-foot contour, where the quarries, railway yards, shops, and camps would be located, is open, and its development into such use at reasonable cost is entirely practicable.

The canyon walls at this site rise to about 900 feet above the river and the central part of the rock gorge at this location is 110 to 127 feet deep below low water. The cross section of the gorge at the dam site is 350 feet wide at the low-water line and 880 feet wide at the crest of a dam that would impound 26,000,000 acre-feet of water.

The foundation is a volcanic breccia or tuff, originally an accumulation of fragments of many kinds derived from volcanic eruptions, and now transformed into a well-cemented, tough, durable mass of rock standing with remarkably steep walls and resisting the attack of weather and erosion exceptionally well. The whole rock mass is essentially impervious.

The rock formation is somewhat jointed and exhibits occasional fault displacements, which are now completely healed. It is an almost ideal rock for tunneling, is satisfactory in every essential, and is suitable for use in construction.

The associated rock formations at higher levels, more advantageously situated for development for construction uses, are also volcanic in origin, including both andesite flows and indurated andesitic tuffs, and are of excellent quality for that purpose. Near by there are deposits of angular gravels that have been proven by test to be suitable for use in construction.

Comparison of the two sites

In general, geologic conditions at Black Canyon are superior to those at Boulder Canyon. The Black Canyon site is more accessible, the canyon is narrower, the gorge is shallower below water level, the walls are steeper, and a dam of the same height here would cost less and would have a somewhat greater reservoir capacity. The rock formation is less jointed, stands up in sheer cliffs better, exhibits fewer open fractures, is better healed where formerly broken, and is less pervious in mass than is the rock of the other site. The Black Canyon rock is not so hard to drill as that of Boulder Canyon, and it will stand better in large tunnel excavations with less danger to the workmen.

There is no doubt whatever but that the rock formations of this site are competent to carry safely the heavy load and abutment thrusts contemplated. It is well adapted to making a tight seal and for opposing water seepage and circulation under and around the

ends of the dam. It insures successful tunneling, and, so far as the rock is concerned, the general safety and permanence of the proposed structures.

The board is of the opinion that the Black Canyon site is suitable for the proposed dam and is preferable to that of the Boulder Canyon.

DANGER FROM EARTHQUAKES AND DEFORMATION

In former geologic times this district was subjected repeatedly to volcanism and deformation. These events must have been accompanied by earthquakes. Such evidence as there is, both to be observed in the field and to be gathered from records, indicates that these geological activities ceased long ago and that the region has been virtually undisturbed for a very long time. The district is recognized as having comparative freedom from present-day earth movements, and the conclusion is that danger from local earthquakes of enough violence to threaten a properly constructed dam in Black Canyon is negligible.

REVIEW OF PLANS AND ESTIMATES

The dam and incidental works

The board is of the opinion that it is feasible from an engineering standpoint to build a dam across the Colorado River at Black Canyon that will safely impound water to an elevation of 550 feet above low water. The cost, however, will be greater than that contemplated in the project authorized in H. R. 5773.

The dam.—The dam proposed by the Bureau of Reclamation and assumed to be the one referred to in H. R. 5773 is of the gravity type, curved in plan, with allowable stresses as high as 40 tons per square foot.

It is the opinion of the board that a dam of the gravity type is suitable for the site in question, and that such a dam built across Black Canyon would be safe, provided the maximum stresses allowed do not exceed those adopted in standard practice.

The proposed dam would be by far the highest yet constructed and would impound 26,000,000 acre-feet of water. If it should fail, the flood created would probably destroy Needles, Topock, Parker, Blythe, Yuma, and permanently destroy the levees of the Imperial district, creating a channel into Salton Sea which would probably be so deep that it would be impracticable to reestablish the Colorado River in its normal course. To avoid such possibilities the proposed dam should be constructed on conservative if not ultraconservative lines.

Maximum foundation and structural stresses have until late years been limited, in the best practice, to about 20 tons per square foot.

Until perhaps 20 years ago this practice was regarded as standard. The demand for high dams at reasonable expense has, however, induced more economical designs, and such stresses have been increased to 30 tons per square foot in numerous structures which have been in use a sufficient period to cause this practice to be considered conservative. Stresses in excess of 30 tons cannot be considered conservative in a structure of this unprecedented magnitude and importance, failure of which would result in such an overwhelming disaster.

In consideration of these facts and possibilities, it is the judgment of the board that the dam should be designed for maximum calculated stresses not exceeding 30 tons per square foot. This will add materially to the cost of the dam, which increase will be included in the estimates.

Cofferdam construction and river diversion.—To control the flow of the river during construction, the proposed plans contemplate the diversion of 100,000 second-feet of water around the dam site by means of tunnels through the canyon walls. The upper cofferdam height was planned to be such that water could rise against it until sufficient head was created to force this amount of water through three tunnels 35 feet in diameter.

The proposed work in this connection comprised:

The building of two rock-fill cofferdams, one upstream 79 feet high, the other downstream 29 feet high, above low-water level, involving the placing of 164,000 cubic yards of earth, the quarrying and placing of 757,000 cubic yards of rock; the making and unwatering of open excavations in the river bed about 125 feet below low water, involving 531,000 cubic yards of material (sand, gravel, and boulders), with an uncertain amount of water; the preparing of foundations and placing of 235,000 cubic yards of concrete in the heel and tow [sic] of the dam in such a way as to form permanent cofferdams to protect the remainder of the work, all of the foregoing operations to be accomplished in one low-water season of less than nine months.

The board is of the opinion that it is not feasible, without undue risk to the men working in the excavations and on the dam, and to the inhabitants of the valley below, to carry out the plan as proposed. It is further of the opinion that the proposed diversion is inadequate and that provision should be made for diverting round the dam site, through tunnels, a flow of at least 200,000 second-feet. It is also the opinion of the board that the height of the water against the upper cofferdam should be ordinarily limited so as not to impound a volume which, if added to the floodwaters, would, in the event of failure of the cofferdam, endanger life and property down the valley. This would limit the elevation of the water surface against the upper cofferdam to about 55 feet above low water or 700 feet above sea level.

These modifications would not only add essential elements of safety but also would enable operations to proceed continuously through a normal flood season.

It is the opinion of the board that it is feasible to construct cofferdams of suitable height at this locality and make them reasonably tight.

Permanent spillway.—The spillway capacity planned in connection with the proposed dam was about 110,000 second-feet without overtopping the dam. Floods reaching a maximum flow of 380,000 second-feet have been reported, and old high-water marks are said to indicate a possible flood flow of as much as 500,000 second-feet. The board is of the opinion that water in quantity should not be permitted to flow over a dam of this height.

A permanent spillway utilizing the increased capacity of the diversion tunnels provided in the revised plans will make it practicable to prevent any expected flood from overtopping the dam.

Excavation for the main dam.—The purpose of the revised plans for cofferdams and river diversion is to avoid probable interruption and to insure the safety of the earlier stages of the work, including the excavation for the foundations of the main dam, through a mixed deposit of sand, gravel, and boulders which fills the lower section of the gorge to a depth of more than 100 feet.

The chief factor which may affect the progress of the work is that of water seepage into the excavation, through the river fill under the cofferdams. Seepage into the excavation is to be expected. Its amount and rate cannot be foretold.

The effect of water would be twofold. It would involve pumping to keep the pit unwatered and it would add to the difficulties and amount of excavation by causing the slopes to ravel and slump. If the flow of water is sufficient to cause excessive raveling and slumping, it may be necessary to intercept this underground flow by wells or galleries or by other means. In the event of extreme difficulties it may be necessary to use caissons to carry the excavation down to the rock bottom in the deepest portion of the section.

It is the judgment of the board that it is feasible to make the required excavation for the permanent dam, but it is their opinion that plans and estimates of cost should include provision for the control and handling of a considerable volume of water.

The power plant.—While a powerhouse must be fitted to a particular site and its equipment must be designed and selected for the particular conditions which obtain at such site, the entire installation will nevertheless be largely standard and offers no particular difficulties.

The board is of the opinion that the plans proposed are feasible from an engineering standpoint. Questions of cost will be considered in another part of the report entitled "Estimates."

The main canal and appurtenant structures

The bill provides for the construction of a canal connecting the Laguna Dam with the Imperial and Coachella Valleys, whereas the original estimate of \$31,000,000 applies only to a canal reaching the distribution system of the Imperial Valley. The revised estimate will include the cost of constructing that portion of the canal leading to the Coachella Valley.

The Imperial Valley receives its water for irrigation and domestic purposes from the Colorado River by means of the Imperial Canal. The water is diverted from the river at Rockwood Gates, about 1 mile north of the international boundary, and is thence carried in a canal through Mexican territory and back into the United States to the Imperial Valley, thus avoiding the high mesa and sand-hill country north of the international boundary. In most of its 50-mile course in Mexico this canal follows the Alamo River channel, which formerly led into the Salton Sea.

The main canal is to be entirely within the United States. Under the proposed plan the water is to be diverted from the river at Laguna Dam, the present intake of the canal for the Yuma irrigation project, 23 miles by river above the intake of the Imperial Canal. This will allow water to be taken from the river at the higher elevation necessary to permit the canal to serve its purposes.

From the intake the proposed line of the main canal leads southwest to a point near the river just north of the international boundary, thence west approximately parallel to that line, to a point about 10 miles west of Calexico, a total length of 75 miles, making connections with the Imperial Valley system. At a point on the east mesa a canal branches off and leads to the Coachella Valley.

Between the Colorado River and Imperial Valley the canal location, for a length of 10 miles, crosses a region of sand dunes, some of which reach a height of about 150 feet above the canal bed. For much of this distance the canal cut will be over 50 feet deep. The grade of this section of the canal is such that the water surface will be below the mesa level and hence below the bases of the sand dunes. Winds above a velocity of 10 miles an hour cause a movement of the surface sand, which increases with the velocity of the wind, and special provision should be made to prevent undue silting of the canal by the "blow sand" as well as for the removal of the sand that will drift into the canal prism. In order to observe conditions, the board visited the sand-dune belt several times, once during a sand storm. Although it is clear that difficulties are presented by the drifting sand, it is the opinion of the board that it is feasible to construct, maintain, and successfully operate the canal. The overcoming of these difficulties will affect the cost, which has been allowed for in the estimates.

The board believes that the canal should be lined with concrete through the sand-dune region and should be given a slope sufficient to carry the in-blown sand to a suitable place for deposit and removal.

Estimates

The board in its review of the estimates for the proposed structures has reached the conclusion that such estimates should be modified so as to provide as follows:

<i>Estimated cost</i>	
Dam and reservoir (26,000,000 acre-feet capacity).....	\$70, 600, 000
1,000,000 horsepower development.....	38, 200, 000
The all-American canal.....	38, 500, 000
Interest during construction on above.....	17, 700, 000
	<hr/>
Total.....	165, 000, 000
In this revision stresses in the dam have been limited to a maximum of 30 tons per square foot, and a diversion capacity of 200,000 second-feet is provided.	
Should the canal to Coachella Valley be considered a part of the main canal, the above estimates would be increased by the sum of.....	11, 000, 000
	<hr/>
This would make the total estimated cost for all items in H. R. 5773.....	176, 000, 000

These estimates are based on a construction period of seven years.

ADEQUACY OF PROPOSED STRUCTURES

A dam of 550 feet above low water, across the Colorado River at Black Canyon, impounding 26,000,000 acre-feet of water, will be adequate, in the opinion of the board, to so regulate the flow of the lower Colorado as to control ordinary floods, to improve the present navigation possibilities, and to store and deliver the available water for reclamation of public lands and for other beneficial uses within the United States.

The high-water flow of the flood of 1884 is reported to have been 380,000 second-feet. Such a flood, or one of greater magnitude, is to be expected. The flood of 1884 is the highest concerning which there is fairly definite information, and as far as can be ascertained, such a flood has occurred but once in the last 50 years. A flood of this magnitude could be so controlled at the dam as to limit the flow in the river below to about 160,000 second-feet. Should such a flow sweep down the lower Colorado River, following a long period of normal regulated flow, with the consequent encroachment of vegetation on the flood plain and the probable neglect of flood protection works, it would be more destructive than a 160,000 second-foot flood under present conditions. It should be noted that the Boulder Dam project in no way affects the flood discharge of the Gila River. In

the event of flood damage in the lower river valley from either river, regulation at the dam would permit repairs to be made on the return of a controllable flow.

The adequacy of the proposed hydroelectric plant to generate sufficient power to make the project authorized a self-supporting and financially solvent undertaking is treated in the section on economic feasibility.

THE WATER SUPPLY OF THE COLORADO RIVER

The flow of the Colorado River is one of the fundamental factors on which the success of this project depends. On the stream flow depends the amount of land that can be irrigated and the amount of power that can be generated. The information on which this flow has been estimated is inadequate to furnish an accurate or sound estimate on which to base an important project without using factors of safety sufficiently great to make such estimates conservative and safe. Since the water supply is such a vital element in the problem, the board has inquired into the subject as thoroughly as the limited time would permit.

The estimates of flow on which this project has been predicated are the measurements of the flow of the river made at Yuma continuously since 1902. The methods used in gaging at Yuma were those common at the time the measurements were begun, and while improved methods of gaging were adopted at other gaging stations, these old methods were continued in use at Yuma until 1918, and with little improvement until 1926.

To determine the flow in the Colorado River above Laguna Dam there was subtracted from the Yuma gagings the estimated flow of the Gila River, which joins the Colorado between Yuma and the dam. The flows of the Gila are based on information of very doubtful value and can be considered as little better than fair guesses, whether too large or too small cannot be determined. To the reduced flow as arrived at above, the flow through the Yuma Canal was next added, to get the gross flow above Laguna Dam. The measurements of flow of the Yuma Canal are approximately correct.

From Black Canyon to Laguna Dam there is a loss in flow due to irrigation, evaporation, and possibly to seepage. Comparison of flow of the Colorado River at Topock and Laguna Dam gives some idea of the amount of this loss, but for most years it is so unsatisfactory as to be of little value. The gaugings, however, for 1926 and 1927, both at Yuma and Topock, are believed to have been fairly correct and give a reasonable basis for such an estimate. The figure used in the original flow calculations to represent this loss was 1,200,000 acre-feet per annum, and the addition of this amount to each yearly flow at the Laguna Dam gave the estimated depleted flow (or the normal

flow of the river for that year less the water used for irrigation) at Black Canyon.

The information desired was the flow for each year at Black Canyon brought down to present conditions. To calculate this required that to each year's flow, estimated as above, should be added the amount of water used for irrigation that year, after which the amount of water used for irrigation at the present time was deducted. Neither of these quantities was known and they had to be estimated. These estimates were based on the assumption that the net use or "consumptive use" of water per annum was $1\frac{1}{2}$ acre-feet per acre irrigated. This is as good an approximation as can be made. The amount of irrigation from year to year was calculated on the basis of the census returns for 1902, 1909, and 1919.

In consequence of these methods the net results arrived at in the original estimates for the flow at Black Canyon are exceedingly uncertain, and in the opinion of the board are too high.

YUMA GAUGINGS

The Yuma gaugings, covering the period from 1902 to 1922, have been used as a basis for the original estimate of water supply for the Boulder Canyon project, and were apparently considered to be applicable to the average annual flow for at least the 50-year period of amortization.

The average annual flow at Boulder Canyon is estimated by the Reclamation Bureau at about 16,200,000 acre-feet, with a corresponding annual flow at Laguna Dam of 15,000,000 acre-feet. These figures do not seem to have been questioned in any reports that have come to the attention of the board, except in the memorandum of Herman Stabler, United States Geological Survey, to the Secretary of the Interior, dated March 17, 1924, in which the average flow at Laguna Dam was estimated for the period 1878-1922 at 13,600,000 acre-feet, or about 10 percent less than the amount estimated by the Reclamation Bureau.

A record of gauge heights for the River at Yuma is continuous from April 1878, but no actual current meter gaugings were made at the station until 1902. In 1902 the Hydrographic Branch of the United States Geological Survey established a gauging station at Yuma which was maintained until the close of 1906, when the station was taken over for operation by the United States Reclamation Service in connection with the operation of the Yuma irrigation district.

In 1909 the Yuma gaugings were estimated by an engineer of the United States Geological Survey as probably too large, varying from nothing to 15 percent, and he suggested improved methods, which were, however, not adopted until 1918, and the best modern methods

were not installed until January 1926. The opinion was also expressed to the board by officials at Yuma in charge of the gauging work that the measurements made prior to 1926 were in error and resulted in too high an estimate.

An estimate of the excess of the calculated flow at Yuma above the actual flow of the river could be approximately determined only by paralleling the present more exact methods of measurement with the methods formerly used, through two or more seasons of high-water flow, and thus determine the error involved. Any estimate without such determination is uncertain. In the opinion of the board the results of the Yuma gaugings are at least 10 percent too high. These corrections would reduce the estimate made by the United States Reclamation Bureau of the average annual flow at Laguna Dam, for the period 1902-1922, to about 13,500,000 acre-feet.

In this connection the estimates of Mr. Herman Stabler should be noted. His estimates, made from the long record of gauge heights and the measured flows at Yuma, were based on the assumption that the measurements at Yuma were correct. If the Yuma flows were corrected and reduced, Mr. Stabler's estimate would also be reduced. Since the board finds that the Yuma gaugings for the period 1902-1922 are at least 10 percent too high, Mr. Stabler's estimate based on these gaugings should be correspondingly reduced. Thus modified, his estimate for the average flow of the period 1887-1904 of 10,420,000 acre-feet is reduced to 9,360,000 acre-feet.

One of the most important facts shown by these estimates is the existence of a long dry period in the Colorado River flow prior to 1906. This low period is clearly shown by an inspection of the Yuma gauge heights for that period. Further investigation of this matter has convinced this board that the flows of the Colorado River as determined by the gaugings from 1906 to 1927 are materially higher than the flow for the preceding 20 years, and that a long period of equally low flows must be expected to recur at any time.

STREAM FLOW RECORDS

The evidence on which the above conclusion is based is contained in the following records:

Green River

The average flow of the Green River, at Green River Station, Utah, for the period 1906-1917 was 125 percent of its average flow for the period 1895-1905, and about 143 percent of its average flow for the 6-year period 1900-1905.

Grand River

The average flow of the Grand River at Palisade for the period 1906-1922 was 122 percent of its average flow for the period 1897-

1905, and 135 percent of its average flow for the 6-year period 1900-1905.

Great Salt Lake

The average flow of the tributary rivers into Great Salt Lake, corrected for evaporation and depletion from irrigation, as given in the Weymouth Report, volume 4, for the period 1906-1922 was 134 percent of the flow for the period 1889-1905 and 146 percent of the 6-year period 1900-1905.

Rio Grande

The average flow of the Rio Grande at Del Norte, Colo, for the period 1906-1921 was 141 percent of the flow for the period 1890-1905 and 178 percent of the 6-year period 1899-1904.

The Colorado at Lees Ferry

The estimate of E. C. LaRue, United States Geological Survey, of the average flow of the Colorado River at Lees Ferry for the period 1906-1922 is 130 percent of the average flow for the period 1886-1905, and 142 percent of the average flow for the 6-year period 1900-1905.

The Colorado at Laguna

The estimate of Herman Stabler, United States Geological Survey, for the average flow of the Colorado River at Laguna Dam for the period 1905-1922 is 161 percent of the flow for the period 1887-1904.

Salt River

The average flow of Salt River below the Verde River for the period 1905-1920 was 180 percent of the average flow for the period 1889-1904, and 371 percent of the average flow for the 7-year period 1898-1904.

RAINFALL RECORDS

These foregoing several estimates showing deficient flow in the earlier period are in part confirmed by the following rainfall records.

The Great Salt Lake drainage area

The rainfall on the Salt Lake area at Corinne, at Ogden, and at Salt Lake City averaged for the years 1890-1905, 13.92 inches, and for the period 1906-1922, 16.78 inches, or 21 percent in excess of the earlier period.

The upper Colorado drainage area

On the upper Colorado River drainage area the average rainfall at Durango, at San Luis, and at Grand Junction for the period 1895-1905 was 11.83 inches, while for the period 1906-1918 it was 14.92 inches, or 20 percent above the earlier period.

CONCLUSIONS AS TO STREAM FLOW

The estimated future flow of the Colorado River must be based on the flows of the past with the justifiable assumption that they will recur. Unfortunately, there are no actual measurements of the flows of the river for a longer period than 26 years, and these were made at Yuma. The use of these measurements for estimating the flow at Boulder Dam involves the necessity of considering various intervening gains and losses of water, the amounts of which are based on insufficient data, and result in final estimates which are unsatisfactory.

It is also known that the period from 1905 to 1927 was one of relatively high flow in the Colorado and also in neighboring streams, and that this period was preceded by about 20 years of flow much below the average of the whole period of measurement. Records also show that periods of high and low flow occur in cycles of very uncertain magnitude and duration. A low period similar to that which occurred from 1886 to 1905 is sure to recur, and may be expected at any time. It follows that, in addition to the 10 percent reduction already referred to, the measured flow in the 26 years of record must be further materially reduced to care for climatic variation in order to arrive at a conservative estimate of the amount of irrigation and power that can be successfully maintained during a 50-year period by Boulder Dam.

The records of past performance of the Colorado River and of such other streams in this vicinity as seem pertinent furnish no basis for an exact estimate of long-past flows in the Colorado River. There is naturally considerable leeway in the interpretation of these data, and estimates based thereon may differ materially. The board however, realizes that in determining the economic feasibility of this project its estimates should be on the safe side and it has consequently adopted the following figures for the flows at Black Canyon, without further depletion:

	<i>Acre-feet</i>
Average low flow for a period of 15 to 20 years.....	10, 000, 000
Average high flow for a similar period.....	14, 500, 000
Average of high and low periods.....	12, 250, 000

It is estimated that the present flow is depleted by water taken for irrigation in the upper basin by approximately 2,750,000 acre-feet, which amount, if added to the above estimated average flow, would increase it to about 15,000,000 acre-feet. This is the amount apportioned by the seven States compact for division at Lees Ferry.

MINERAL SALTS IN THE RESERVOIR

The waters of the Colorado are normally high in dissolved mineral salts, chiefly carbonates, sulphates, and chlorides of calcium, mag-

nesium, sodium, and potassium. The amount is well within the limits of accepted practice for irrigation purposes.

For domestic use the salt content is high, several times as high as it is in the water supply of Chicago, Boston, or New York. It is not an ideal water for such purposes, but the fact that it is usable is demonstrated by its use in the cities of the Imperial Valley and in Yuma and in other communities along the lower Colorado.

The waters impounded in the Black Canyon Reservoir will overflow, to a limited extent, lands in the Virgin Valley that contain beds of soluble salts, chiefly sodium chloride, sodium sulphate, and calcium sulphate. These salt beds will be dissolved at their outcrops, where submerged, and this will add appreciably at first to the salt content of the lower Colorado River waters. Much trouble of this kind, however, is not anticipated because most of the outcrops of these deposits lie either above the flow line or within the flood portion of the reservoir and in the back-waters of the Virgin Valley. They will be flooded only a small portion of the time, and all of the source formations below the water line will gradually be sealed off. This effect will be produced both by the silt deposited by the inflowing waters and by the slumping of the overlying shale beds.

It is the opinion of the board, in view of these controlling conditions, that the actual salt content will not be increased to an injurious amount, even in the beginning, and that, in a comparatively short time, the incoming silt will be so effective in blanketing the salt deposits that the salt content of the river waters will be reduced to about the present amount.

SILTING OF THE RESERVOIR

The Colorado River carries a heavy load of silt. This has enabled it to build the great delta which now constitutes the fertile lands of the Imperial Valley of California and the adjacent districts of Yuma, Ariz., and of Mexico.

If a great dam is built, all of the silt normally carried past its site will be deposited in the reservoir created, thus progressively reducing its capacity.

The best determinations available indicate that silt deposition in the proposed reservoir would be at the rate of approximately 137,000 acre-feet per year.

Silt will be deposited at all depths in the reservoir from the very beginning, thus continuously modifying the volumes set aside as silt, irrigation and power, and flood-control reserves. Probably the bottom portion, below the 940-foot contour, intended primarily for silt reserve, will receive and retain the largest quantity, and the top portion set aside for flood control will retain the least; but all will be affected.

When due allowances are made for distribution in the various reserve portions of the reservoir, it appears that approximately three-fourths of the effective reserve capacity for irrigation and power will still be available at the end of the first 50-year period and that a slightly larger proportion of the flood-reserve capacity will still be available.

Ultimately if there is no additional upstream reservoir development resulting in reduction of the rate of silt delivery, all of the remaining unoccupied portions of the reservoir would also be filled with the accumulating silt. To reach such an end would probably take about 190 years.

RIVER SILT BELOW THE DAM

The river below the dam, virtually throughout its course, flows on silt. A comparatively large amount of silt, with associated sand and gravel, swept down by the river, is accumulated on the more open valley bottoms. Some of this, of course, is available for transportation on any favorable opportunity. When the dam is built and clear waters issue from the reservoir, a new load of silt will be picked up along its course through these deposits. In the beginning this load is certain to be about as heavy as it is normally at present, but, with the continuous regulation of river flow and the virtual elimination of high flood waters, a tendency to silt stabilization will follow as the river becomes more deeply entrenched and develops a paved bed. As soon as this stage is reached along the larger part of the course above the diversion dam at Laguna, silt conditions will have improved. This improvement is certain to increase with time.

It is quite impossible to estimate the rate of improvement or the time it will take the river to reach such a condition of stability as to eliminate the silt burden. The quantities of silt along the river, however, are limited. Assuming that these silt beds will be attacked vigorously enough so that the river will carry its normal load for a few beginning years, it appears probable that so large a proportion of the immediately available supply will have been removed and the bed of the river will be so effectively paved with the residual coarser material that thereafter an increasingly smaller load will be carried. Ultimately the silt content will be virtually eliminated. We believe that marked improvement will be shown within the first 10 years, especially in reduction of the amount of extremely fine suspended silt which at present causes most damage to irrigated lands. Thereafter improvement will be gradual though erratic, on account of occasional floods.

POWER

Based on the foregoing estimates of the variation of flow of the Colorado River, it is believed that under present conditions of irrigation a continuous output of 550,000 horsepower, or 1,000,000 horsepower on a 55 per cent load factor, could be maintained even during the years of normal low flow.

A fairly rapid irrigation development is, however, to be expected in the entire Colorado River Basin, provided the seven States compact is consummated, and, if the Boulder Canyon project is undertaken, preparations for such development may be expected in both the upper and lower basins during the construction of such project.

As the use of water for irrigation increases, the amount of water available for power will decrease, and a time will arrive when, during periods of low water, the full estimated amount of power can not be maintained. Within a 30 or 40 year period, even with a re-regulating reservoir, the power output may be reduced to five-tenths or six-tenths of the capacity of the proposed plant during a long dry period.

This whole matter is further complicated by the proposed seven States compact. It is quite probable that the compact attempts to apportion more water than the actual average undepleted flow of the river. The situation is still further complicated by the fact that the upper States are authorized to take more than an equitable proportion of the flow of the river, for any one or more of a series of dry years, provided they permit a total of 75,000,000 acre-feet to flow down the river in a period of 10 consecutive years.

In any event, the upper basin has, by virtue of its location, first call on the water of the river. The withdrawal of the allotted share of the annual flow during any series of years of low flow may make it impossible to carry out the terms of the compact during the latter part of a low 10-year period. If the low flow continued for a considerable term of years, the proposed storage at Boulder Dam would be inadequate to provide sufficient water for the lower valley through such a period. The power output would also be seriously affected and might be reduced below the estimated minimum previously stated.

A 1,000,000-horsepower hydroelectric plant fully loaded and operating continuously on a 55 per cent load factor would generate annually 3,600,000,000 kilowatt-hours of current. In actual practice this theoretical output might be reduced by approximately 10 per cent.

With the uncertainties of the flow at Boulder Dam it is impossible to estimate closely the average annual output of power which would obtain during a 50-year period.

ECONOMIC FEASIBILITY

The time available for the investigation in preparation of this report has not been sufficient to permit the board to go into all phases of this subject in the detail necessary to fix its findings with the degree of exactness which might otherwise be practicable.

The board believes, however, that it has been able to review the available data with sufficient thoroughness to warrant the conclusions expressed in this report.

In considering the economics of this project the board recognizes the importance, among others, of the following factors:

1. While much land has already been brought under irrigation on the Colorado River delta in Mexico, it is evident that such development has been retarded by the lack of water available from the river during low-water periods. The storage of flood water in the Black Canyon Reservoir and its release during low-water seasons will make more water available in Mexico and will invite immediate expansion in irrigated acreage in that country. With the limited water supply available from the Colorado River, every acre permanently irrigated in Mexico will mean that an acre in the United States cannot be irrigated. Such a limitation on lands would result in a corresponding limitation on possible income. It is the opinion of the board that it is of much economic importance in this project that an agreement limiting the amount of water assignable to Mexico should be made prior to the completion of the Boulder Canyon project.

2. The board believes that the growing demand for power in southern California, when considered on a conservative basis, will be sufficient to absorb the probable power output of the proposed hydroelectric plant.

3. As a sound basis for estimating the probable power output of a stream, it is necessary to know the flow of the stream for a long term of years covering periods of low and high flow of sufficient duration to furnish the low, average, and high flows for which the plant must be designed. Any less complete data throw doubt on the estimates, which becomes serious in proportion to the uncertainties in the data and the magnitude of the investment.

When this project was first proposed the cost of steam power in southern California was such as to leave a reasonable margin of profit above the probable cost of hydroelectric power generated at the proposed power plant. With the reduction in costs of power generated by steam, this margin has been greatly reduced.

The operation, maintenance, interest, and sinking fund for the Boulder Canyon project must be paid from the sale of power and of storage services, which latter has been estimated at \$1,500,000 per annum by the Secretary of the Interior.

Based on the foregoing and the shortage of power which will occur at low flow, the board is of the opinion that if the Boulder Canyon project is completed and put in operation, carrying as it does the costs of flood-protection works and the all-American canal, it will be impossible to meet operation, maintenance, interest, and a sufficient sinking fund to retire the cost of the project within a 50-year period.

4. It is obvious that the power which can be generated from Boulder Dam is a valuable resource. If the income from storage can be reasonably increased and the capital investment reduced by the cost of the all-American canal, together with a reduction for all or a part of the cost properly chargeable to flood protection, it would be possible to amortize the remaining cost with the income from power.

COLORADO RIVER BOARD.

Maj. Gen. WILLIAM L. SIBERT, *Chairman.*

CHARLES P. BERKEY.

DANIEL W. MEAD.

WARREN J. MEAD.

ROBERT RIDGWAY.

DENVER, COLO., *November 24, 1928.*

Appendix 303

**SUPPLEMENTARY REPORT OF THE COLORADO
RIVER BOARD ("SIBERT BOARD")**

(See Appendix 302 for the first report)

UNITED STATES DEPARTMENT OF THE INTERIOR,
COLORADO RIVER BOARD,
April 16, 1930

HON. RAY LYMAN WILBUR,
Secretary of the Interior,
Washington, D. C.

SIR: As requested in your letter of March 15, 1930, the Colorado River Board met in Denver, Colorado, on April 10.

The purpose of the meeting, as stated in your instructions, was "to consider the design of Boulder dam, the advisability of increasing its height, and other questions which have presented themselves in connection with the studies that have been undertaken."

The Board understands that all matters for consideration at this time are enumerated in the letter of Mr. R. F. Walter, Chief Engineer, dated April 10, 1930, as follows:

- (a) The raising of height of the dam 25 feet, or from elevation 1,207 to 1,232.
- (b) The general procedure being followed in the mathematical treatment in analyzing the stresses in the dam, as presented in report entitled "Present status of Boulder Canyon designs," dated February 5, 1930.
- (c) Approval of the tentative section of the dam as shown on page 17 of that report, suitably amended for a top elevation of 1,232.

(a) The Board was originally required to report on the feasibility of a dam 550 feet high above low water at the site, such dam to impound a maximum of 26,000,000 acre-feet with a freeboard of ten feet. Of this impounded water there was set aside only 5,000,000 acre-feet as flood control storage.

It is obvious that a reservoir cannot be used to develop a stated amount of power and at the same time adequately regulate floods, unless, after setting aside the storage required for the power, there remains sufficient storage for flood control.

The power to be developed was fixed at 550,000 firm horsepower. The Board found that this power could be developed at the present time with the power storage provided, and that ordinary floods could be satisfactorily controlled. However, in the event of a great flood

such as that of 1884, it would be necessary to send as much as 160,000 second-feet of water down the valley in order to prevent the dam from being overtopped.

Although a flood of this magnitude has occurred only once in the last fifty years, the possibility of its recurrence is nevertheless a constant menace and the Board is informed that the people of the lower valley demand that provision be made to more effectively control such unusual floods.

Without encroaching upon the power development provided for, this increased flood control can be accomplished only by increasing the height of the dam. The Bureau of Reclamation has proposed that the crest of the dam be raised 25 feet, from elevation 1,207 feet to, elevation 1,232 feet, for the purpose of providing an additional flood-control storage of 4,500,000 acre-feet with a freeboard of three feet, thus making the total flood-control storage 9,500,000 acre-feet.

The Board approves the proposed increase in the height of the dam, and is of the opinion that this change can be made within the adopted estimate of cost.

The Board emphasizes the fact that its approval of the increase in height of the proposed dam is based solely on the desirability of more effective flood control and that the development of power should never be a factor in the control of the flood-storage space in the reservoir.

(b) The general procedure being followed in the mathematical treatment in analyzing the stresses in the dam, as presented in the report entitled "Present Status of Boulder Canyon Designs," dated February 5, 1930, seems to be logical and essential to cover the conditions which will actually obtain in a dam constructed in the narrow Black Canyon gorge selected as the site of the structure. The Board recommends that this procedure be continued with such changes and additions as the completion of the mathematical investigation now under way may require.

(c) As a basis for complete study and detailed design of a dam of the type and general dimensions considered, the Board approves the tentative section of the dam shown on page 17 of the report entitled, "Present Status of Boulder Canyon Designs" by Chief Designing Engineer J. L. Savage, dated February 5, 1930, suitably amended for the increased height to a top elevation of 1,232 feet.

The proposal of the engineers of the Bureau of Reclamation to construct and test a model dam of similar design, for the purpose of establishing a check on the reliability of the methods of stress analysis which have been employed in designing the structure is approved and it is urged that this be done at an early date.

Very respectfully,

COLORADO RIVER BOARD,
Wm. L. Sibert,
Maj. Gen. WILLIAM L. SIBERT,
Chairman.

Charles P. Berkey,
CHARLES P. BERKEY,
Daniel W. Mead,
DANIEL W. MEAD,
W. J. Mead,
WARREN J. MEAD,
Robt. Ridgway,
ROBERT RIDGWAY,

DENVER, COLORADO, *April 16, 1930.*

Part IV

THE BOULDER CANYON PROJECT ACT

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Appendix 401

BOULDER CANYON PROJECT ACT

(Act of December 21, 1928 (45 Stat. 1057), as amended by act of March 6, 1946 (60 Stat. 36); see also the Boulder Canyon Project Adjustment Act (54 Stat. 774) (appendix 801 herein), which superseded certain provisions of the Project Act without specifically amending them)

[PUBLIC—No. 642—70TH CONGRESS]

[H. R. 5773]

AN ACT To provide for the construction of works for the protection and development of the Colorado River Basin, for the approval of the Colorado River compact, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking, the Secretary of the Interior, subject to the terms of the Colorado River compact hereinafter mentioned, is hereby authorized to construct, operate, and maintain a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water and a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam, or other suitable diversion dam, which the Secretary of the Interior is hereby authorized to construct if deemed necessary or advisable by him upon engineering or economic considerations, with the Imperial and Coachella Valleys in California, the expenditures for said main canal and appurtenant structures to be reimbursable, as provided in the reclamation law, and shall not be paid out of revenues derived from the sale or disposal of water power or electric energy at the dam authorized to be constructed at said Black Canyon or Boulder Canyon, or for water for potable pur-

poses outside of the Imperial and Coachella Valleys: *Provided, however,* That no charge shall be made for water or for the use, storage, or delivery of water for irrigation or water for potable purposes in the Imperial or Coachella Valleys; also to construct and equip, operate, and maintain at or near said dam, or cause to be constructed, a complete plant and incidental structures suitable for the fullest economic development of electrical energy from the water discharged from said reservoir; and to acquire by proceedings in eminent domain, or otherwise, all lands, rights-of-way, and other property necessary for said purposes.

SEC. 2. (a) There is hereby established a special fund, to be known as the "Colorado River Dam fund" (hereinafter referred to as the "fund"), and to be available, as hereafter provided, only for carrying out the provisions of this Act. All revenues received in carrying out the provisions of this Act shall be paid into and expenditures shall be made out of the fund, under the direction of the Secretary of the Interior.

(b) The Secretary of the Treasury is authorized to advance to the fund, from time to time and within the appropriations therefor, such amounts as the Secretary of the Interior deems necessary for carrying out the provisions of this Act, except that the aggregate amount of such advances shall not exceed the sum of \$165,000,000. Of this amount the sum of \$25,000,000 shall be allocated to flood control and shall be repaid to the United States out of 62½ per centum of revenues, if any, in excess of the amount necessary to meet periodical payments during the period of amortization, as provided in section 4 of this Act. If said sum of \$25,000,000 is not repaid in full during the period of amortization, then 62½ per centum of all net revenues shall be applied to payment of the remainder. Interest at the rate of 4 per centum per annum accruing during the year upon the amounts so advanced and remaining unpaid shall be paid annually out of the fund, except as herein otherwise provided.

(c) Moneys in the fund advanced under subdivision (b) shall be available only for expenditures for construction and the payment of interest, during construction, upon the amounts so advanced. No expenditures out of the fund shall be made for operation and maintenance except from appropriations therefor.

(d) The Secretary of the Treasury shall charge the fund as of June 30 in each year with such amount as may be necessary for the payment of interest on advances made under subdivision (b) at the rate of 4 per centum per annum accrued during the year upon the amounts so advanced and remaining unpaid, except that if the fund is insufficient to meet the payment of interest the Secretary of the Treasury may, in his discretion, defer any part of such payment,

and the amount so deferred shall bear interest at the rate of 4 per centum per annum until paid.

(e) The Secretary of the Interior shall certify to the Secretary of the Treasury, at the close of each fiscal year, the amount of money in the fund in excess of the amount necessary for construction, operation, and maintenance, and payment of interest. Upon receipt of each such certificate the Secretary of the Treasury is authorized and directed to charge the fund with the amount so certified as repayment of the advances made under subdivision (b), which amount shall be covered into the Treasury to the credit of miscellaneous receipts.

SEC. 3. There is hereby authorized to be appropriated from time to time, out of any money in the Treasury not otherwise appropriated, such sums of money as may be necessary to carry out the purposes of this Act, not exceeding in the aggregate \$165,000,000.

SEC. 4. (a) This Act shall not take effect and no authority shall be exercised hereunder and no work shall be begun and no moneys expended on or in connection with the works or structures provided for in this Act, and no water rights shall be claimed or initiated hereunder, and no steps shall be taken by the United States or by others to initiate or perfect any claims to the use of water pertinent to such works or structures unless and until (1) the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming shall have ratified the Colorado River compact, mentioned in section 13 hereof, and the President by public proclamation shall have so declared, or (2) if said States fail to ratify the said compact within six months from the date of the passage of this Act then, until six of said States, including the State of California, shall ratify said compact and shall consent to waive the provisions of the first paragraph of Article XI of said compact, which makes the same binding and obligatory only when approved by each of the seven States signatory thereto, and shall have approved said compact without conditions, save that of such six-State approval, and the President by public proclamation shall have so declared, and, further, until the State of California, by act of its legislature, shall agree irrevocably and unconditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as an express covenant and in consideration of the passage of this Act, that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the State of California, including all uses under contracts made under the provisions of this Act and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin States by paragraph (a) of Article III

of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact.

The States of Arizona, California, and Nevada are authorized to enter into an agreement which shall provide (1) that of the 7,500,000 acre-feet annually apportioned to the lower basin by paragraph (a) of Article III of the Colorado River compact, there shall be apportioned to the State of Nevada 300,000 acre-feet and to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity, and (2) that the State of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River compact, and (3) that the State of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of said State, and (4) that the waters of the Gila River and its tributaries, except return flow after the same enters the Colorado River, shall never be subject to any diminution whatever by any allowance of water which may be made by treaty or otherwise to the United States of Mexico but if, as provided in paragraph (c) of Article III of the Colorado River compact, it shall become necessary to supply water to the United States of Mexico from waters over and above the quantities which are surplus as defined by said compact, then the State of California shall and will mutually agree with the State of Arizona to supply, out of the main stream of the Colorado River, one-half of any deficiency which must be supplied to Mexico by the lower basin, and (5) that the State of California shall and will further mutually agree with the States of Arizona and Nevada that none of said three States shall withhold water and none shall require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses, and (6) that all of the provisions of said tri-State agreement shall be subject in all particulars to the provisions of the Colorado River compact, and (7) said agreement to take effect upon the ratification of the Colorado River compact by Arizona, California, and Nevada.

(b) Before any money is appropriated for the construction of said dam or power plant, or any construction work done or contracted for, the Secretary of the Interior shall make provision for revenues by contract, in accordance with the provisions of this Act, adequate in his judgment to insure payment of all expenses of operation and maintenance of said works incurred by the United States and the repayment, within fifty years from the date of the completion of said works, of all amounts advanced to the fund under subdivision (b) of section 2 for such works, together with interest thereon made reimbursable under this Act.

Before any money is appropriated for the construction of said main canal and appurtenant structures to connect the Laguna Dam with the Imperial and Coachella Valleys in California, or any construction work is done upon said canal or contracted for, the Secretary of the Interior shall make provision for revenues, by contract or otherwise, adequate in his judgment to insure payment of all expenses of construction, operation, and maintenance of said main canal and appurtenant structures in the manner provided in the reclamation law.

If during the period of amortization the Secretary of the Interior shall receive revenues in excess of the amount necessary to meet the periodical payments to the United States as provided in the contract, or contracts, executed under this Act, then, immediately after the settlement of such periodical payments, he shall pay to the State of Arizona 18¼ per centum of such excess revenues and to the State of Nevada 18¼ per centum of such excess revenues.

Sec. 5. That the Secretary of the Interior is hereby authorized, under such general regulations as he may prescribe, to contract for the storage of water in said reservoir and for the delivery thereof at such points on the river and on said canal as may be agreed upon, for irrigation and domestic uses, and generation of electrical energy and delivery at the switchboard to States, municipal corporations, political subdivisions, and private corporations of electrical energy generated at said dam, upon charges that will provide revenue which, in addition to other revenue accruing under the reclamation law and under this Act, will in his judgment cover all expenses of operation and maintenance incurred by the United States on account of works constructed under this Act and the payments to the United States under subdivision (b) of section 4. Contracts respecting water for irrigation and domestic uses shall be for permanent service and shall conform to paragraph (a) of section 4 of this Act. No person shall have or be entitled to have the use for any purpose of the water stored as aforesaid except by contract made as herein stated.

After the repayments to the United States of all money advanced with interest, charges shall be on such basis and the revenues derived therefrom shall be kept in a separate fund to be expended within the Colorado River Basin as may hereafter be prescribed by the Congress.

General and uniform regulations shall be prescribed by the said Secretary for the awarding of contracts for the sale and delivery of electrical energy, and for renewals under subdivision (b) of this section, and in making such contracts the following shall govern:

(a) No contract for electrical energy or for generation of electrical energy shall be of longer duration than fifty years from the date at which such energy is ready for delivery.

Contracts made pursuant to subdivision (a) of this section shall be made with a view to obtaining reasonable returns and shall contain provisions whereby at the end of fifteen years from the date of their execution and every ten years thereafter, there shall be readjustment of the contract, upon the demand of either party thereto, either upward or downward as to price, as the Secretary of the Interior may find to be justified by competitive conditions at distributing points or competitive centers, and with provisions under which disputes or disagreements as to interpretation or performance of such contract shall be determined either by arbitration or court proceedings, the Secretary of the Interior being authorized to act for the United States in such readjustments or proceedings.

(b) The holder of any contract for electrical energy not in default thereunder shall be entitled to a renewal thereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of such holder dependent for its usefulness on a continuation of the contract be purchased or acquired and such holder be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

(c) Contracts for the use of water and necessary privileges for the generation and distribution of hydroelectric energy or for the sale and delivery of electrical energy shall be made with responsible applicants therefor who will pay the price fixed by the said Secretary with a view to meeting the revenue requirements herein provided for. In case of conflicting applications, if any, such conflicts shall be resolved by the said Secretary, after hearing, with due regard to the public interest, and in conformity with the policy expressed in the Federal Water Power Act as to conflicting applications for permits and licenses, except that preference to applicants for the use of water and appurtenant works and privileges necessary for the generation and distribution of hydroelectric energy, or for delivery at the switchboard of a hydroelectric plant, shall be given, first, to a State for the generation or purchase of electric energy for use in the State, and the States of Arizona, California, and Nevada shall be given equal opportunity as such applicants.

The rights covered by such preference shall be contracted for by such State within six months after notice by the Secretary of the Interior and to be paid for on the same terms and conditions as may be provided in other similar contracts made by said Secretary: *Provided, however,* That no application of a State or a political subdivision for an allocation of water for power purposes or of electrical energy shall be denied or another application in conflict therewith be granted on the ground that the bond issue of such State or political subdivision, necessary to enable the applicant to utilize such water

and appurtenant works and privileges necessary for the generation and distribution of hydroelectric energy or the electrical energy applied for, has not been authorized or marketed, until after a reasonable time, to be determined by the said Secretary, has been given to such applicant to have such bond issue authorized and marketed.

(d) Any agency receiving a contract for electrical energy equivalent to one hundred thousand firm horsepower, or more, may, when deemed feasible by the said Secretary, from engineering and economic considerations and under general regulations prescribed by him, be required to permit any other agency having contracts hereunder for less than the equivalent of twenty-five thousand firm horsepower, upon application to the Secretary of the Interior made within sixty days from the execution of the contract of the agency the use of whose transmission line is applied for, to participate in the benefits and use of any main transmission line constructed or to be constructed by the former for carrying such energy (not exceeding, however, one-fourth the capacity of such line), upon payment by such other agencies of a reasonable share of the cost of construction, operation, and maintenance thereof.

The use is hereby authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation, and maintenance of main transmission lines to transmit said electrical energy.

SEC. 6. That the dam and reservoir provided for by section 1 hereof shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact; and third, for power. The title to said dam, reservoir, plant, and incidental works shall forever remain in the United States, and the United States shall, until otherwise provided by Congress, control, manage, and operate the same, except as herein otherwise provided: *Provided, however,* That the Secretary of the Interior may, in his discretion, enter into contracts of lease of a unit or units of any Government-built plant, with right to generate electrical energy, or, alternatively, to enter into contracts of lease for the use of water for the generation of electrical energy as herein provided, in either of which events the provisions of section 5 of this Act relating to revenue, term, renewals, determination of conflicting applications, and joint use of transmission lines under contracts for the sale of electrical energy, shall apply.

The Secretary of the Interior shall prescribe and enforce rules and regulations conforming with the requirements of the Federal Water Power Act, so far as applicable, respecting maintenance of works in condition of repair adequate for their efficient operation, maintenance of a system of accounting, control of rates and service in the absence

of State regulation or interstate agreement, valuation for rate-making purposes, transfers of contracts, contracts extending beyond the lease period, expropriation of excessive profits, recapture and/or emergency use by the United States of property of lessees, and penalties for enforcing regulations made under this Act of penalizing failure to comply with such regulations or with the provisions of this Act. He shall also conform with other provisions of the Federal Water Power Act and of the rules and regulations of the Federal Power Commission, which have been devised or which may be hereafter devised, for the protection of the investor and consumer.

The Federal Power Commission is hereby directed not to issue or approve any permits or licenses under said Federal Water Power Act upon or affecting the Colorado River or any of its tributaries, except the Gila River, in the States of Colorado, Wyoming, Utah, New Mexico, Nevada, Arizona, and California until this Act shall become effective as provided in section 4 herein.

SEC. 7. That the Secretary of the Interior may, in his discretion, when repayments to the United States of all money advanced, with interest, reimbursable hereunder, shall have been made, transfer the title to said canal and appurtenant structures, except the Laguna Dam and the main canal and appurtenant structures down to and including Syphon Drop, to the districts or other agencies of the United States having a beneficial interest therein in proportion to their respective capital investments under such form of organization as may be acceptable to him. The said districts or other agencies shall have the privilege at any time of utilizing by contract or otherwise such power possibilities as may exist upon said canal, in proportion to their respective contributions or obligations toward the capital cost of said canal and appurtenant structures from and including the diversion works to the point where each respective power plant may be located. The net proceeds from any power development on said canal shall be paid into the fund and credited to said districts or other agencies on their said contracts, in proportion to their rights to develop power, until the districts or other agencies using said canal shall have paid thereby and under any contract or otherwise an amount of money equivalent to the operation and maintenance expense and cost of construction thereof.

SEC. 8. (a) The United States, its permittees, licensees, and contractees, and all users and appropriators of water stored, diverted, carried, and/or distributed by the reservoir, canals, and other works herein authorized, shall observe and be subject to and controlled by said Colorado River compact in the construction, management, and operation of said reservoir, canals, and other works and the storage, diversion, delivery, and use of water for the generation of power, irrigation, and other purposes, anything in this Act to the contrary

notwithstanding, and all permits, licenses, and contracts shall so provide.

(b) Also the United States, in constructing, managing, and operating the dam, reservoir, canals, and other works herein authorized, including the appropriation, delivery, and use of water for the generation of power, irrigation, or other uses, and all users of water thus delivered and all users and appropriators of waters stored by said reservoir and/or carried by said canal, including all permittees and licensees of the United States or any of its agencies, shall observe and be subject to and controlled, anything to the contrary herein notwithstanding, by the terms of such compact, if any, between the States of Arizona, California, and Nevada, or any two thereof, for the equitable division of the benefits, including power, arising from the use of water accruing to said States, subsidiary to and consistent with said Colorado River compact, which may be negotiated and approved by said States and to which Congress shall give its consent and approval on or before January 1, 1929; and the terms of any such compact concluded between said States and approved and consented to by Congress after said date: *Provided*, That in the latter case such compact shall be subject to all contracts, if any, made by the Secretary of the Interior under section 5 hereof prior to the date of such approval and consent by Congress.

SEC. 9. All lands of the United States found by the Secretary of the Interior to be practicable of irrigation and reclamation by the irrigation works authorized herein shall be withdrawn from public entry. Thereafter, at the direction of the Secretary of the Interior, such lands shall be opened for entry, in tracts varying in size but not exceeding one hundred and sixty acres, as may be determined by the Secretary of the Interior, in accordance with the provisions of the reclamation law, and any such entryman shall pay an equitable share in accordance with the benefits received, as determined by the said Secretary, of the construction cost of said canal and appurtenant structures; said payments to be made in such installments and at such times as may be specified by the Secretary of the Interior, in accordance with the provisions of the said reclamation law, and shall constitute revenue from said project and be covered into the fund herein provided for: *Provided*, That all persons who served in the United States Army, Navy, Marine Corps, or Coast Guard during World War II, the War with Germany, the War with Spain, or in the suppression of the insurrection in the Philippines, and who have been honorably separated or discharged therefrom or placed in the Regular Army or Naval Reserve, shall have the exclusive preference right for a period of three months to enter said lands, subject, however, to the provisions of subsection (c) of section 4 of the Act of December 5, 1924 (43 Stat. 672, 702; 43 U. S. C., sec. 433); and also, so far as practi-

cable, preference shall be given to said persons in all construction work authorized by this chapter: *Provided further*, That the above exclusive preference rights shall apply to veteran settlers on lands watered from the Gila canal in Arizona the same as to veteran settlers on lands watered from the All-American canal in California: *Provided further*, That in the event such an entry shall be relinquished at any time prior to actual residence upon the land by the entryman for not less than one year, lands so relinquished shall not be subject to entry for a period of sixty days after the filing and notation of the relinquishment in the local land office, and after the expiration of said sixty-day period such lands shall be open to entry, subject to the preference in this section provided.¹

SEC. 10. That nothing in this Act shall be construed as modifying in any manner the existing contract, dated October 23, 1918, between the United States and the Imperial Irrigation District, providing for a connection with Laguna Dam; but the Secretary of the Interior is authorized to enter into contract or contracts with the said district or other districts, persons, or agencies for the construction, in accordance with this Act, of said canal and appurtenant structures, and also for the operation and maintenance thereof, with the consent of the other users.

SEC. 11. That the Secretary of the Interior is hereby authorized to make such studies, surveys, investigations, and do such engineering as may be necessary to determine the lands in the State of Arizona that should be embraced within the boundaries of a reclamation project, heretofore commonly known and hereafter to be known as the Parker-Gila Valley reclamation project, and to recommend the most practicable and feasible method of irrigating lands within said project, or units thereof, and the cost of the same; and the appropriation of such sums of money as may be necessary for the aforesaid purposes from time to time is hereby authorized. The Secretary shall report to Congress as soon as practicable, and not later than December 10, 1931, his findings, conclusions, and recommendations regarding such project.

SEC. 12. "Political subdivision" or "political subdivisions" as used in this Act shall be understood to include any State, irrigation or other district, municipality, or other governmental organization.

"Reclamation law" as used in this Act shall be understood to mean that certain Act of the Congress of the United States approved June 17, 1902, entitled "An Act appropriating the receipts from the sale and disposal of public land in certain States and Territories to the construction of irrigation works for the reclamation of arid lands," and the Acts amendatory thereof and supplemental thereto.

¹ As amended by act of March 6, 1946 (60 Stat. 36).

“Maintenance” as used herein shall be deemed to include in each instance provision for keeping the works in good operating condition.

“The Federal Water Power Act,” as used in this Act, shall be understood to mean that certain Act of Congress of the United States approved June 10, 1920, entitled “An Act to create a Federal Power Commission; to provide for the improvement of navigation; the development of water power; the use of the public lands in relation thereto; and to repeal section 18 of the River and Harbor Appropriation Act, approved August 8, 1917, and for other purposes,” and the Acts amendatory thereof and supplemental thereto.

“Domestic” whenever employed in this Act shall include water uses defined as “domestic” in said Colorado River compact.

SEC. 13. (a) The Colorado River compact signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled “An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes,” is hereby approved by the Congress of the United States, and the provisions of the first paragraph of article 11 of the said Colorado River compact, making said compact binding and obligatory when it shall have been approved by the legislature of each of the signatory States, are hereby waived, and this approval shall become effective when the State of California and at least five of the other States mentioned, shall have approved or may hereafter approve said compact as aforesaid and shall consent to such waiver, as herein provided.

(b) The rights of the United States in or to waters of the Colorado River and its tributaries howsoever claimed or acquired, as well as the rights of those claiming under the United States, shall be subject to and controlled by said Colorado River compact.

(c) Also all patents, grants, contracts, concessions, leases, permits, licenses, rights-of-way, or other privileges from the United States or under its authority, necessary or convenient for the use of waters of the Colorado River or its tributaries, or for the generation or transmission of electrical energy generated by means of the waters of said river or its tributaries, whether under this Act, the Federal Water Power Act, or otherwise, shall be upon the express condition and with the express covenant that the rights of the recipients or holders thereof to waters of the river or its tributaries, for the use of which the same are necessary, convenient, or incidental, and the use of the same shall likewise be subject to and controlled by said Colorado River compact.

(d) The conditions and covenants referred to herein shall be deemed to run with the land and the right, interest, or privilege therein and water right, and shall attach as a matter of law, whether set out or referred to in the instrument evidencing any such patent, grant, contract, concession, lease, permit, license, right-of-way, or other privilege from the United States or under its authority, or not, and shall be deemed to be for the benefit of and be available to the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and the users of water therein or thereunder, by way of suit, defense, or otherwise, in any litigation respecting the waters of the Colorado River or its tributaries.

SEC. 14. This Act shall be deemed a supplement to the reclamation law, which said reclamation law shall govern the construction, operation, and management of the works herein authorized, except as otherwise herein provided.

SEC. 15. The Secretary of the Interior is authorized and directed to make investigation and public reports of the feasibility of projects for irrigation, generation of electric power, and other purposes in the States of Arizona, Nevada, Colorado, New Mexico, Utah, and Wyoming for the purpose of making such information available to said States and to the Congress, and of formulating a comprehensive scheme of control and the improvement and utilization of the water of the Colorado River and its tributaries. The sum of \$250,000 is hereby authorized to be appropriated from said Colorado River Dam fund, created by section 2 of this Act, for such purposes.

SEC. 16. In furtherance of any comprehensive plan formulated hereafter for the control, improvement, and utilization of the resources of the Colorado River system and to the end that the project authorized by this Act may constitute and be administered as a unit in such control, improvement, and utilization, any commission or commissioner duly authorized under the laws of any ratifying State in that behalf shall have the right to act in an advisory capacity to and in cooperation with the Secretary of the Interior in the exercise of any authority under the provisions of sections 4, 5, and 14 of this Act, and shall have at all times access to records of all Federal agencies empowered to act under said sections, and shall be entitled to have copies of said records on request.

SEC. 17. Claims of the United States arising out of any contract authorized by this Act shall have priority over all others, secured or unsecured.

SEC. 18. Nothing herein shall be construed as interfering with such rights as the States now have either to the waters within their borders or to adopt such policies and enact such laws as they may deem

necessary with respect to the appropriation, control, and use of waters within their borders, except as modified by the Colorado River compact or other interstate agreement.

SEC. 19. That the consent of Congress is hereby given to the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming to negotiate and enter into compacts or agreements, supplemental to and in conformity with the Colorado River compact and consistent with this Act for a comprehensive plan for the development of the Colorado River and providing for the storage, diversion, and use of the waters of said river. Any such compact or agreement may provide for the construction of dams, headworks, and other diversion works or structures for flood control, reclamation, improvement of navigation, division of water, or other purposes and/or the construction of power houses or other structures for the purpose of the development of water power and the financing of the same; and for such purposes may authorize the creation of interstate commissions and/or the creation of corporations, authorities, or other instrumentalities.

(a) Such consent is given upon condition that a representative of the United States, to be appointed by the President, shall participate in the negotiations and shall make report to Congress of the proceedings and of any compact or agreement entered into.

(b) No such compact or agreement shall be binding or obligatory upon any of such States unless and until it has been approved by the legislature of each of such States and by the Congress of the United States.

SEC. 20. Nothing in this Act shall be construed as a denial or recognition of any rights, if any, in Mexico to the use of the waters of the Colorado River system.

SEC. 21. That the short title of this Act shall be "Boulder Canyon Project Act."

Approved, December 21, 1928.¹

¹ Although not an amendment to the Project Act, the following statute relating to the lease of reserved lands in Boulder City, Nevada, and the disposition of revenues therefrom is pertinent:

"The Secretary of the Interior is hereby authorized and empowered, under such rules and regulations as he may prescribe, to establish rental rates for the lease of reserved lands of the United States situate within the exterior boundaries of Boulder City, Nevada, and, without prior advertising, to enter into leases therefor at not less than rates so established and for periods not exceeding fifty-three years from the date of such leases: *Provided*, That all revenues which may accrue to the United States under the provisions of such leases shall be deposited in the Treasury and credited to the Colorado River Dam fund established by section 617a of this title (June 18, 1940, ch. 395, sec. 1, 54 Stat. 437)."

Part V

DOCUMENTS RELATING TO COMPLIANCE WITH THE CONDITIONS PRECEDENT TO THE EF- FECTIVENESS OF THE BOULDER CANYON PROJECT ACT

RATIFICATION OF THE COLORADO RIVER COMPACT BY SIX STATES		
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Appendix 501

**CONDITIONS PRECEDENT TO THE PROJECT ACT:
STATE RATIFICATIONS OF THE COLORADO RIVER
COMPACT AS A SIX-STATE AGREEMENT**

(Citations only)

Appendix No. 228. California: Act approved March 4, 1929
(Stats. 1929, p. 37).

Appendix No. 222. Colorado: Act approved February 26, 1925
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Appendix No. 229. Utah: Act approved March 6, 1929 (Laws,
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Appendix No. 226. Wyoming: Act approved February 25, 1925
(Laws, 1925, p. 85).

Appendix 502

**CONDITIONS PRECEDENT TO THE PROJECT ACT:
THE CALIFORNIA "LIMITATION ACT"**

(Act of March 4, 1929; Ch. 16, 48th Sess.; Statutes and Amendments to the Codes, 1929, pp. 38-39)

CHAPTER 16

An act to limit the use by California of the waters of the Colorado river in compliance with the act of congress known as the "Boulder canyon project act," approved December 21, 1928, in the event the Colorado river compact is not approved by all of the states signatory thereto

(Approved by the Governor March 4, 1929; in effect August 14, 1929)

The people of the State of California do enact as follows:

SECTION 1. In the event the Colorado river compact signed at Santa Fe, New Mexico, November 24, 1922, and approved by and set out at length in that certain act entitled "An act to ratify and approve the Colorado river compact, signed at Santa Fe, New Mexico, November 24, 1922, to repeal conflicting acts and resolutions and directing that notice be given by the governor of such ratifications and approval," approved January 10, 1929 (statutes 1929, chapter 1), is not approved within six months from the date of the passage of that certain act of the congress of the United States known as the "Boulder canyon project act," approved December 21, 1928, by the legislatures of each of the seven states signatory thereto, as provided by article eleven of the said Colorado river compact, then when six of said states, including California, shall have ratified and approved said compact, and shall have consented to waive the provisions of the first paragraph of article eleven of said compact which makes the same binding and obligatory when approved by each of the states signatory thereto, and shall have approved said compact without conditions save that of such six states approval and the President by public proclamation shall have so declared, as provided by the said "Boulder canyon project act," the State of California as of the date of such proclamation agrees irrevocably and unconditionally with the United States and for the benefit of the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming as an express covenant

and in consideration of the passage of the said "Boulder canyon project act" that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado river for use in the State of California including all uses under contracts made under the provisions of said "Boulder canyon project act," and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin states by paragraph "a" of article three of the said Colorado river compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact.

SEC. 2. By this act the State of California intends to comply with the conditions respecting limitation on the use of water as specified in subdivision 2 of section 4 (a) of the said "Boulder canyon project act" and this act shall be so construed.

Appendix 503

CONDITIONS PRECEDENT TO THE PROJECT ACT:

**PROCLAMATION OF PRESIDENT HERBERT
HOOVER DECLARING BOULDER CANYON PROJ-
ECT ACT EFFECTIVE, JUNE 25, 1929**

(No. 1882, 46 Stat. 3000)

June 25, 1929.

BY THE PRESIDENT OF THE UNITED STATES OF
AMERICA

PUBLIC PROCLAMATION

Boulder Can-
yon Project.
Vol. 45, p. 1057.
Preamble.

Pursuant to the provisions of Section 4(a) of the Boulder Canyon Project Act approved December 21, 1928 (45 Stat. 1057), it is hereby declared by Public Proclamation:

Ratification of,
not made by
seven States.

Vol. 45, p. 1064.

(a) That the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming have not ratified the Colorado River Compact mentioned in Section 13(a) of said act of December 21, 1928, within six months from the date of the passage and approval of said act.

Ratified by six
designated States.

Vol. 45, p. 1064.

(b) That the States of California, Colorado, Nevada, New Mexico, Utah and Wyoming have ratified said compact and have consented to waive the provisions of the first paragraph of Article XI of said compact, which makes the same binding and obligatory only when approved by each of the seven States signatory thereto, and that each of the States last named has approved said compact without condition, except that of six-State approval as prescribed in Section 13(a) of said act of December 21, 1928.

Requirements
met by Califor-
nia.

Vol. 45, p. 1058.

(c) That the State of California has in all things met the requirements set out in the first paragraph of Section 4(a) of said act of December 21, 1928, necessary to render said act effective on six-State approval of said compact.

Act declared ef-
fective from date
hereof.

(d) All prescribed conditions having been fulfilled, the said Boulder Canyon Project Act approved December 21, 1928, is hereby declared to be effective this date.

In testimony whereof I have hereunto set my hand and caused the seal of the United States of America to be affixed.

DONE at the city of Washington this 25th day of June, in the year of our Lord One Thousand Nine Hundred and Twenty-nine, and of the
[SEAL] Independence of the United States of America, the One Hundred and Fifty-third.

HERBERT HOOVER

By the President:

HENRY L STIMSON

Secretary of State.

Part VI

THE HOOVER DAM POWER CONTRACTS OF 1930

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Appendix 601

**1930 POWER CONTRACTS:
GENERAL REGULATIONS**

(April 25, 1930, as amended November 16, 1931)

BOULDER CANYON PROJECT

GENERAL REGULATIONS FOR LEASE OF POWER

I

The United States will, at its own cost, construct in the main stream of the Colorado River, at Black Canyon, a dam, designated as Hoover Dam, creating thereby at the date of completion a storage reservoir having a maximum water surface elevation at about twelve hundred twenty-two (1,222) feet above sea level (United States Geological Survey datum) of a capacity of about twenty-nine million five hundred thousand (29,500,000) acre-feet. The United States will also construct in connection therewith outlet works, pressure tunnels, penstocks, power-plant building, and furnish and install generating, transforming, and high-voltage switching equipment for the generation of the energy allocated to the various allottees, respectively. Title to Hoover Dam, reservoir, plant, and incidental works shall forever remain in the United States.

II

The United States will operate and maintain the dam, reservoir, pressure tunnels, penstocks to but not inclusive of the shut-off valves at the inlets to the turbine casings, and outlet works, and will have full control of all water passing the dam for any and all purposes. The dam and reservoir will be operated and used, first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of the Colorado River compact; and, third, for power.

III

The United States will lease to the City of Los Angeles, referred to herein as the city, for fifty (50) years from the date at which energy is ready for delivery to the city, as announced by the Secretary, such power-plant units and corresponding plant facilities and incidental structures as may be necessary to generate the energy allocated to it and energy for those allottees for whom the city is herein designated the generating agency, together with the right to generate such electrical energy.

The United States will lease to Southern California Edison Co. (Ltd.), referred to herein as the company, such power-plant units and corresponding plant facilities and incidental structures as may be necessary to generate the energy allocated to it and energy for those allottees for whom the company is herein designated the generating agency, together with the right to generate such electrical energy, for a period beginning with the date at which the first of such power-plant units is ready for operation and water is available therefor as announced by the Secretary, and ending at a time fifty (50) years from the date at which energy is ready for delivery to the city.

The machinery and equipment under lease to either lessee shall be operated and maintained by such lessee without interference from or control by the other lessee, but subject nevertheless to the supervisory authority of the Secretary or his representative, under the terms of the lease.

Subject to conditions hereinafter stated, the designation of generating agencies shall be as follows:

Generation of energy allocated to and used by the States of Nevada and Arizona shall be effected by the city.

Generation of energy allocated to municipalities shall be effected by the city.

Generation of energy allocated to the district shall be effected by the city.

Generation of energy allocated to the companies shall be effected by Southern California Edison Co. (Ltd.).

The lessees and allottees may make other arrangements for generation, subject to the approval of the Secretary.

Disputes and disagreements between any allottee and the lessee generating energy for it, with respect to such generation, and/or the cost thereof, shall be determined by the Secretary unless otherwise specifically provided by contracts thereof with the Secretary.

All generation shall be effected at cost, except as provided in contracts with the United States.

IV

The respective portions of the power plant and appurtenant structures shall be operated and maintained by the city and the company, severally, under the supervision of a director appointed by the Secretary. The city and the company shall each be responsible for the operation and maintenance of that part of the power plant operated by it and shall bear the cost thereof. The United States will pay each lessee in the form of credits upon the account of such lessee for amounts due the United States under its contract, the cost incurred by it in generating energy for other allottees for whom it is the designated generating agency, and will require such other allottees to repay such cost to the United States. Except as to off-peak power the term "cost" as used with reference to generating energy for other allottees, shall include a proper proportionate allowance for amortization of the amounts for which the respective lessees are obligated to the United States on account of use of machinery and equipment and interest on the respective lessees' prepayments thereof; a proper proportionate part of any annuity set up in accordance with regulations of the Secretary, and any additional expenditures made by the respective lessees with the approval of the Secretary for the purpose of meeting the obligation of the lessees to make replacements; and a proper proportionate part of the actual outlay of the lessees for operating such machinery and equipment and keeping the same in repair, including reasonable overhead charges. The extent of the allowance for the several items and the system of accounting therefor shall be prescribed by the Secretary under uniform regulations to be promulgated by him in accordance with the Boulder Canyon project act. The United States will compensate each lessee for the generation by it of any secondary energy not taken by the district or the lessees in accordance with Article V hereof but disposed of by the United States, such compensation to cover the pro rata cost thereof as defined in this article (in proportion to the total kilowatt-hours generated in that month by each lessee), during the time said secondary energy was generated. Such secondary energy will be disposed of by the United States subject only to the prior right thereto of the district and/or the lessees.

The director, among other powers, shall have authority to enforce rules and regulations promulgated by the Secretary in accordance with the Boulder Canyon project act, respecting operation and maintenance of the power plant and appurtenant works and structures.

Prior to the promulgation of any additional regulations, or the change or modification of regulations, the Secretary shall give any lessee and any allottee affected thereby, an opportunity to be heard.

V

The following allocation of energy is made (the percentages stated being percentages of the total firm energy available) subject, however, to the conditions hereinafter stated:

Of firm energy

A. To the State of Nevada, for use in Nevada, not exceeding eighteen per centum (18%) of said total firm energy.

B. To the State of Arizona, for use in Arizona, not exceeding eighteen per centum (18%) of said total firm energy.

Should either of the States not take its full eighteen per centum (18%) allocation within a period of twenty (20) years hereof, the other may then contract for the energy not so taken up to four per centum (4%) of the total firm energy, provided that the combined amount used by the two States shall not, at any time, exceed thirty-six per centum (36%) of such total firm energy.

C. To the Metropolitan Water District of Southern California (hereinafter referred to as the district) so much energy as may be needed and used for pumping Colorado River water into and in its aqueduct for the use of such district within the following limits:

(1) Not exceeding thirty-six per centum (36%) of said total firm energy, plus

(2) All secondary energy developed at the Boulder Dam power plant as provided in these regulations; plus

(3) So much of the firm energy allocated to the States, the city and the company as may not be in use by them. Energy allocated to the States but not in use by them shall be released to the district by the two lessees equally (unless they agree upon a different ratio) as follows:

(a) If the district makes a firm contract with the Secretary for the balance of the lease period for part or all of such unused States energy (subject to the first right of the States thereto) such contract shall be made effective upon two years' written notice to the Secretary, and compensation to the lessees, respectively, for main transmission line property rendered idle;

(b) If the district does not so make a firm contract for such energy, then energy allocated to the States but not in use by them shall be released to the district upon not less than fifteen (15) months' written notice to the Secretary and at such compensation as the district and such lessees, respectively, may agree upon, to cover cost and overhead of replacing energy which otherwise would have been received at the Pacific coast end of the main transmission lines by the lessees, respectively. Such cost shall include interest on and depreciation and operation and

maintenance of the plant capacity while required for the generation of such substitute energy; and also appropriate allowance for interest on and maintenance and depreciation of plant capacity rendered idle because of cessation of generation of such substitute energy until such time as such plant capacity would otherwise have been installed by the lessees, respectively, for their own requirements. If the district and the respective lessees fail to agree on such compensation, such energy shall nevertheless be released to the district, and the disagreement shall be determined by arbitration or as may be provided in the respective contracts of the parties with the Secretary. Such determination shall include allowance for items of cost, and overhead as specified in this paragraph. Pending such determination, energy so released shall be paid for by the district at the rate for firm energy but the determination of compensation shall not be controlled by such rate.

During any year beginning June 1, the district shall not use any secondary energy nor any unused State energy, until it has first used subsequent to June 1, next preceding, an amount of firm energy equivalent to one-twelfth of the amount of firm energy it is obligated to take and/or pay for annually multiplied by the number of months elapsed since June 1, next preceding.

- (4) If, due to temporary deficiency in secondary energy regularly used by the district, substitute energy is requested by the district in excess of the energy made available under the foregoing subparagraph (3) (b) the city and/or the company may release so much energy as may be practicable on the same terms as provided in subsection (3) (b) preceding.

D. To the municipalities of—

	<i>Percent</i>
Pasadena.....	1. 6183
Glendale.....	1. 8867
Burbank.....	. 5896
Total.....	4. 0946

NOTE.—Amendments of March 10, 1931, and July 1, 1931, extended the date for submission of an allocation to July 15 and November 16, 1931, respectively. An agreement having been submitted to the Secretary whereby only the above municipalities elected to contract, in the amounts above stated, and the other municipalities named in regulations of April 25, 1930, i. e., Anaheim, Beverly Hills, Colton, Fullerton, Newport Beach, Riverside, San Bernardino, and Santa Ana, withdrew, the allocation under subsection D is amended as above, effective November 16, 1931.

E. To the City of Los Angeles, 14.9054% (being 13% as provided in regulations of April 25, 1930, plus 1.9054%, which is the balance of

6% allocated the municipalities by regulations of said date and not applied for by them pursuant to subsection D as amended).

NOTE.—Amended as above, effective November 16, 1931. (See note under subsection D.)

F. To—

	<i>Percent</i>
Southern California Edison Co. (Ltd.).....	7.2
Southern Sierras Power Co.....	.9
Los Angeles Gas & Electric Corporation.....	.9

NOTE.—Amended as above, effective November 16, 1931, to accord with allocation agreement submitted pursuant to subsection F as promulgated in regulations of April 25, 1930, time having been extended to July 15, 1931, by amendment of March 10, 1931, and to November 16, 1931, by amendment of July 1, 1931.

The foregoing allocations are subject to the following conditions:

(I) So much of the energy allocated to the States (thirty-six per centum (36%) of firm energy) and not in use by them, or failing their use by the district for the above purposes, shall be taken and paid for one-half by the city and one-half by the following allottees in the ratio stated below:

	<i>Percent</i>
Southern California Edison Co. (Ltd.).....	80
Los Angeles Gas & Electric Corporation.....	10
Southern Sierras Power Co.....	10

NOTE.—Amended as above, effective November 16, 1931, to accord with an allocation agreement submitted in accordance with subsection F as promulgated in regulations of April 25, 1930, time having been extended to July 15, 1931, by amendment of March 10, 1931, and to November 16, 1931, by amendment of July 1, 1931.

(II) So much of the energy allocated to the municipalities by regulations of April 25, 1930 (6%) as has been relinquished by them (1.9054%), and so much of the energy contracted for by them (4.0946%), as is not used by them directly or under contract for municipal purposes and/or distribution to their inhabitants, shall be taken and paid for by the city (without, however, impairing the obligation of said municipalities to the United States to take and pay for energy contracted for by them, respectively).

NOTE.—Amended as above, effective November 16, 1931, to accord with an allocation agreement and elections thereunder submitted in accordance with subsection D. (See note under subsection D.)

(III) So much of the energy allocated to the Southern Sierras Power Co., the San Diego Consolidated Gas & Electric Co., and the Los Angeles Gas & Electric Corporation by regulations of April 25, 1930, as has not been or is not contracted for by them shall be taken and paid for by the Southern California Edison Co. (Ltd.).

NOTE.—Amended as above, effective November 16, 1931.

(IV) If any allottee is permitted by the United States to divert water from the reservoir at a time when the reservoir is not spilling, in consequence of which the amount of energy which would have been utilized is diminished, such diminution, to such extent as may be provided in the contract, shall be debited to the allocation of firm energy herein made to such allottee; and charge for the energy equivalent of such diversion shall be made, and the amount of energy which the allottee shall otherwise be obligated to take and pay for hereunder shall be correspondingly reduced.

The reservoir shall be considered as spilling whenever water is being discharged in excess of the amount used for the generation of power, whether such waste occurs over the spillway or otherwise.

(V) Each of the States of Arizona and Nevada may, from time to time within the period of the aforesaid lease, contract for energy for use within such State in any amount until the total allocated, respectively, to each is in use as provided above; and may terminate such contract, or contracts, without prejudice to the right to again contract for such energy. All such contracts shall be executed with the Secretary. A contract requiring one thousand (1,000) horsepower (of maximum demand) or less may become effective or be terminated on six months' written notice of requirement or termination given the director by the State; provided, that the notice given shall be two years if in the twelve months preceding said notice of demand the total increment to such State has exceeded five thousand (5,000) horsepower of maximum demand or if in the twelve months preceding said notice of termination the decrement to such State has exceeded five thousand (5,000) horsepower of maximum demand. In all cases the director shall immediately transmit such notice to each lessee. Whenever the amount in use is in excess of five thousand (5,000) horsepower of maximum demand, the lessees and other allottees respectively shall be compensated for property rendered idle by use of such excess in such amount as the Secretary shall determine to be equitable.

Firm energy not contracted for by the States shall be available for use by the district as herein elsewhere provided, and if not in use by the States and/or the district, shall be taken and paid for one-half by the city and one-half as follows: By the Southern California Edison Co. (Ltd.), 80 percent of said one-half; by the Southern Sierras Power Co., 10 percent of said one-half; and by the Los Angeles Gas & Electric Corporation, 10 percent of said one-half.

NOTE.—Amended as above, effective November 16, 1931, to accord with an allocation agreement submitted pursuant to subsection F; see note thereunder. Also, regulations of April 25, 1939, provided for contingencies in event a State should make a firm contract under section 5c of the Boulder Canyon project act in lieu of accepting the allocation therein made. As the time for execution of

such a firm contract under section 5c of that act has expired by the limitation stated in the act the balance of this paragraph as originally promulgated is revoked, effective November 16, 1931.

Of secondary energy

The district shall have the right to purchase and use all secondary energy as provided in these regulations for the purposes stated in the first paragraph of subdivision C of this article. The city shall have the right to purchase and use one-half, and the allottees named in subsection F shall have the right to purchase and use a total of one-half (in the proportions in which they share the obligations assumed under subsection "v" as to unused State allocations) of such secondary energy as is not used by the district. Any such energy not used by one lessee shall be available, for the time being, to the other. To the extent that secondary energy is not taken as aforesaid, then and in such event the United States reserves the right to take, use, and dispose of such energy, from time to time, as it sees fit, giving credit therefor as provided in these regulations.

NOTE.—Modified as above, effective November 16, 1931, an allocation agreement having been submitted by the allottees named in subsection F whereby the obligation of the Southern California Edison Co. (Ltd.), under subsection "v" and its conditional rights to secondary energy under this paragraph, were both shared in the same ratio as the allocation of firm energy among them under subsection F. (See note under subsections F and "v".)

Of firm energy allocated to, but not used by, the district

In the event the district shall fail for any reason to use all or any of the firm energy herein allotted to it for the only purpose for which said firm energy is allotted to it, that is, for pumping water into and in its aqueduct, then no disposition shall be made of such firm energy by the Secretary without first giving to a successor to the district which may undertake to build or maintain a Colorado River Aqueduct the opportunity to take said firm energy for the same purpose and under the same terms as those to which the district was obligated.

In the event no such successor takes said firm energy as provided above, then no disposition of such firm energy shall be made by the Secretary without first giving to each lessee the opportunity to contract on equal terms and conditions, to be prescribed by the Secretary, for one-half of such energy, together with such portion of the remainder as the other lessee shall not elect to take.

Of firm energy not disposed of in the foregoing allocations

In case the dam which the United States erects provides a maximum water surface elevation in excess of one thousand two hundred twenty-two (1,222) feet above sea level (United States Geological Survey datum), and thereby increases the quantity of firm energy above the quantity of four billion two hundred forty million (4,240,000,000) kilowatt-hours allocated above, said additional firm energy

shall be generated, taken, and paid for by the city on the same terms and conditions as other firm energy under its contract, but without prejudice to the foregoing allocations or to the contractual rights of other allottees.

NOTE.—Regulations promulgated April 25, 1930, reserved to the Secretary the right to contract with any municipality for this additional energy on or before April 15, 1931, and provided that energy not so contracted for should be taken and paid for by the city. This time was extended to July 15, 1931, by amendment of March 10, 1931, and to November 16, 1931, by amendment of July 1, 1931. No such contract having been applied for, this subsection is amended as above, effective November 16, 1931.

VI

Contractors hereunder shall agree as follows:

(1) To pay the United States for the use of falling water for the generation of energy for their own use, respectively, by the equipment leased hereunder, as follows:

(a) One and sixty-three hundredths mills (\$0.00163) per kilowatt-hour (delivered at transmission voltage), for firm energy;

(b) One-half mill (\$0.0005) per kilowatt-hour (delivered at transmission voltage), for secondary energy.

(2) The lessees of the power plant shall compensate the United States for the use of leased equipment as herein elsewhere provided;

(3) The lessees shall also maintain said equipment in first-class operating condition, including repairs to and replacements of machinery;

(4) Allottees other than the lessees shall pay the United States, for credit to the lessees, on account of use of the leased equipment;

(5) Allottees other than the lessees shall pay the United States, for credit to the lessees, on account of maintenance of said equipment, including repairs to and replacements of machinery; provided, however, that if the expenditures for replacements shall exceed at any time the sum accumulated by the lessees as a depreciation reserve in accordance with rules and regulations prescribed by the Secretary, pursuant to the Boulder Canyon project act, less all amounts previously withdrawn for replacements, then the rates aforesaid shall be readjusted as hereinafter provided so as to reimburse the said lessees severally for such excess expenditures within the term of said lease.

All energy shall be measured at generator voltage and suitable metering equipment shall be provided and installed by the United States for this purpose. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses and energy required for operation of station auxiliaries in determining the amounts of energy delivered at transmission voltage as provided in these regulations.

At the end of fifteen (15) years from the date of execution of lease and every ten (10) years thereafter, the above rates of payment for firm and secondary energy shall be readjusted upon demand of any party thereto, either upward or downward as to price, as the Secretary may find to be justified by competitive conditions at distributing points or competitive centers.

The rate for falling water for generation of firm energy, which shall be uniform for all lessees, provided for by any such readjustment shall be arrived at by deducting from the price of electrical energy justified by competitive conditions at distributing points or competitive centers—(1) all fixed and operating costs as provided for herein of transmission to such points; (2) all fixed and operating costs of such portion of the power-plant machinery as is to be operated and maintained by the several lessees, including the costs of repairs and replacements, as provided for in paragraph five (5) above; it being understood that such readjusted rates shall under no circumstances exceed the value of said energy, based upon competitive conditions at distributing points or competitive centers.

If the lessees or either of them shall not obtain a renewal of said lease at the expiration of the contract period, equitable adjustment for major replacements of machinery made between the date of the last readjustment of rates and the end of the contract period shall be made at the expiration of the lease.

VII

The amount of firm energy for the first year of operation (June 1 to May 31, inclusive) following the date of the completion of the dam as announced by the Secretary shall be defined as being four billion two hundred forty million (4,240,000,000) kilowatt-hours. For every subsequent year the amount defined as firm energy shall be decreased by eight million seven hundred sixty thousand (8,760,000) kilowatt-hours from that of the previous year.

Nevertheless, if it be determined by the Secretary that the rate of decrease of kilowatt-hours per year as above stated is not in accord with actual conditions, the Secretary reserves the right to fix a lesser rate for any year (June 1 to May 31, inclusive) in advance.

If the dam erected by the United States provides a maximum water surface elevation in excess of 1,222 feet above sea level (United States Geological Survey datum), the United States reserves the right to dispose of additional firm energy thereby made available, not to exceed ninety million (90,000,000) kilowatt-hours per year, subject to pro rata of the eight million seven hundred sixty thousand (8,760,000) kilowatt-hours annual diminution above provided for.

The term "secondary energy" wherever used herein shall mean all electrical energy generated in one year (June 1 to May 31, inclusive)

in excess of the amount of firm energy as hereinabove defined, available in such year.

VIII

The contractors shall pay monthly for all energy in accordance with the rates established or provided for herein. When energy taken in any month is not in excess of one-twelfth ($\frac{1}{12}$) of the minimum annual obligation, bill for such month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month. All energy used during any month in excess of one-twelfth ($\frac{1}{12}$) of the minimum annual obligation shall be paid for at the rate for secondary energy in effect when such energy was taken; provided, however, that the secondary rate shall not apply to any energy taken during any month unless and until an amount of energy equivalent to one-twelfth ($\frac{1}{12}$) of the minimum annual obligation has been taken for all months beginning with the month of June immediately preceding; provided, however, that the bill for the month of May shall not be less than the difference between the minimum annual payment and the sum of the amounts charged for firm energy during the preceding eleven (11) months. The United States will submit bills to all contractors by the fifth of each month immediately following the month during which the energy is generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less, in bills to lessees, credit allowances due lessees for generation for other allottees) are not paid when due, a penalty of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional penalty of one per centum (1%) of the amount unpaid shall be added on the first day of each calendar month thereafter during such delinquency.

IX

The total payments made by each contractor for firm energy available in any year (June 1 to May 31, inclusive), whether any energy is generated or not, exclusive of its payments for use of machinery, shall be not less than the number of kilowatt-hours of firm energy available to said contractor and which said contractor is obligated to take and/or pay for during said year, multiplied by one and sixty-three hundredths mills (\$0.00163), or multiplied by the adjusted rate of payment for firm energy in case the said rate is adjusted as provided in Article VI hereof, less credits on account of charges to other allottees, as provided for and referred to in Article IV hereof. For a fractional year at the beginning or end of the contract period, the minimum annual payment for firm energy shall be proportionately adjusted in the ratio that the number of days water is available for

generation of energy in such fractional year bears to three hundred sixty-five (365). Provided, however, that in order to afford a reasonable time for the respective lessees to absorb the energy contracted for, the minimum annual payments by each for the first three (3) years after energy is ready for delivery to such lessees, respectively, as announced by the Secretary, shall be as follows, in percentages of the ultimate annual obligation, to take and/or pay for firm energy:

	<i>Percent</i>
First year.....	55
Second year.....	70
Third year.....	85
Fourth year and all subsequent years.....	100

During said absorption period, if the quantity of energy taken in any one year (June 1 to May 31, inclusive) is in excess of the above percentages of the ultimate obligation during such year to take and/or pay for firm energy, such excess shall be paid for at the rate for secondary energy. Provided further, that the minimum annual payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Paragraph X hereof.

X

The United States will deliver water continuously to each lessee in the quantity, in the manner, and at the times necessary for the generation of the energy which each of said lessees has the right and/or obligation to generate under its contract in accordance with the load requirements of each of said lessees and of allottees for which the respective lessees are generating agencies, excepting only that such delivery shall be regulated so as not to interfere with the necessary use of said Boulder Canyon Dam and Reservoir for river regulation, improvement of navigation, flood control, irrigation, or domestic uses, and the satisfaction of present perfected rights in or to the waters of the Colorado River or its tributaries, in pursuance of Article VIII of the Colorado River compact. The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of energy at any time for the purposes of maintenance, repairs and/or replacements, or installation of equipment, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the lessees reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work after consultation with the lessees at such times and in such manner as will cause the least inconvenience to the lessees and the allottees, and shall prosecute such work with diligence, and, without unnecessary delay, will

resume delivery of water so discontinued or reduced. Should the delivery of water be discontinued or reduced below the amount required, severally, for the normal generation of firm energy for the payment of which the contractor obligates itself, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, and the product of the number of hours during which the delivery of water is partially reduced, and the percentage of said partial reduction below the actual quantity of water required for the normal generation of firm energy. Total or partial reductions in delivery of water which do not reduce the power output below the amount required at the time for the normal generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760). In no event shall any liability accrue against the United States, its officers, agents, and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, act of God, or of the public enemy, or other similar cause.

Each lessee shall make full and complete written monthly reports as directed by the Secretary, on forms to be supplied by the United States, of all electrical energy generated by it and the disposition thereof to allottees. Such reports shall be made and delivered to the director on the third day of the month immediately succeeding the month in which the electrical energy is generated, and the records and data from which such reports are made shall be accessible to the United States on demand of the Secretary.

XI

Any agency receiving a contract for electrical energy equivalent to one hundred thousand (100,000) firm horsepower, or more, may when deemed feasible by the Secretary, from engineering and economic considerations and under general regulations prescribed by him, be required to permit any other agency having contracts for less than the equivalent of twenty-five thousand (25,000) firm horsepower, upon application to the Secretary made within sixty (60) days from the execution of the contract of the agency the use of whose transmission line is applied for, to participate in the benefits and use of any main transmission line constructed or to be constructed by the former for carrying such energy (not exceeding, however, one-fourth ($\frac{1}{4}$) the capacity of such line), upon payment by such other agencies of a reasonable share of the cost of construction, operation, and maintenance thereof.

XII

The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation, and maintenance of main transmission lines, to transmit electrical energy generated at Hoover Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses, and other uses incident to the operation and maintenance of the power plant and incidental works.

XIII

The Secretary, or his representatives, shall at all times have the right of ingress to and egress from all works of the contractors for power or power privileges, for the purpose of inspection, repairs, and maintenance of works of the United States, and for all other proper purposes. The Secretary or his representatives shall also have free access at all reasonable times to the books and records of contractors for power or power privileges, relating to the generation, transmission, and disposition of electrical energy with the right at any time during office hours to make copies of or from the same.

XIV

All patents, grants, contracts, concessions, leases, permits, licenses, rights-of-way, or other privileges from the United States or under its authority, necessary or convenient for the use of waters of the Colorado River or its tributaries, or for the generation or transmission of electrical energy generated by means of the waters of said river or its tributaries, whether under the Boulder Dam project act, the Federal water power act, or otherwise, shall be upon the express condition and with the express covenant that the rights of the recipients or holders thereof to waters of the river or its tributaries, for the use of which the same are necessary, convenient, or incidental, and the use of the same shall likewise be subject to and controlled by said Colorado River compact.

XV

All contracts for purchase of energy available at Hoover Dam shall be made directly with the United States.

XVI

No contract for electrical energy or for generation of electrical energy shall be of longer duration than fifty (50) years from the date at which such energy is ready for delivery as announced by the Secretary.

XVII

The holder of any contract for electrical energy not in default thereunder shall be entitled to a renewal thereof upon such terms and conditions as may be authorized or required under the then existing laws and regulation, unless the property of such holder dependent for its usefulness on a continuation of the contract be purchased or acquired and such holder be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

XVIII

All contracts shall be subject to these, and such other rules and regulations conforming to the Boulder Canyon project act as the Secretary may from time to time promulgate; provided, however, that no right under any contract then existing shall be impaired or obligation thereunder be extended thereby; and provided further, that opportunity for hearing shall be afforded such contractors by the Secretary prior to modification or repeal thereof or promulgation of additional regulations.

RAY LYMAN WILBUR,
Secretary of the Interior.

WASHINGTON, D. C., *April 25, 1930.*

NOTE.—Amended, as noted in the text, March 10, 1931, July 1, 1931, and November 16, 1931.

Appendix 602

1930 POWER CONTRACTS:

TABLE OF CONTRACTS EXECUTED UNDER REGULATIONS OF APRIL 25, 1930, AS AMENDED

LEASE OF POWER PRIVILEGE

First edition:

Appendix No. 2. United States, City of Los Angeles, and Southern California Edison Co. (Ltd.), dated April 26, 1930, amended May 28, 1930, and September 23, 1931.

CONTRACTS FOR ELECTRICAL ENERGY

Appendix No. 3. United States and Metropolitan Water District of Southern California, dated April 26, 1930, amended May 31, 1930.

Appendix No. 4. United States and the Los Angeles Gas & Electric Corp., dated November 12, 1931.

Appendix No. 5. United States and Southern Sierras Power Co., dated November 5, 1931.

Appendix No. 6. United States and City of Pasadena, dated September 29, 1931.

Appendix No. 7. United States and City of Glendale, dated November 12, 1931.

Appendix No. 8. United States and City of Burbank, dated November 10, 1931.

United States and State of Nevada, dated May 6, 1936, supplemented April 23, 1938, December 7, 1939, December 19, 1940; dated August 10, 1936 (superseded by 1941 contract, see Appendix 903, p. A345 *infra*).

Part VII

DOCUMENTS RELATING TO CONSTRUCTION OF HOOVER DAM, POWER PLANT, AND TRANS- MISSION LINES

(Items marked * are appendixes to the first edition, omitted from this edition)

COMPLIANCE WITH CONDITIONS PRECEDENT TO CONSTRUCTION

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42*	Letter of June 16, 1930, of Secretary Wilbur to the Senate Committee on Appropriations.....	*
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45*	Letter of June 17, 1930, Secretary Wilbur to the Senate Committee on Appropriations.....	*
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CONSTRUCTION OF HOOVER DAM

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Appendix 701

**ORDER OF JULY 3, 1930 (NO. 436), TO COMMENCE
CONSTRUCTION**

ORDER No. 436

Hon. ELWOOD MEAD,
Commissioner of Reclamation.

SIR: You are directed to commence construction on Boulder Dam
today.

Respectfully,

RAY LYMAN WILBUR,
Secretary.
A257

Appendix 702

CONSTRUCTION OF HOOVER DAM: REPRESENTATIVE TECHNICAL REFERENCES

The following list is condensed from a bibliography of specifications and articles furnished by the United States Bureau of Reclamation:

- Activities at Hoover Dam. A description of work now in progress and life in Las Vegas. C. H. Pease. *New Reclamation Era*, vol. 22, September 1931, pp. 186-187, illus.
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- Boulder Canyon Project Transportation. W. R. Nelson. *Reclamation Era*, vol. 25, May 1935, pp. 100-102, illus.
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- Construction of the Boulder Dam; Methods of Pouring the Concrete. L. P. Sowles. *Compressed Air Mag.*, vol. 39, April 1934, pp. 4384-4396; vol. 39, September 1934, pp. 4533-4537.
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- Cooling the Concrete in Boulder Dam. C. H. Vivian. *Military Engr.*, vol. 26 May-June, 1934, pp. 195-198, illus.
- Crane Rails and Misc. Structural Steel for Boulder Power Plant, Boulder Canyon Project, Ariz.-Calif.-Nev., U. S. Bureau of Reclamation, Specs. n. 583, 1934, pp. 1-23, illus.
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- Excavation of Diversion Tunnels for Hoover Dam. W. R. Nelson. *Reclamation Era*, vol. 23, September 1932, pp. 158-159, illus.
- Foundations and Abutments of Hoover Dam. F. A. Nickell to J. L. Savage. August 27, 1932.
- Hoover Dam On the Colorado River. *Engineer*, vol. 154, December 16, 1932, pp. 606-609, illus. (vol. 156, October 20, 1933, pp. 374-376) (vol. 156, November 3, 1933, pp. 440-441, illus.).
- Hoover Dam and Specifications; Plans. U. S. D. I., B. of R. Specs. No. 519.
- Hoover Dam Project. E. Mead. *Auburn Engr.*, vol. 6, January 1931, pp. 89-90, illus.
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Appendix 703

HOOVER DAM TRANSMISSION CIRCUITS

Hoover Dam transmission circuits

Circuit terminals	Ownership	Length	Oper- ating voltage	Supporting structure	Number of 3 ϕ circuits	Conductor	Date in service
		<i>Miles</i>	<i>Kilovolts</i>			<i>Size</i>	
Hoover-Los Angeles:							
No. 1	DW & P, City of Los Angeles	208	287.5	Steel tower	2, single, 226 miles	512,000 CM	Oct. 22, 1936
No. 2	do	266	287.5	do	Double, 40 miles	512,000 CM	Do.
No. 3	do	259	287.5	do	Single	512,000 CM	May 2, 1940
Hoover-Chino:							
No. 1	Southern California Edison Co	233	230	do	do	605,000 CM	June 22, 1939
No. 2	do	233	230	do	do	605,000 CM	Nov. 15, 1941
Hayfield-Highgrove	do	105	230	do	do	605,000 CM	Dec. 31, 1945
Hoover-Hayfield	Metropolitan Water District	177	230	do	do	795,000 CM	Nov. 1, 1938
Camino-Geno	do	60	230	do	do	510,000 CM	
Hoover-Basic Magnesium	State of Nevada	13	230	do	do	795,000 CM	Nov. 1, 1938
Do	do	20	230	do	do	500,000 CM	May 17, 1942
Hoover-San Bernardino	California Electric Power Co	223	138	Steel H frame	do	500,000 CM	Oct. 2, 1942
Hoover-Kingman	Citizens Utilities Co	71	69	Single wood pole	do	4/0	June 25, 1931
Hoover-Needles	California Pacific Utilities Co	96	69	do	do	1/0	Oct. 3, 1938
Hoover-Pioche	Lincoln County Power District	157	69	Wood H frame	do	214,500 CM	July 2, 1938
Hoover-Las Vegas	Southern Nevada Power Co	26	69	Single wood pole	do	4/0	Sept. 1, 1937
Hoover-Boulder City	USBR		69	do	do	3/0	Oct. 9, 1944
							Feb. 19, 1948

Part VIII

THE BOULDER CANYON PROJECT ADJUSTMENT ACT AND SUPPLEMENTARY LEGISLATION

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Appendix 801

BOULDER CANYON PROJECT ADJUSTMENT ACT

(Act of July 19, 1940, 54 Stat. 774)

[PUBLIC—No. 756—76TH CONGRESS]

[CHAPTER 643—3D SESSION]

[H. R. 9877]

AN ACT Authorizing the Secretary of the Interior to promulgate and to put into effect charges for electrical energy generated at Boulder Dam, providing for the application of revenues from said project, authorizing the operation of the Boulder Power Plant by the United States directly or through agents, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is hereby authorized and directed to, and he shall, promulgate charges, on the basis of computation thereof, for electrical energy generated at Boulder Dam during the period beginning June 1, 1937, and ending May 31, 1987; computed to be sufficient, together with other net revenues from the project, to accomplish the following purposes:

(a) To meet the cost of operation and maintenance, and to provide for replacements, of the project during the period beginning June 1, 1937, and ending May 31, 1987;

(b) To repay to the Treasury, with interest, the advances to the Colorado River Dam Fund for the project made prior to June 1, 1937, within fifty years from that date (excluding advances allocated to flood control by section 2 (b) of the Project Act, which shall be repayable as provided in section 7 hereof), and such portion of such advances made on and after June 1, 1937, as (on the basis of repayment thereof within such fifty-year period or periods as the Secretary may determine) will be repayable prior to June 1, 1987;

(c) To provide \$600,000 for each of the years and for the purposes specified in section 2 (c) hereof; and

(d) To provide \$500,000 for each of the years and for the purposes specified in section 2 (d) hereof.

Such charges may be made subject to revisions and adjustments at such times, to such extent, and in such manner, as by the terms of their promulgation the Secretary shall prescribe.

SEC. 2. All receipts from the project shall be paid into the Colorado River Dam Fund and shall be available for:

(a) Annual appropriation for the operation, maintenance, and replacements of the project, including emergency replacements necessary to insure continuous operations;

(b) Repayment to the Treasury, with interest (after making provision for the payments and transfers provided in subdivisions (c) and (d) hereof), of advances to the Colorado River Dam Fund for the construction of the project (excluding the amount allocated to flood control by section 2 (b) of the Project Act), and any readvances made to said fund under section 5 hereof; and

(c) Payment subject to the provisions of section 3 hereof, in commutation of the payments now provided for the States of Arizona and Nevada in section 4 (b) of the Project Act, to each of said States of the sum of \$300,000 for each year of operation, beginning with the year of operation ending May 31, 1938, and continuing annually thereafter until and including the year of operation ending May 31, 1987, and such payments for any year of operation which shall have expired at the time when this subdivision (c) shall become effective shall be due immediately, and be paid, without interest, as expeditiously as administration of this Act will permit, and each such payment for subsequent years of operation shall be made on or before July 31, following the close of the year of operation for which it is made. All such payments shall be made from revenues hereafter received in the Colorado River Dam Fund.

Notwithstanding the foregoing provisions of this subsection, in the event that there are levied and collected by or under authority of Arizona or Nevada or by any lawful taxing political subdivision thereof, taxes upon—

(i) the project as herein defined;

(ii) the electrical energy generated at Boulder Dam by means of facilities, machinery, or equipment both owned and operated by the United States, or owned by the United States and operated under contract with the United States;

(iii) the privilege of generating or transforming such electrical energy or of use of such facilities, machinery, or equipment or of falling water for such generation or transforming; or

(iv) the transmission or control of such electrical energy so generated or transformed (as distinguished from the transmission lines and other physical properties used for such transmission or control) or the use of such transmission lines or other physical properties for such transmission or control,

payments made hereunder to the State by or under the authority of which such taxes are collected shall be reduced by an amount equivalent to such taxes. Nothing herein shall in anywise impair the

right of either the State of Arizona or the State of Nevada, or any lawful taxing political subdivision of either of them, to collect nondiscriminatory taxes upon that portion of the transmission lines and all other physical properties, situated within such State and such political subdivision, respectively, and belonging to any of the lessees and/or allottees under the Project Act and/or under this Act, and nothing herein shall exempt or be construed so as to exempt any such property from nondiscriminatory taxation, all in the manner provided by the constitution and laws of such State. Sums, if any, received by each State under the provisions of the Project Act shall be deducted from the first payment or payments to said State authorized by this Act. Payments under this section 2 (c) shall be deemed contractual obligations of the United States, subject to the provisions of section 3 of this Act.

(d)¹ Transfer, subject to the provisions of section 3 hereof, from the Colorado River Dam Fund to a special fund in the Treasury, hereby established and designated the "Colorado River Development Fund", of the sum of \$500,000 for the year of operation ending May 31, 1938, and the like sum of \$500,000 for each year of operation thereafter, until and including the year of operation ending May 31, 1987. The transfer of the said sum of \$500,000 for each year of operation shall be made on or before July 31 next following the close of the year of operation for which it is made: *Provided*, That any such transfer for any year of operation which shall have ended at the time this section 2 (d) shall become effective, shall be made, without interest, from revenues received in the Colorado River Dam Fund, as expeditiously as administration of this Act will permit, and without readvances from the general funds of the Treasury. Receipts of the Colorado River Development Fund for the years of operation ending in 1938, 1939, and 1940 (or in the event of reduced receipts during any of said years, due to adjustments under section 3 hereof, then the first receipts of said fund up to \$1,500,000), are authorized to be appropriated only for the continuation and extension, under the direction of the Secretary, of studies and investigations by the Bureau of Reclamation for the formulation of a comprehensive plan for the utilization of waters of the Colorado River system for irrigation, electrical power, and other purposes, in the States of the upper division and the States of the lower division, including studies of

¹ As amended by sec. 1 of Public Law 570 [H. R. 5901], (80th Cong., 2d sess.), approved June 1, 1948. Sec. 2 provided as follows:

SEC. 2. The availability of appropriations from the Colorado River Development Fund for the investigation and construction of projects in any of the States of the Colorado River Basin shall not be held to forbid the expenditure of other funds for those purposes in any of those States where such funds are otherwise available therefor.

quantity and quality of water and all other relevant factors. The next such receipts up to and including the receipts for the year of operation ending in 1955 are authorized to be appropriated only for the investigation and construction of projects for such utilization in and equitably distributed among the four States of the upper division: *Provided, however,* That in view of distributions heretofore made, and in order to expedite the development and utilization of water projects within all of the States of the upper division, the distribution of such funds for use in the fiscal years 1949 to 1955, inclusive, shall be on a basis which is as nearly equal as practicable. Such receipts for the years of operation ending in 1956 to 1987, inclusive, are authorized to be appropriated for the investigation and construction of projects for such utilization in and equitably distributed among the States of the upper division and the States of the lower division. The terms "Colorado River system", "States of the upper division", and "States of the lower division" as so used shall have the respective meanings defined in the Colorado River compact mentioned in the Project Act. Such projects shall be only such as are found by the Secretary to be physically feasible, economically justified, and consistent with such formulation of a comprehensive plan. Nothing in this Act shall be construed so as to prevent the authorization and construction of any such projects prior to the completion of said plan of comprehensive development; nor shall this Act be construed as affecting the right of any State to proceed independently of this Act or its provisions with the investigation or construction of any project or projects. Transfers under this section 2 (d) shall be deemed contractual obligations of the United States, subject to the provisions of section 3 of this Act.

(e)² Annual appropriation for the fiscal years 1948, 1949, 1950, and 1951 for payment to the Boulder City School District, as reimbursement for the actual cost of instruction, during each school year, in the schools operated by said district, of pupils who are dependents of any employee or employees of the United States living in or in the immediate vicinity of Boulder City, such reimbursement not to exceed the sum of \$65 per semester per pupil and to be payable semi-annually, after the term of instruction in each semester has been completed, under regulation to be prescribed by the Secretary.

Sec. 3. If, by reason of any act of God, or of the public enemy, or any major catastrophe, or any other unforeseen and unavoidable cause, the revenues, for any year of operation, after making provision for costs of operation, maintenance, and the amount to be set aside for said year for replacements, should be insufficient to make

² This section became a part of the act by Public Law 528 (80th Cong., 2d sess.).

the payments to the States of Arizona and Nevada and the transfers to the Colorado River Development Fund herein provided for, such payments and transfers shall be proportionately reduced, as the Secretary may find to be necessary by reason thereof.

SEC. 4. (a) Upon the taking effect of this Act, pursuant to section 10 hereof, the charges, or the basis of computation thereof, promulgated hereunder, shall be applicable as from June 1, 1937, and adjustments of accounts by reason thereof, including charges by and against the United States, shall be made so that the United States and all parties that have contracted for energy, or for the privilege of generating energy, at the project, shall be placed in the same position, as nearly as may be, as determined by the Secretary, that they would have occupied had such charges, or the basis of computation thereof, and the method of operation which may be provided for under section 9 hereof, been effective on June 1, 1937: *Provided*, That such adjustments with contractors shall not be made in cash, but shall be made by means of credits extended over such period as the Secretary may determine.

(b) In the event payments to the States of Arizona and Nevada, or either of them, under section 2 (c) hereof, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

SEC. 5. If at any time there shall be insufficient sums in the Colorado River Dam Fund to meet the cost of replacements, however necessitated, in addition to meeting the other requirements of this Act, or of regulations authorized hereby and promulgated by the Secretary, the Secretary of the Treasury, upon request of the Secretary of the Interior, shall readvance to the said fund, in amounts not exceeding, in the aggregate, moneys repaid to the Treasury pursuant to Section 2 (b) hereof, the amount required for replacements, however necessitated, in excess of the amount currently available therefor in said Colorado River Dam Fund. There is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, such sums, not exceeding said aggregate amount, as may be necessary to permit the Secretary of the Treasury to make such readvances. All such readvances shall bear interest.

SEC. 6. Whenever by the terms of the Project Act or this Act payment of interest is provided for, and whenever interest shall enter into any computation thereunder, such interest shall be computed at the rate of 3 per centum per annum, compounded annually:

SEC. 7. The first \$25,000,000 of advances made to the Colorado River Dam Fund for the project shall be deemed to be the sum allocated to flood control by section 2 (b) of the Project Act and repayment thereof shall be deferred without interest until June 1, 1987, after which time such advances so allocated to flood control shall be repayable to the Treasury as the Congress shall determine.

SEC. 8. The Secretary is hereby authorized from time to time to promulgate such regulations and enter into such contracts as he may find necessary or appropriate for carrying out the purposes of this Act and the Project Act, as modified hereby, and, by mutual consent, to terminate or modify any such contract: *Provided, however,* That no allotment of energy to any allottee made by any rule or regulation heretofore promulgated shall be modified or changed without the consent of such allottee.

SEC. 9. The Secretary is hereby authorized to negotiate for and enter into a contract for the termination of the existing lease of the Boulder Power Plant made pursuant to the Project Act, and in the event of such termination the operation and maintenance, and the making of replacements, however necessitated, of the Boulder Power Plant by the United States, directly or through such agent or agents as the Secretary may designate, is hereby authorized. The powers, duties, and rights of such agent or agents shall be provided by contract, which may include provision that questions relating to the interpretation or performance thereof may be determined, to the extent provided therein, by arbitration or court proceedings. The Secretary in consideration of such termination of such existing lease is authorized to agree (a) that the lessees therein named shall be designated as the agents of the United States for the operation of said power plant; (b) that (except by mutual consent or in accordance with such provisions for termination for default as may be specified therein) such agency contract shall not be revocable or terminable; and (c) that suits or proceedings to restrain the termination of any such agency contract, otherwise than as therein provided, or for other appropriate equitable relief or remedies, may be maintained against the Secretary. Suits or other court proceedings pursuant to the foregoing provisions may be maintained in, and jurisdiction to hear and determine such suits or proceedings and to grant such relief or remedies is hereby conferred upon, the District Court of the United States for the District of Columbia, with the like right of appeal or review as in other like suits or proceedings in said court. The Secretary is hereby authorized to act for the United States in such arbitration proceedings.

SEC. 10. This Act shall be effective immediately for the purpose of the promulgation of charges, or the basis of computation thereof, and the execution of contracts authorized by the terms of this Act, but

neither such charges, nor the basis of computation thereof, nor any such contract, shall be effective unless and until this Act shall be effective for all purposes. This Act shall take effect for all purposes when, but not before, the Secretary shall have found that provision has been made for the termination of the existing lease of the Boulder Power Plant and for the operation thereof as authorized by section 9 hereof, and that allottees obligated under contracts in force on the date of enactment of this Act to pay for at least 90 per centum of the firm energy shall have entered into contracts (1) consenting to such operation, and (2) containing such other provisions as the Secretary may deem necessary or proper for carrying out the purposes of this Act. For purposes of this section such 90 per centum shall be computed as of the end of the absorption periods provided for in regulations heretofore promulgated by the Secretary and in effect at the time of the enactment of this Act.

If contracts in accordance with the requirements of this section shall not have been entered into prior to June 1, 1941, this Act shall cease to be operative and shall be of no further force or effect.

SEC. 11. Any contractor for energy from the project failing or refusing to execute a contract modifying its existing contract to conform to this Act shall continue to pay the rates and charges provided for in its existing contract, subject to such periodic readjustments as are therein provided, in all respects as if this Act had not been passed, and so far as necessary to support such existing contract all of the provisions of the Project Act shall remain in effect, anything in this Act inconsistent therewith notwithstanding.

SEC. 12. The following terms wherever used in this Act shall have the following respective meanings:

"Project Act" shall mean the Boulder Canyon Project Act;

"Project" shall mean the works authorized by the Project Act to be constructed and owned by the United States, exclusive of the main canal and appurtenances mentioned therein, now known as the All-American Canal;

"Secretary" shall mean the Secretary of the Interior of the United States;

"Firm energy" and "allottees" shall have the meaning assigned to such terms in regulations heretofore promulgated by the Secretary and in effect at the time of the enactment of this Act;

"Replacements" shall mean such replacements as may be necessary to keep the project in good operating condition during the period from June 1, 1937, to May 31, 1987, inclusive, but shall not include (except where used in conjunction with the word "emergency" or the words "however necessitated") replacements made necessary by any act of God, or of the public enemy, or by any major catastrophe; and

"Year of operation" shall mean the period from and including June 1 of any calendar year to and including May 31 of the following calendar year.

SEC. 13. The Secretary of the Interior shall, in January of each year, submit to the Congress a financial statement and a complete report of operations under this Act during the preceding year of operations as herein defined.

SEC. 14. Nothing herein shall be construed as interfering with such rights as the States now have either to the waters within their borders or to adopt such policies and enact such laws as they may deem necessary with respect to the appropriation, control, and use of waters within their borders, except as modified by the Colorado River compact or other interstate agreement. Neither the promulgation of charges, or the basis of charges, nor anything contained in this Act, or done thereunder, shall in anywise affect, limit, or prejudice any right of any State in or to the waters of the Colorado River system under the Colorado River compact. Sections 13 (b), 13 (c), and 13 (d) of the Project Act and all other provisions of said Project Act not inconsistent with the terms of this Act shall remain in full force and effect.

SEC. 15. All laborers and mechanics employed in the construction of any part of the project, or in the operation, maintenance, or replacement of any part of the Boulder Dam, shall be paid not less than the prevailing rate of wages or compensation for work of a similar nature prevailing in the locality of the project. In the event any dispute arises as to what are the prevailing rates, the determination thereof shall be made by the Secretary of the Interior, and his decision, subject to the concurrence of the Secretary of Labor, shall be final.

SEC. 16. This Act may be cited as "Boulder Canyon Project Adjustment Act".

Approved, July 19, 1940.

Appendix 802

**PROCLAMATION OF MAY 29, 1941, ANNOUNCING
EFFECTIVE DATE OF BOULDER CANYON PROJ-
ECT ADJUSTMENT ACT**

THE SECRETARY OF THE INTERIOR,
Washington, May 29, 1941.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: The Boulder Canyon Project Adjustment Act (Act of July 19, 1940, 54 Stat. 774) provides in Section 10 thereof as follows:

* * * This Act shall take effect for all purposes when, but not before, the Secretary shall have found that provision has been made for the termination of the existing lease of the Boulder Power Plant and for the operation thereof as authorized by section 9 hereof, and that allottees obligated under contracts in force on the date of enactment of this Act to pay for at least 90 per centum of the firm energy shall have entered into contracts (1) consenting to such operation, and (2) containing such other provisions as the Secretary may deem necessary or proper for carrying out the purposes of this Act.

In view of contracts entered into in this month of May 1941, between the United States and lessees of Boulder Power Plant and allottees of electrical energy, I hereby find that provision has been made for the termination of the existing lease of the Boulder Power Plant and for the operation thereof as authorized by Section 9 of the Boulder Canyon Project Adjustment Act, and that allottees obligated under contracts in force on July 19, 1940, to pay for at least 90 per centum of the firm energy have entered into contracts (1) consenting to such operation and (2) containing such other provisions as I deem necessary and proper for carrying out the purposes of said Act.

Pursuant to said Section 10, the Boulder Canyon Project Adjustment Act today has taken effect for all purposes.

Very truly yours,

(Signed) HAROLD L. ICKES,
Secretary of the Interior.

A273

Appendix 803

COLORADO RIVER DAM FUND

NONPROJECT INVESTMENTS AND EXPENDITURES:

PROVISIONS OF INTERIOR DEPARTMENT APPROPRIATIONS ACT FOR FISCAL YEAR 1949

(Act of June 28, 1948, Public Law 841, 80th Cong. 2d sess.)

* * * * *

COLORADO RIVER DAM FUND

Boulder Canyon project: For operation, maintenance, and replacements of the dam, power plant, and other facilities, of the Boulder Canyon project, \$1,500,000, payable from the Colorado River dam fund, including payments to the Boulder City school district in accordance with the provisions of Public Law 528, approved May 12, 1948. Said payments for dependents of those employees of the Bureau of Reclamation directly employed in the construction, operation, and maintenance of the project shall be deemed a part of the cost of operation and maintenance of said project under section 1 (a) of the Boulder Canyon Project Adjustment Act (Act of July 19, 1940, 54 Stat. 774). Other such payments shall be deemed nonproject costs. The Secretary shall submit to the Appropriations Committees annually a justification showing all investments and expenditures made or proposed out of the Colorado River dam fund, for the joint use of the project and of other Federal activities at or near Boulder City. In the proportion that such investments and expenditures were or shall be for the use of such other Federal activities and not related to the construction, operation, or maintenance of the project they shall be deemed nonproject investments and expenditures. The obligation under the provision of section 2 of the said Act to repay to the United States Treasury advances and readvances to the Colorado River dam fund which obligation is made the basis for computation of rates under the provisions of section 1 of said Act, shall be diminished in the amount that nonproject investments or expenditures are or have been made from said fund and the rates computed pursuant to said section 1 of said Act shall reflect such diminution.

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Part IX

THE HOOVER DAM POWER CONTRACTS MADE UNDER THE BOULDER CANYON PROJECT ADJUSTMENT ACT

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**POWER CONTRACTS:
GENERAL REGULATIONS, MAY 20, 1941**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

THE SECRETARY OF THE INTERIOR,
Washington, May 20, 1941.

Mr. R. V. L. WRIGHT,
Washington, D. C.

MY DEAR MR. WRIGHT: Following your recommendation of May 20 I have approved and promulgated the attached "General Regulations for Generation and Sale of Power in accordance with Boulder Canyon Project Adjustment Act."

Please transmit copies of the regulations to the interested parties and proceed with the drafting of amendatory energy contracts in accordance with these regulations.

Sincerely yours,

(Signed) HAROLD L. ICKES,
Secretary of the Interior.

BOULDER CANYON PROJECT

**GENERAL REGULATIONS FOR GENERATION AND SALE OF POWER IN
ACCORDANCE WITH THE BOULDER CANYON PROJECT ADJUSTMENT
ACT**

PREAMBLE

Under the Act of July 19, 1940 (54 Stat. 774), designated as "Boulder Canyon Project Adjustment Act", the Secretary of the Interior is authorized and directed to promulgate charges, or the basis of computation thereof, for electrical energy generated at Boulder Dam during the period beginning June 1, 1937, and ending May 31, 1987, and is also authorized from time to time to promulgate such regulations as he may find necessary or appropriate for carrying out the purposes of the Act.

In pursuance of such authority the Secretary of the Interior approved and promulgated these regulations on May 20, 1941.

1. DEFINITIONS

The following terms wherever used herein shall have the following respective meanings:

"*Adjustment Act*" shall mean the Boulder Canyon Project Adjustment Act approved July 19, 1940 (54 Stat. 774).

"*Project Act*," "*Project*," "*Secretary*," "*Firm energy*," "*Allottees*," "*Replacements*," and "*Year of Operation*" shall have the respective meanings defined in Section 12 of the Adjustment Act.

"*Dam and appurtenant works*" shall mean the project as so defined, exclusive of the generating machinery and equipment.

"*Power-plant building*" shall mean the power-plant building consisting of the Nevada wing, the central portion, and the Arizona wing.

"*Generating machinery and equipment*" shall mean the machinery and equipment operated by the United States through the Agents for or in connection with the development of energy and in addition such common facilities in the power-plant building as are operated directly by the United States.

"*Main contract*" shall mean a contract between the United States and any allottee for electrical energy taken in accordance with the allocation of such allottee.

"*Common facilities*" shall mean those portions of generating machinery and equipment, including station service generating facilities, provided for the joint use of the operating agents and/or the operating agents and the United States.

"*Operating agents*" shall mean the agents of the United States operating any part of the generating machinery and equipment under a contract executed under the provisions of Section 9 of the Adjustment Act.

"*Interest*" shall mean interest computed at the rate of three percent (3%) per annum compounded annually.

"*Maximum demand*" when used with reference to the kilowatt or horsepower demand of any contractor shall mean the average kilowatt or horsepower demand during that 30-minute interval for which the average demand is greatest during the calendar month, measured at or corrected to transmission voltage at Boulder Power Plant.

2. OPERATION AND MAINTENANCE OF PROJECT

The dam and appurtenant works will be operated and maintained directly by the United States. The generating machinery and equipment will be operated and maintained by the United States directly or through The City of Los Angeles and its Department of Water and Power (the term "City" as used in these Regulations being deemed to be both The City of Los Angeles and its Department of Water and Power) and Southern California Edison Company, Ltd. (hereinafter

called the Company), as operating agents, in accordance with the provisions of an agency contract between the United States and such operating agents, entered into pursuant to the Adjustment Act. Additional generating machinery and equipment will be installed as provided in such agency contract.

3. FIRM AND SECONDARY ENERGY DEFINED

The amount of firm energy for the first year of operation (June 1, 1937, to May 31, 1938, inclusive) is defined as four billion three hundred thirty million (4,330,000,000) kilowatt-hours delivered at transmission voltage. For every subsequent year the amount defined as firm energy will be decreased by eight million seven hundred sixty thousand (8,760,000) kilowatt-hours from that of the previous year.

The term "secondary energy" wherever used herein means all electrical energy available in any year of operation in excess of the amount of firm energy as hereinabove defined. For the purpose of computation of energy rates, it is assumed that 40,000,000,000 kilowatt-hours of secondary energy will be available in the 50-year period ending May 31, 1987.

4. ALLOCATION OF ENERGY

(a) Firm Energy

Firm energy shall be allocated as follows:

Allottee	Percentage	Use by allottee restricted to following
State of Nevada.....	17.6259	In Nevada only.
State of Arizona.....	17.6259	In Arizona only.
Metropolitan Water District of Southern California (hereinafter called the District).	35.2517	Pumping Colorado River water into and in its aqueduct.
City of Burbank.....	.5773	
City of Glendale.....	1.8475	
City of Pasadena (the three last above-named cities are hereinafter called the "municipalities").	1.5847	
City of Los Angeles.....	17.5554	
Southern California Edison Company, Ltd.....	7.0503	
The Nevada-California Electric Corporation.....	.8813	
	100.0000	

The United States reserves such electrical energy as may be desired by it at a maximum demand not to exceed 20,000 kilowatts. Beginning on June 1, 1941, the energy actually taken by the United States under this reservation shall be deducted equally out of the respective allocations of the City and the Company. Such energy shall be delivered to the United States at the Power Plant, and shall be measured at the point of delivery by meters furnished and installed by the United States. Credits to the City and Company for such energy will be given on monthly bills. The United States will use such energy only for its own use or for resale in construction or operat-

ing camps maintained by the United States, or for any purpose in the area bounded by the east line of Range 66 East, the south line of Township 20 South, the east line of Range 62 East, the south line of Township 23 South, M. D. M., Nevada; and the south line of Township 29 North and the east line of Range 21 West, G. & S. R. M. Arizona. The energy used by the United States for the construction and operation and maintenance of the dam and appurtenant works, exclusive of Boulder City, will not be included in the foregoing energy but shall be furnished from the station service system without charge and shall be classed as station losses and not considered in the amounts of firm or secondary energy in the promulgating of rates and charges.

(b) Procedure respecting States' allocations

Should either of the States not take its full allocation prior to April 26, 1950, the other may then contract and give notice of withdrawal of the energy not so taken up to 3.9169 per centum of the total firm energy, provided that the combined amount used by the two States shall not, at any time, exceed 35.2518 per centum of such total firm energy.

The District shall have the right to use for pumping Colorado River water into and in its aqueduct, so much of the firm energy allocated to the States, the City, the Company, and The Nevada-California Electric Corporation as may not be in use by them. So much of the energy allocated to the States not contracted for by them and not in use by them or the District, shall be taken and paid for, fifty-five percent (55%) by the City, forty percent (40%) by the Company, and five percent (5%) by The Nevada-California Electric Corporation. Such energy shall be released to the District by the City, Company, and The Nevada-California Electric Corporation, respectively, in the ratio of the above stated percentages (unless they agree upon different ratios), subject to the following provisions:

(i) If the District shall make a firm contract with the United States for the then remaining balance of the period ending May 31, 1987, for part or all of such unused States' energy (subject to the first right of the States thereto) such contract shall be made effective upon two years' written notice to the Secretary, and compensation to the allottees affected for main transmission-line property rendered idle;

(ii) If the District does not so make a firm contract for such energy, then energy allocated to the States but not in use by them, shall be released to the District upon not less than fifteen (15) months' written notice to the Secretary and at such compensation as the District and the allottees affected may agree upon, to cover cost and overhead of replacing energy which otherwise would have been received at the Pacific Coast end of the main transmission lines by the allottees affected. Such cost shall in-

clude interest (at the rate of cost of money to the allottee affected) on investment in, and depreciation and operation and maintenance of, the plant capacity while required for the generation of such substitute energy; and also appropriate allowance for similar interest on and maintenance and depreciation of plant capacity rendered idle because of cessation of generation of such substitute energy until such time as such plant capacity would otherwise have been installed by the allottees affected for their own requirements. If the District and the allottees affected fail to agree on the amount of such compensation, such energy shall nevertheless be released to the District, and the disagreement shall be determined by arbitration. Pending such determination, energy so released shall be paid for by the District at the rate for firm energy but the determination of compensation by arbitration shall not be controlled by such rate.

(iii) If, due to temporary deficiency in secondary energy regularly used by the District, substitute energy is requested by the District in excess of the energy made available under the foregoing subparagraph (ii) the City, the Company, and/or The Nevada-California Electric Corporation may release so much energy as may be practicable on the same terms as provided in such subparagraph.

(iv) In the event the District shall fail for any reason to use all or any of the firm energy herein allotted to it, then the Secretary shall dispose of such unused energy until required by the District, crediting on the District's obligation the proceeds of such disposition as received; provided, however, that no disposition of such firm energy shall be made by the Secretary without first giving to the City, the Company and The Nevada-California Electric Corporation the opportunity to contract on equal terms and conditions, to be prescribed by the Secretary, for such energy, in the same proportion, and subject to the same rights with respect to proportions thereof not taken by others, as in the case of secondary energy. The rights of the City, the Company and The Nevada-California Electric Corporation so to contract shall be deemed to have been waived unless, within 30 days after offer by the Secretary of such opportunity, such offer is accepted.

Except as hereinabove provided in this article, each of the States of Arizona and Nevada may at any time prior to May 31, 1987, enter into a contract or contracts with the United States which shall entitle it to all or any part of the energy allocated to it for use within such State. Such contract or contracts shall continue in force until May 31, 1987, but shall obligate the United States to deliver energy, and the State to take and/or pay for the same, only in accordance with

notices of withdrawal of energy and notices of relinquishment of energy given as hereinafter provided. The quantities of electrical energy specified in contracts entered into by the State of Nevada prior to the promulgation of these Regulations shall be deemed to have been taken pursuant to notices of withdrawal duly given, the effective dates of which were the dates of such contracts respectively.

After execution of any such contract, if the State shall desire to take energy thereunder, it may, at any time or times prior to May 31, 1987, file with the Secretary and the allottees involved notices of withdrawal of energy in form to be prescribed by the Secretary, each of which notices shall state (1) the quantity of energy to be taken annually thereunder, in kilowatt hours, (2) the maximum demand in horsepower to be required, and (3) an effective date, not earlier than the expiration of a period conforming to the following schedule, to run from the date when such notice from the State has been received by both the Secretary and all the allottees involved:

Schedule of notices of withdrawal of energy

A notice which together with all prior notices given by the same State within 12 consecutive months		Period of Notice
Exceeds in maximum demand	And does not exceed in maximum demand	
0 horsepower.....	5,000 horsepower.....	6 months.
5,000 horsepower.....	12,500 horsepower.....	12 months.
12,500 horsepower.....	20,000 horsepower.....	18 months.
20,000 horsepower.....	40,000 horsepower.....	24 months.
40,000 horsepower.....		36 months.

Provided, that any such notice may, within thirty days after receipt thereof by the Secretary and at the option of the United States, be declared to be of no force or effect if at the time it is given the State is in default under its contract or contracts for energy. If after giving a notice of withdrawal of energy, the State shall desire delivery of such energy or any part thereof under said notice in advance of, or later than, the expiration of the period of notice hereinabove required, the required period may be adjusted, with the written consent of the allottees affected, filed with the Director. All energy taken by the State shall first be released by the City, the Company, and The Nevada-California Electric Corporation severally in the proportion of their respective obligations with reference thereto. In the event that energy required by the State shall be in quantity exceeding that which the above allottees are obligated so to release, such excess, to the extent that energy allocated to the State may be in use by the District, shall be released by the District. Energy may be released temporarily or permanently in different proportions pursuant to agreement between the State and the allottees involved, which energy upon

relinquishment shall revert to the allottees in the proportion in which it was released.

Except as hereinafter otherwise provided, the obligation of the State to take and/or pay for energy, may be terminated in whole or in part upon the effective date of a "notice of relinquishment," given as hereinafter provided, and the obligation of the various allottees to take and/or pay for the same, shall in such case be reinstated as of such effective date. Each notice of relinquishment shall be filed with the Secretary and the allottees involved in form to be prescribed by the Secretary, in accordance with the following schedule, and shall state (1) the notice or notices of withdrawal whereunder the State became obligated with respect to the energy it proposes to relinquish, and shall be given only after the effective date or dates of the notice or notices of withdrawal to which it relates; (2) the quantity of energy annually in kilowatt-hours relinquished; (3) the maximum demand in horsepower relinquished, and (4) an effective date, not earlier than the expiration of a period conforming to such schedule to run from the date when such notice from the State has been received by both the Secretary and all the allottees involved:

Schedule of notices of relinquishment

A notice of relinquishment which together with all prior notices of relinquishment given by the same State within 12 consecutive months		Period of notice
Exceeds in maximum demand	And does not exceed in maximum demand	
0 horsepower.....	5,000 horsepower.....	6 months.
5,000 horsepower.....	12,500 horsepower.....	12 months.
12,500 horsepower.....	20,000 horsepower.....	18 months.
20,000 horsepower.....	40,000 horsepower.....	24 months.
40,000 horsepower.....		36 months.

After a State gives a notice of relinquishment of energy, the effective date thereof may be advanced or delayed at the request of the State, with the written consent of the allottees involved.

Relinquishment of energy shall be without prejudice to the right, from time to time, again to withdraw energy and again to relinquish the same in the manner hereinabove provided.

Whenever the amount of electrical energy in use by the said States is in excess of five thousand (5,000) horsepower of maximum demand, the allottees affected shall be compensated for property rendered idle by the use of such excess. If the States and the allottees affected fail to agree on such compensation, the disagreement shall be determined by arbitration.

(c) *Secondary Energy*

The District shall have the first right to the use of any or all secondary energy for pumping Colorado River water into and in its aqueduct.

The right to use any secondary energy which is unused by the District shall be as follows:

<i>Allottee</i>	<i>Percentage</i>
City of Los Angeles.....	55.00
Southern California Edison Company Ltd.....	40.00
Nevada-California Electric Corp.....	5.00

Any secondary energy not used by any of the above shall be available, for the time being, to any others of the above in the ratio of their above respective percentages. If any secondary energy is available after the requirements of the above allottees are satisfied, the United States reserves the right for the time being to take, use, or dispose of such energy as it sees fit.

5. COMPONENTS OF CHARGES

The charges for electrical energy generated at the Boulder power plant shall consist of two components; (a) the energy charge, and (b) the generating charge.

6. BASIS OF ENERGY RATES

The energy rates, subject to the other articles of these Regulations, shall be such as will yield for the 50-year period ending May 31, 1987, revenues which, together with revenues from the sale of stored water, will be sufficient, but not more than sufficient, to provide the following amounts annually during said 50-year period:

(a) The cost of operation and maintenance of the project, less miscellaneous revenues, excluding the operation and maintenance costs of those parts of the project operated by the Agents.

(b) The annuity required, taking into account interest thereon, for the purpose of meeting the cost of replacements of parts of the dam and appurtenant works requiring replacement during said 50-year period. For the purpose of determining the costs to be charged against the amount accruing from the above annuity the replacement of any item or part, the cost of which is \$5,000 or more at the time of replacement, shall be charged against such amount but if such cost is less than \$5,000 it shall be charged to maintenance.

(c) The sum of \$300,000 annually to each of the States of Arizona and Nevada.

(d) The sum of \$500,000 annually to the Colorado River Development Fund.

(e) The annuity required to repay to the Treasury of the United States, with interest, the advances, less revenues accruing during the construction period from the sale of electrical energy under interim contracts, made to the Colorado River Dam

Fund prior to June 1, 1937, within 50 years from that date (excluding \$25,000,000 for flood control and the costs of generating machinery and equipment), and the annuities required to repay to the Treasury of the United States, with interest, any additional advances made after June 1, 1937 (excluding the costs of generating machinery and equipment plus interest), on the basis of repayment with interest of such advances in a 50-year period beginning June 1 immediately following the year of operation in which the advances were made. The amounts to be amortized by the rates will be taken as the amounts shown by the books of account of the Bureau of Reclamation, after reconciliation with accounts of the Treasury of the United States.

7. UNIFORMITY OF ENERGY RATES

Rates for firm energy, as originally determined and as subsequently revised, shall be uniform for all allottees of firm energy. Rates for secondary energy, as originally determined and as subsequently revised, shall be uniform for all users of secondary energy.

8. RELATIONSHIP BETWEEN RATES FOR FIRM AND SECONDARY ENERGY

The secondary energy rate, for any period, shall be a rate per kilowatt-hour which is the average of (1) a rate which bears the same ratio to the firm energy rate, for the same period, as 0.3 bears to 1.1, and (2) a rate which is 0.8 mill less than the rate for firm energy: *Provided, however,* That as to both firm and secondary energy the rates shall be computed to the nearest thousandth of a mill, and the rate for secondary energy shall not be less than 0.2 mill per kilowatt-hour. (Expressed by formula: Secondary energy rate = Firm energy rate times 0.6363636 . . . , minus 0.4; but not less than 0.2 mill per kilowatt-hour.

9. FIRM ENERGY RATE

Subject to revision and adjustment at the times, to the extent and in the manner hereinafter set out, the rate per kilowatt hour for firm energy for the period from June 1, 1937, to May 31, 1987, shall be 1.163 mills.

10. SECONDARY ENERGY RATE

Subject to revision and adjustment at the times, to the extent and in the manner hereinafter set out, the rate per kilowatt-hour for secondary energy for the period from June 1, 1937, to May 31, 1987, shall be 0.340 mill. Energy taken by any allottee, which is entitled to secondary energy, in excess of its obligation for firm energy shall be at the secondary rate. Energy taken by any allottee, which is not

entitled to secondary energy, in excess of its obligation for firm energy but within its allocation thereof shall be at the secondary rate.

11. CREDITS TO ALLOTTEES NOT TAKING THEIR FULL FIRM ENERGY OBLIGATIONS

Any allottee not taking its full minimum annual obligation of firm energy in any year of operation will receive as credit toward such obligation, out of any revenues received from energy taken in the same year of operation by other allottees in excess of their firm energy allocations, an amount not to exceed the product of the number of kilowatt-hours of firm energy not taken and, in the case of the District, not resold for the District's account, times the current secondary energy rate. The credit to any such allottee shall be in the proportion that the kilowatt-hours of firm energy not taken by it and, in the case of the District, not resold for the District's account, bears to the total kilowatt-hours of firm energy not taken by all the allottees entitled to credit hereunder and not resold for the District's account.

12. CREDITS TO ADJUST PAYMENTS OCCASIONED BY ENERGY RATE REDUCTION

Adjustments will be made, by credits, and not by cash refunds, with any contractor who shall enter into a contract under the provisions of the Adjustment Act and these regulations, for payments made for energy billed for the period prior to the effective date of such contract, as amount to overpayments on the basis of energy rates herein promulgated and the number of kilowatt-hours previously billed. The credits will be applied as evenly as practicable on energy bills over the period commencing June 1, 1941, and ending May 31, 1950, or over the remaining period of the contract involved, whichever period is the shorter. Such overpayments shall not bear interest. The total amount of such credits given to all contractors in any year of operation shall not exceed the revenues which otherwise would have accrued in such year in excess of the amounts necessary to meet the current and accrued payments and transfers specified in Article 6 (a), (b), (c), and (d) hereof.

13. PAYMENTS TO STATES AND TRANSFERS TO COLORADO RIVER DEVELOPMENT FUND

Payments to the States of Arizona and Nevada and transfers to the Colorado River Development Fund for amounts due under the Adjustment Act for the period from June 1, 1937, to the effective date of the Adjustment Act will be made from revenues received after said effective date after providing for the operation and maintenance costs,

and the annuity for replacements for current year of operation. The balance of such revenues remaining will be paid to each of the States of Arizona and Nevada in the ratio that \$300,000 bears to \$1,100,000 and transfers to said Fund will be made in the ratio that \$500,000 bears to \$1,100,000 until the balance due for said period from June 1, 1937, to the effective date of the Adjustment Act is extinguished without interest.

14. ADJUSTMENT OF ENERGY RATES

Energy rates, both firm and secondary, will be adjusted either upward or downward by the Secretary at the intervals and for the purposes stated below:

(a) As of June 1, 1947 and thereafter at intervals of five (5) years, to reflect, subject to the limitations hereinafter contained, over the remaining portion of the 50-year period ending May 31, 1987, proper correction for the amounts by which revenues actually accrued and the revenues then estimated by the Secretary to accrue, over the said remaining portion of the said 50-year period, from the sale of energy and stored water, have varied from the estimates used for the last preceding determination or revision of energy rates. Such variations as may be occasioned by default in the performance of a contract to purchase firm energy shall not result in an increase in energy rates charged other contractors. Prior to any such revision the Secretary will give all allottees an opportunity to be heard.

In the event of a deficiency in the amount of defined firm energy due to shortage of water available for the generation of firm energy, reduction in the amount to be amortized within the period ending May 31, 1987, will be made, as of June 1, 1947, or as of any subsequent adjustment date under this Article 14 (a), in the manner and to the extent provided in this article 14 (a) if such deficiency exceeds:

(i) Thirty percent (30%) in any one year prior to June 1, 1947; or in the case of any such subsequent adjustment date, thirty percent (30%) in any one year since the date of the last preceding adjustment date; or

(ii) Twenty-five percent (25%) in the entire period prior to June 1, 1947; or in the case of any such subsequent adjustment date, twenty-five percent (25%) in the five-year period preceding such adjustment date; or

(iii) In the aggregate cumulated from June 1, 1937, three percent (3%) of the total defined firm energy for the 50-year period ending May 31, 1987; that is, three percent (3%) of 205,769,000,000 kw-hr., or 6,173,070,000 kw-hr.

As of June 1, 1947, or as of any such subsequent adjustment date, the Secretary shall determine in kilowatt-hours the total of any

excesses of deficiencies of single years under (i) and of any excess of deficiency of the entire interval under (ii). Whichever quantity of kilowatt-hours of excess deficiency is the larger shall be multiplied by the rate for firm energy, in effect for the period during which the deficiency occurred. The product of such multiplication shall be subtracted from the total amount remaining, as of the date of the adjustment, to be amortized within the period ending May 31, 1987.

If as of any such date of adjustment there is an excess of deficiency under (iii), as determined by the Secretary, then the kilowatt-hours of such excess deficiency, to the extent they in turn exceed any excesses of kilowatt-hours theretofore determined under (i), (ii) or (iii) with regard to which there has already been a reduction in the amount to be amortized within the period ending May 31, 1987, in a like manner will be multiplied by the firm energy rate effective when the excess deficiencies occurred and the product shall be subtracted from the total amount remaining, as of the date of the adjustment, to be amortized within the period ending May 31, 1987.

Estimated future revenues from the sale of secondary energy for the period ending May 31, 1987, will be determined by first subtracting from 40,000,000,000 kilowatt-hours the kilowatt-hours of energy which had been used at secondary rates up to the date of the adjustment, excluding energy the revenues from which had been credited to the allottees as offsetting credits for unused firm energy obligations. The answer obtained will be divided by the number of years remaining in the period. The amount thus secured will be taken as the secondary energy considered as revenue producing in each remaining year of the period unless such amount exceeds the transmission line capacity available for transmission of secondary energy. In the latter event the secondary energy considered as revenue producing will be taken as that part of such amount for which transmission line capacity is available.

In the event that, at the time of any rate adjustment hereunder, the entire said amount of secondary energy (40,000,000,000 kwh.) shall have been used, an estimate of secondary energy reasonably anticipated to be used during the remainder of the period ending May 31, 1987, shall be made by the Secretary, and the anticipated revenues therefrom shall be considered in such rate adjustment. The estimate so made shall be revised and revenues from use of such additional secondary energy shall be considered in all subsequent rate adjustments.

(b) As of June 1, 1942, and thereafter as of June 1 of each succeeding year, to make proper correction for variations between previous estimates and actual costs of operation and maintenance of that part of the project operated directly by the United States for past years and to provide for the operation and maintenance costs of such part

of the project as estimated by the Secretary for the year of operation then beginning. The cost estimated for the year of operation then beginning less any extraordinary expenses estimated to be incurred in that year shall be considered for rate making purposes as the estimated cost for each remaining year of the 50-year period. Before making such estimate, the Secretary will give all allottees an opportunity to present their views. Such estimate may be made on the advice and recommendations of such expert or experts as the Secretary may select.

(c) As of June 1, 1942, and thereafter as of June 1 of each succeeding year, properly to reflect variations from previous estimates of the requirement for an annuity for replacements. Unless and until experience has proven otherwise the proper amount for this annuity will be taken as one and one-quarter percent (1.25%) of the cost of those features of the dam and appurtenant works, exclusive of penstocks, requiring replacement, the cost of which as of June 1, 1940, will be taken as \$6,127,139. Unless and until experience has proven otherwise, the annuity for the penstocks will be taken as \$6,640.

(d) As of June 1, 1942, and as of each June 1 following a year of operation in which additional advances have been made for the dam and appurtenant works, to provide until May 31, 1987, the annuity required to repay, with interest, such additional advances, on the basis of repayment with interest of such advances in a 50-year period beginning June 1 following the date of such advances. Advances for costs incidental but additional to the installation of additional generating machinery and equipment will be considered as additional advances for the dam and appurtenant works and amortized through the energy rates.

(e) As of June 1, 1987, adjustments shall be made, through refunds or collections as the Secretary may find necessary to achieve consummation of the principle that the revenues shall be sufficient but not more than sufficient to provide the amounts set forth in Article 6 of these regulations, as modified by the provisions of Articles 14 (a) and 15 (c) hereof.

15. AMORTIZATION PERIODS

(a) *Investment prior to June 1, 1937.* The amortization period for advances to the Colorado River Dam Fund for the dam and appurtenant works made prior to June 1, 1937, will be the 50-year period ending May 31, 1987.

(b) *Investment subsequent to June 1, 1937.* The amortization period for advances to the Colorado River Dam Fund for the dam and appurtenant works made subsequent to June 1, 1937, will be the 50-year period beginning June 1, immediately following the year of operation in which the funds were advanced.

(c) *Act of God, etc.* In the event that deficiency in revenues from firm energy shall be caused by Act of God or of the public enemy or any major catastrophe or other unforeseen or unavoidable cause, such deficiency shall not be reflected in any revision or adjustment of the energy charge but the amount of such deficiency for the purpose of computing rates and charges shall be deducted from the amount, otherwise to be amortized within the period ending May 31, 1987.

16. DIVISION OF GENERATING MACHINERY AND EQUIPMENT

For the purpose of determining the generating charges to be paid by the various allottees, the generating machinery and equipment shall be divided into sections, based on the use made of the machinery in the generation of electrical energy. The present generating charges shall be based upon the following sections:

(a) *Main Generating Facilities:*

Section G-1—Units N-1, N-2, N-3, and N-4.—This section shall include the main generating units designated as above, and appurtenant equipment and facilities, including the main butterfly valves. In general, this includes all equipment and appurtenances shown under F. P. C. Account Nos. 323, 324, and 325 for units N-1 to N-4.

Section G-2—Units N-5 and N-6.—(Same as section G-1, except as to units designated.)

Section G-3—Units A-1 and A-2.—(Same as section G-1, except as to units designated.)

Section G-4—Units A-6 and A-7.—(Same as section G-1, except as to units designated.)

Section G-5—Unit A-8.—(Same as section G-1, except as to units designated.)

Section G-6—Unit A-5.—(Same as section G-1, except as to units designated.)

(b) *Transforming and Switching Facilities:*

Section T-1-A—Banks N-1-N-2 and N-3-N-4.—This section shall include the transforming, switching, and appurtenant equipment associated with the designated banks or units. This section includes the transformers and their appurtenant equipment up to the point of attachment, but exclusive of the generator voltage bus. In general, this includes all the equipment costs shown in F. P. C. Account No. 343 for units N-1 to N-4.

Section T-1-B.1 (Banks X and Y).—This section shall include the transforming, switching, and appurtenant equipment associated with the designated transformer banks. This section shall include the 16.5 kv. cable from point of attachment to the terminals of the oil circuit breakers located at elevation 643.5

and connecting to bank X with its appurtenant facilities; and shall also include the reactor assembly from the point of attachment to the 16.5 kv. transfer bus, the 16.5 kv. oil circuit breaker and cable connecting to bank Y with its appurtenant equipment. This section shall extend on the high-voltage side to the point of attachment to the Citizens Utilities circuit.

Section T-1-B.2 (Banks X and Y).—This section shall include the high-voltage facilities from the point of attachment to the Citizens Utilities circuit to the point of attachment of the high-voltage circuit to the State of Nevada switchyard structure.

Section T-1-B.3—State of Nevada switchyard.—This section shall include the high-voltage facilities and appurtenant equipment used by the State of Nevada.

Section T-1-B.5—California-Pacific Utilities Company switchyard.—This section includes the high-voltage facilities and appurtenant equipment used exclusively by the California Pacific Utilities Company.

Section T-1-B.6—Citizens Utilities Company switchyard.—This section shall include the high-voltage facilities and appurtenant equipment used exclusively by the Citizens Utilities Company.

Section T-1-C—Southern Nevada Power Company switchyard.—This section shall include the high-voltage facilities and appurtenant equipment used by the Southern Nevada Power Company.

Section T-1-D—Boulder City switchyard.—This section shall include the high-voltage facilities and appurtenant equipment used by Boulder City.

Section T-2—Banks N-5-N-6.—This section shall include the transforming, switching, and appurtenant equipment associated with the designated banks or units. This section includes the transformers and their appurtenant equipment up to the point of attachment, but exclusive of the generator voltage bus.

Section T-3—Banks A-1-A-2.—(Same as section T-2, except as to units designated.)

Section T-4—Banks A-6-A-7.—(Same as section T-2, except as to units designated.)

Section T-5—Bank A-8.—(Same as section T-2, except as to units designated.)

Section T-6—Bank A-5.—(Same as section T-2, except as to units designated.)

(c) *Common Facilities:*

Section C. F. common facilities.—This section shall include all the common facilities.

17. COMPONENTS OF GENERATING CHARGES

The generating charge for each contractor shall consist of the following components:

(a) *Amortization component.*—This component shall be such as will yield prior to June 1, 1987, revenues which will be sufficient to provide the annuities required prior to said date in the amortization of the cost of generating machinery and equipment (including interest prior to commencement of the amortization period involved), with interest, during the amortization periods provided in this Article 17 (a). The amounts to be amortized by generating charges will be the construction cost of generating machinery and equipment (including interest prior to commencement of the amortization period involved), as recorded on the books of accounts of the Bureau of Reclamation. The amortization period for costs of generating machinery and equipment paid out of advances from the Treasury to the Colorado River Dam Fund prior to June 1, 1937, shall be the 50-year period ending May 31, 1987. The amortization period for costs of generating machinery and equipment paid out of advances from the Treasury to the Colorado River Dam Fund subsequent to June 1, 1937, shall be the 50-year period beginning with the first day of the month next following the date on which such machinery and equipment is placed in service. Parts of generating machinery and equipment not fully installed at the time such machinery and equipment is placed in operation shall have the same amortization period as the original equipment with which they are associated. Any future betterment or addition to generating machinery and equipment, the cost of which is in excess of \$5,000, shall have an amortization period of 50 years, beginning with the first day of the month immediately following completion of installation. Any betterment or addition, the cost of which is less than \$5,000, will be charged as maintenance.

(b) *Replacement annuity component.*—Unless and until experience has proven otherwise, as determined by the Secretary, the proper amount for this annuity shall be taken as 1.25 percent of the total cost of such generating machinery and equipment as is replaceable within the 50-year period as of June 1 of the particular year of operation and such annuity shall be paid over a period concurrent with the amortization payments. The replacement of any item or part of an 82,500 kv. a. generating unit and appurtenant equipment, and any item or part other than an item or part for a 40,000 kv. a. generating unit and appurtenant equipment, the cost of which is \$5,000 or more at the time of replacement, shall be charged as replacement. Any item or part,

the replacement cost of which is less than \$5,000 at the time of replacement, shall be charged to maintenance. For 40,000 kv. a. generating units and appurtenant equipment the division in this respect shall be \$3,000.

(c) *Operation and maintenance component.*—This component shall be based upon the costs of operation and maintenance of that portion of the Boulder Power Plant operated and maintained by the Operating Agents, in accordance with the provisions of the Agency contract.

18. APPORTIONMENT OF GENERATING CHARGES

(a) *Common facilities.* (I) For the period to June 1, 1942, amortization charges shall be apportioned to each main generating unit actually installed at the rate of \$550.00 per month. After June 1, 1942, the amortization charges for common facilities shall be apportioned equally among the main generating units actually installed, and such charges shall include the amortization over the balance of the period ending May 31, 1987, of that portion of the installments that would have been required and have accrued but have not been paid in full as a result of the limited fixed monthly payments specified above. In the apportionment of charges an 82,500 kv. a. unit shall be considered as one unit and a 40,000 kv. a. unit shall be considered as a half unit.

(II) Replacement charges for common facilities shall be apportioned on the same basis as the amortization charges of these facilities except that the charges for the period prior to June 1, 1942, shall be at the rate of \$180.00 per month for each main generating unit actually installed. After June 1, 1942, the replacement charges for common facilities shall include an additional annuity which will provide the same accumulation during the balance of the period as would have been provided had the charges been paid in full and not limited by the fixed monthly payments specified above.

(b) *Amortization component.* Unless otherwise agreed to by the allottees affected:

(1) a direct charge to cover the entire cost of amortization, together with a proper share of the amortization cost of common facilities as provided in (a) (I) above, shall be paid by an allottee for the machinery and equipment installed for the sole use of such allottee;

(2) the amortization charges, including a proper share of the amortization cost of common facilities as provided in (a) (I) above, for a section or sections of machinery and equipment used jointly will be apportioned on the basis of energy taken, both firm and secondary, with the minimum annual obligation of each allottee as the minimum considered;

(3) for the purposes of apportioning charges under this Article 18 (b), (c), and (d), Sections G-1 and G-3 shall be considered as one section.

(c) *Replacement annuity component.* The apportionment of charges for replacements for the generating machinery and equipment, including in the case of generating units a proper share of the replacement charges for common facilities as provided in (a) (II) above, shall be on the same basis as apportionment of the amortization component whether as described under (b) above or as otherwise agreed to by the allottees affected.

(d) *Operation and maintenance component.* The apportionment of charges for the operation and maintenance of generating machinery and equipment operated by the Agents, unless otherwise agreed to by the allottees affected, shall be on the same basis as apportionment of the amortization component described under (b) above.

(e) *Agreements of allottees regarding generating charges, etc.* Agreements between allottees regarding apportionment of generating charges shall be in writing and shall be filed with the Secretary; and any such agreements filed with the Secretary after Dec. 31, 1942, shall be only prospective in effect, and any such agreement shall be effective unless within sixty days after being filed with the Secretary said agreement is determined and announced by the Secretary to be detrimental to the interests of the United States, in which event such agreement shall be of no force or effect with regard to apportionment of generating charges.

Nothing in these regulations shall modify or affect the relative rights and obligations of The Nevada-California Electric Corporation and the City, as successors in interest of the Southern Sierras Power Company and Los Angeles Gas and Electric Corporation, respectively, with regard to generating charges in connection with Sections G-5, T-5, and C. F.

19. ADJUSTMENT OF GENERATING CHARGES

As of June 1 of each year the Secretary will furnish each allottee with a statement of the estimated generating charges for each allottee for the year of operation ending May 31 of the next succeeding calendar year. For the preparation of such estimate the agents shall each furnish not later than May 1 their estimates of cost of operation and maintenance for the coming year of operation. Monthly bills will be rendered on the basis of one-twelfth ($\frac{1}{12}$) each month of the estimate of generating charges contained in such statement subject to adjustment to actual costs following the close of each year of operation.

20. USE OF UNITS OTHERWISE THAN IN REGULAR ASSIGNMENT

The use by any allottee of equipment upon which another allottee is obligated to pay the charges will be permitted upon such terms as may be agreed to by the parties affected, but no such use shall modify the total charges to be made by the United States.

21. ADJUSTMENT OF GENERATING CHARGES FOR THE PERIOD PRIOR TO JUNE 1, 1941

Adjustments will be made by means of collections or credits for the generating charges for the period prior to June 1, 1941, as expeditiously as circumstances will permit. These adjustments shall include:

(a) Payment, if required, by each allottee of sufficient money for amortization of cost of generating machinery and equipment to provide a total amount equal to that which would have accrued with interest on the date of collection from annual payments for this purpose if the Adjustment Act and these regulations had been in effect on June 1, 1937;

(b) Payment, if required, from each allottee of sufficient money to provide a total amount for replacements equal to that which would have accrued with interest on the date of collection from annual payments for this purpose if the Adjustment Act and these regulations had been in effect on June 1, 1937;

(c) Adjustments by collections or credits to properly reflect the distribution between the various allottees of operation and maintenance costs as if the Adjustment Act and these regulations had been in effect on June 1, 1937; and

(d) With each allottee entering into a contract modifying its existing contract to conform to the Adjustment Act, an adjustment shall be made by credits against charges provided for in such contract, and not by cash refunds, as follows:

(1) To each allottee which was, by the existing contracts, designated as a generating agent, there shall be allowed the cost incurred on or after June 1, 1937, and prior to the effective date of the agency contract in generating electrical energy for itself and for other allottees, including compensation paid by it to the United States for the use of machinery and equipment furnished and installed by the United States (less any amount of said cost which may have been paid to said generating agent by the United States pursuant to Article 12 of the existing contract for lease of power privilege);

(2) To each allottee which was not, by the said existing contracts, designated as a generating agent, there shall be allowed all amounts paid by it to the United States prior to the effective

date of the agency contract for credit to the lessees under the said contract for lease of power privilege (other than advance payments for power-plant machinery and equipment) on account of use of the leased equipment and on account of maintenance of said equipment, including repairs to and replacement thereof.

22. ADVANCE PAYMENTS FOR GENERATING MACHINERY AND EQUIPMENT

Any advance payments made at any time by any allottee for repayment of costs of generating machinery and equipment over and above that currently required will be credited with proper allowance for interest to such allottee's obligation to repay such costs with interest and/or such allottee's proportionate share of annuities for replacements of machinery and equipment.

23. ACT OF GOD, DEFAULTS, ETC.

In the event that delivery of energy to any contractor or contractors shall be interrupted by Act of God or of the public enemy or other unforeseen or unavoidable cause, affecting the generating machinery and equipment used for the service of such contractor or contractors, the amount otherwise payable during such period for amortization of such machinery and equipment shall be deducted from the total amount to be so amortized within the period fixed for amortization thereof. Default in the performance of any contract for firm energy shall not result in an increase of the amortization and replacement annuity components of the generating charges against other contractors.

24. ACCOUNTING BY OPERATING AGENTS

Accounts of costs incurred by the Operating Agents under the Agency Contract shall be kept in accordance with the "Uniform System of Accounts Prescribed for Public Utilities and Licensees subject to the Provisions of the Federal Power Act" as adopted by the Federal Power Commission by Order Number 42 on June 16, 1936, as the same may have been or from time to time may be amended; provided, however, that if there shall be any inconsistency between said uniform system of accounts and any specific provision of the Agency Contract or of these Regulations, such Agency Contract and these Regulations shall control; and provided further, that in the event of uncertainty as to the application of any of the provisions of said uniform system of accounts or of said Agency Contract or of these Regulations to the matter of accounting by the Operating Agents for costs incurred, such uncertainty shall be referred to and determined by the Secretary.

25. ARBITRATION OF DISPUTES

Whenever a controversy arises between one allottee and another and these regulations provide that the matter shall be determined by arbitration, each disputant shall name one arbitrator and these two shall name a third. If either disputant has notified the other that arbitration is demanded and that it has named an arbitrator, and if thereafter the other disputant fails to name an arbitrator for fifteen days, the Secretary, if requested by either disputant, shall name such arbitrator, who shall proceed as though named by the disputant. The two arbitrators so named shall meet within five days after appointment of the second, and name the third. If they fail to do so, the Secretary will, on request by either disputant or arbitrator, name the third. If a controversy involves more than two allottees, three arbitrators shall be named in the manner agreed to at the time by the disputants, or if they are unable to agree, as determined by the Secretary. A decision by any two of the three arbitrators shall be binding on the disputants.

26. APPLICATION OF REGULATIONS

In accordance with Section 11 of the Adjustment Act these regulations shall apply to any contractor for energy from the project only if it executes a contract, pursuant to the Adjustment Act, modifying its existing contract. Prior regulations promulgated under the Project Act shall be repealed as to any contractor executing a contract pursuant to the Adjustment Act, as of the effective date of said contract.

27. FUTURE REGULATIONS

The Secretary will from time to time promulgate such additional or amendatory regulations as may be required for the administration of the project in accordance with the provisions of the Project Act, the Adjustment Act and contracts executed pursuant thereto; provided, however, that no right under any contract then existing shall be impaired or obligation thereunder be extended thereby. Opportunity to present their views shall be afforded such contractors by the Secretary prior to modification or repeal of any of these regulations or promulgation of additional regulations, except that if in the judgment of the Secretary exigencies require prompt action he may act without affording such opportunity, provided that within thirty days of the date of such action he affords to such contractors an opportunity for a hearing if requested in connection with such action.

Appendix 902

**POWER CONTRACTS:
AGENCY CONTRACT, MAY 29, 1941**

With Exhibits A, B, and 2 thereof

Symbol Ir-1333

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

CONTRACT FOR THE OPERATION OF BOULDER POWER PLANT

THE UNITED STATES OF AMERICA AND THE CITY OF LOS ANGELES,
AND ITS DEPARTMENT OF WATER AND POWER, AND SOUTHERN
CALIFORNIA EDISON COMPANY, LTD.

Article

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Article

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1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated as the Boulder Canyon Project Act, hereinafter referred to as the "Project Act", and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated as the Boulder Canyon Project Adjustment Act, hereinafter referred to as the

"Adjustment Act", between THE UNITED STATES OF AMERICA, hereinafter referred to as the "United States", acting for this purpose by Harold L. Ickes, Secretary of the Interior, hereinafter referred to as the "Secretary", and severally, THE CITY OF LOS ANGELES, a municipal corporation, and its DEPARTMENT OF WATER AND POWER (said Department acting herein in the name of the City, but as principal in its own behalf as well as in behalf of the City, the term "City" as used herein being deemed to include both The City of Los Angeles and its said Department of Water and Power), and SOUTHERN CALIFORNIA EDISON COMPANY LTD., a private corporation, hereinafter referred to as "Edison Company", both of said corporations being organized and existing under the laws of the State of California;

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege", dated April 26, 1930, with, severally, the City and Edison Company, which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which said Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease"; and

3. Whereas, by the terms of the Lease, the United States agreed that it would, at its own cost, construct in the main stream of the Colorado River at Black Canyon, a dam, creating thereby at the date of completion, a storage reservoir having a maximum water surface elevation at about 1,222 feet above sea level (U. S. Geological Survey datum) of a capacity of about 29,500,000 acre-feet, and that it would also construct in connection therewith outlet works, pressure tunnels, penstocks, power plant building, and furnish and install generating, transforming, and high-voltage switching equipment for the generation of the electrical energy allocated to the various allottees respectively, as stated in the Lease; and

4. Whereas, under the Lease, the United States leased to the City for fifty (50) years from the date at which electrical energy would be ready for delivery to the City, as announced by the Secretary in accordance with Article 11 of the Lease, such power plant units and corresponding plant facilities and incidental structures at Boulder Dam as might be necessary to generate the electrical energy allocated to the City and electrical energy for those allottees for which the

City was therein designated the generating agency, together with the right to generate such electrical energy; and leased to Edison Company such power plant units and corresponding plant facilities and incidental structures at Boulder Dam as might be necessary to generate the electrical energy allocated to it and electrical energy for those allottees for which Edison Company was therein designated the generating agency, together with the right to generate such electrical energy, for a period beginning with the date at which the first of such power plant units would be ready for operation and water would be available therefor as announced by the Secretary and ending at a time fifty (50) years after the date at which electrical energy would be ready for delivery to the City as provided therein; and

5. Whereas, under the Lease, the generation of electrical energy allocated to The Nevada-California Electric Corporation (successor in interest to The Southern Sierras Power Company) is required to be effected by Edison Company (The Nevada-California Electric Corporation and Edison Company being hereinafter collectively referred to as the "Companies"), and under the "Contract for Lease of Power Privilege," dated April 26, 1930, as amended by the contracts dated May 28, 1930, and September 23, 1931, the generation of electrical energy allocated to Los Angeles Gas and Electric Corporation was also required to be effected by Edison Company; and

6. Whereas, under the Lease, the generation of electrical energy allocated to the States of Nevada and Arizona, the municipalities of Burbank, Glendale and Pasadena (hereinafter referred to as the "Municipalities"), and The Metropolitan Water District of Southern California (hereinafter referred to as the "District") is required to be effected by the City, and under the contract dated July 6, 1938, the generation of electrical energy allocated to Los Angeles Gas and Electric Corporation may be effected by the City, at its option; and

7. Whereas, the United States, pursuant to the provisions of the Project Act and the above recited provisions of the Lease, has constructed a dam (herein referred to as the "dam" or "Boulder Dam") and constructed thereat a power plant and incidental structures (herein, together with additional facilities and incidental structures in the course of construction or contemplated, collectively referred to as the "Boulder Power Plant"); and

8. Whereas, The City and Edison Company, and each of them, has in reliance upon the provisions of the Lease, constructed, at large cost to each of them, facilities incidental to generation, transmission lines from the Boulder Power Plant to metropolitan load centers in California, and other facilities for the purpose of utilizing on their respective systems energy generated by each of them, respectively, at Boulder Power Plant; and

9. Whereas, pursuant to the Lease, the City and Edison Company are in possession of and are operating the portions of the Boulder Power Plant leased to them, respectively; and

10. Whereas, by the terms of the Adjustment Act, it is provided that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant; that, in the event of such termination the operation and maintenance, and the making of replacements, however necessitated, of the Boulder Power Plant, by the United States, directly or through such agent or agents as the Secretary may designate, is authorized; that the powers, duties, and rights of such agent or agents shall be provided by contract, which may include provision that questions relating to the interpretation or performance thereof may be determined, to the extent provided therein, by arbitration or court proceedings; and that the Secretary, in consideration of such termination of such existing Lease, is authorized to agree (a) that the lessees therein named shall be designated as the agents of the United States for the operation of said power plant; (b) that (except by mutual consent or in accordance with such provisions for termination for default as may be specified therein) such agency contract shall not be revocable or terminable; and (c) that suits or proceedings to restrain the termination of any such agency contract, otherwise than as therein provided, or for other appropriate equitable relief or remedies, may be maintained against the Secretary; and said Act further provides that suits or other court proceedings pursuant to the foregoing provisions may be maintained in, and jurisdiction to hear and determine such suits or proceedings, and to grant such relief or remedies is thereby conferred upon, the District Court of the United States for the District of Columbia, with the like right of appeal or review as in other like suits or proceedings in said court; and

11. Whereas, since each of the lessees considers it advantageous to them to continue to operate the portions of the Boulder Power Plant serving them in connection with their other respective sources of supply and systems, each of the lessees is willing to agree to the termination of the Lease in consideration of the benefits to flow from the carrying of the Boulder Canyon Project Adjustment Act into full effect and in consideration of the operation, maintenance, and making of replacements, however necessitated, of the Boulder Power Plant being effected through the City and Edison Company as operating agents during the period ending May 31, 1987, upon the terms and conditions hereinafter set forth; and

12. Whereas, the Secretary is willing that the City and Edison Company be designated as such operating agents upon the terms and conditions hereinafter set forth;

13. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

TERMINATION OF LEASE

14. At the time specified in Article 15 (d) hereof, for the commencement of the operation of the Boulder Power Plant by the United States through the agents hereinafter designated, the Lease shall terminate.

DESIGNATION OF OPERATING AGENTS AND TERM OF OPERATION

15. (a) The City is hereby designated as the agent of the United States for the operation and maintenance, and the making of replacements, however necessitated, of that portion of the Boulder Power Plant which from time to time during the term of such agency may be necessary for the generation of electrical energy to be taken (1) by the City, the States of Arizona and Nevada, the District and the Municipalities, their successors or assigns, (2) by the United States, under any right now existing or hereafter reserved, out of the City's allocation, or (3) by any taker (including the United States, but excluding the Companies, their successors or assigns), which under any right now existing or hereafter created may take any portion of the electrical energy now or hereafter allocated to, but not taken by, the City, the States of Arizona or Nevada, the District or the Municipalities, their successors or assigns; and the City hereby agrees to act as such agent.

(b) Edison Company is hereby designated as the agent of the United States for the operation and maintenance, and the making of replacements, however necessitated, of that portion of the Boulder Power Plant which from time to time during the term of such agency may be necessary for the generation of electrical energy to be taken (1) by the Companies, their successors or assigns, (2) by the United States, under any right now existing or hereafter reserved, out of Edison Company's allocation, or (3) by any taker (including the United States, but excluding the City, the States of Arizona or Nevada, the District or the Municipalities, their successors or assigns), which under any rights now existing or hereafter created may take any portion of the electrical energy now or hereafter allocated to, but not taken by, either of the Companies, their successors or assigns; and Edison Company hereby agrees to act as such agent.

(c) The City and Edison Company, in their respective capacities as such agents, are hereinafter referred to as the "Operating Agents." Each of the designations and acceptances made by the foregoing Articles 15 (a) and (b) is subject, nevertheless, to the provisions of

Article 16 hereof with reference to those facilities which are necessary for use in connection with both of the above-designated portions of the Boulder Power Plant, or in connection with either of said portions and the properties operated by the United States directly, hereinafter referred to as "common facilities," and is subject also to the following provisions:

(i) Should it prove of material economic advantage to the States of Arizona or Nevada, or either of them, to have a portion of their energy generated by Edison Company, generation thereof may be so effected upon written authorization by the Secretary, after notice to all allottees and opportunity to present their views, provided consent thereto in writing, executed by the State affected and the Operating Agents, shall be filed with the Secretary;

(ii) At times when the District may desire to use off-peak energy in addition to energy available from generating equipment operated by the City, it may, by agreement with Edison Company, arrange for generation of energy needed by the District and not obtainable from generating equipment operated by the City, provided that no allottee shall be detrimentally affected thereby;

(iii) The United States shall have the right to have any energy reserved to it out of the allocation of one Operating Agent generated at any time by the other, in which case said other Operating Agent shall be paid appropriate generating charges for such energy actually generated;

(iv) Generation of energy taken by the City as assignee of Los Angeles Gas and Electric Corporation may be effected, at the option of the City, by Edison Company or by the City; and

(v) Whenever any allottee, either temporarily or permanently, needs and is entitled to receive energy over and above that available to it from the Operating Agent designated to generate energy for such allottee, such allottee shall have the right, subject to such conditions as may be agreed upon by such allottee and the Operating Agents and all other allottees affected, or if they cannot agree, as may be determined by the Secretary, after notice and opportunity to said Operating Agents and allottees to present their views, to have all or a part of such additional energy generated by the other Operating Agent.

(d) The term of each such agency shall commence at midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective, pursuant to its terms, and shall continue in effect until and including May 31, 1987, and shall not be subject to prior termination except by consent of all the parties hereto or in accordance with the provisions for termination for default specified in Article 24 hereof.

SPECIFICATIONS OF PROPERTIES TO BE OPERATED, MAINTAINED, AND
REPLACED BY THE OPERATING AGENTS

16. (a) In accordance with the designations made in Article 15 hereof, the City shall operate and maintain, and make all replacements, however necessitated, of the generating equipment and incidental structures and properties specified and referred to in the list of properties hereto appended, entitled "Specifications of Properties of the United States to be Operated, Maintained, and Replaced by the City," and marked Exhibit "A," and Edison Company shall operate and maintain, and make all replacements, however necessitated, of the generating equipment and incidental structures and properties specified and referred to in the list of properties hereto appended, entitled "Specification of Properties of the United States to be Operated, Maintained, and Replaced by Edison Company" and marked Exhibit "B." By mutual consent of the City and Edison Company and the Secretary, said lists of properties may be amended, from time to time, by the transfer of items or units of property from one of said lists to the other, or by modifying the provisions thereof with respect to the use or control, as between the Operating Agents, of common facilities. Said lists may also be amended, from time to time, by direction of the Secretary, after notice to the Operating Agents, and all other allottees, and opportunity to present their views, in order to insure the availability of generating units for service to the allottees for whom the Operating Agents, respectively, are required hereunder to generate energy. By mutual consent of the Secretary and the Operating Agents, either of said lists of properties may also be amended, from time to time, after notice to all other allottees and opportunity to present their views, by adding thereto, or eliminating therefrom, units or items of properties; provided, however, that if, in the case of any new unit or item of property not theretofore included in either of said lists, such mutual consent shall not be given, said item shall be added to the one of said lists designated by the Secretary. The obligation of the Operating Agents with respect to operation, maintenance, and replacements shall not commence as to any structures, equipment, or facilities comprising a portion of Boulder Power Plant which may be in the course of construction or installation by the United States at the time of the taking effect of this contract, or which may thereafter be constructed or installed by the United States, unless otherwise agreed between the Operating Agent affected and the Director of Power of the Project appointed by the Secretary (hereinafter referred to as "Director"), until such structures, equipment, or facilities shall have been fully constructed and installed, and the Operating Agent affected shall have been notified in writing by the Director that they are ready for use or operation.

(b) Any common facility operated by the United States directly shall be available for use by either Operating Agent, subject to proper adjustment of costs and such other terms and conditions as the Director may provide.

(c) If either Operating Agent in good faith as a part of its duties hereunder shall operate, maintain, or replace any unit or item of property of the United States not specified in Exhibit "A" or Exhibit "B," as the case may be, as a unit or item to be operated, maintained, or replaced by that Operating Agent, such Operating Agent shall receive compensation in an amount equal to the aggregate of all costs reasonably incurred by it in such operation, maintenance, and replacement, as from the time the operation of such unit or item of property commenced, as determined by the Director in the same manner provided in Article 23.

(d) Changes in either of the lists made pursuant to this Article 16 may be effectuated by any appropriate writing signed on behalf of the parties concerned, as follows: in the case of the United States, by the Secretary; in the case of the City, by the Chief Electrical Engineer and General Manager of the Bureau of Power and Light, Department of Water and Power; and in the case of Edison Company, by its Chief Engineer.

(e) Nothing in this contract shall preclude the performance by any party to this agreement, at the request of any other party hereto, of work or duties which by or under the terms of this contract are to be done or performed by the party making such request; provided, however, that such work or duties of one Operating Agent shall not be done or performed by the other without the consent of the Director.

DUTIES, POWERS, AND RIGHTS OF OPERATING AGENT

17. (a) Each Operating Agent shall have charge, subject to the supervision of the Director, as more particularly provided elsewhere herein, of the operation, maintenance, and the making of replacements, however necessitated, of that portion of the Boulder Power Plant for which, by the provisions hereof, it is designated the Operating Agent. Each Operating Agent may furnish and install such new units or items of property as may, in the judgment of the Operating Agent, be reasonably necessary, at a cost of not to exceed \$1,000 in any one case, subject to all the provisions hereof applicable to operation, maintenance and replacements.

(b) The Operating Agents shall severally provide and furnish all labor, services, supplies, materials, machinery and equipment and the use of equipment, facilities or other property, and do and perform each and every act (except as hereinafter in this Article, or elsewhere herein, provided), which may be required for operation, maintenance

or replacements, however necessitated, for which they, respectively, are responsible.

(c) By mutual agreement of the Operating Agent or Agents affected and the Secretary or the Director, the United States may, in any instance, purchase and deliver to such Agent or Agents any supplies, material, machinery or equipment required for such operation, maintenance or replacements, and in purchasing any such machinery or equipment, the Secretary may, with the consent of the Operating Agent affected, require the installation thereof by the manufacturer or contractor furnishing the same.

(d) Upon requisition filed with the Director by either Operating Agent, the United States may furnish and deliver to such Operating Agent any supplies, material, machinery or equipment required for such operation, maintenance or replacements, which it may have on hand, and which, as determined by the Director, are available for such furnishing and delivery.

(e) Upon requisition filed with the Director by either Operating Agent, the United States may also furnish the temporary use of any equipment, facilities or other property required for such operation, maintenance or replacements, which it may have on hand, and which, as determined by the Director, are available for such use.

(f) Upon requisition filed with the Director by either Operating Agent, the United States will perform, with its own forces, work required in connection with operation, maintenance or replacements for which such Operating Agent is responsible, if it has available, as determined by the Director, the labor and facilities necessary therefor.

(g) All materials, supplies, machinery and equipment purchased pursuant to the provisions of this Article, whether by the United States or by an Operating Agent, shall be in accordance with specifications prepared by the Operating Agent and, except in the case of expendable materials or supplies purchased by such Operating Agent, approved by the Director. In the case of all purchases by the United States, the Operating Agent concerned shall cooperate with the United States in the consideration of all proposals received and may make recommendations as to the letting of the contract.

(h) Costs incurred by the United States for any supplies, materials, machinery or equipment furnished, or work performed, by it under the provisions of this Article 17, and charges for the use, under said Article, of equipment, facilities or other properties (which charges shall be determined by the Director on the basis of current charges or rates used by the United States in its own operations), shall, as requested by the Operating Agent concerned, be billed to such Operating Agent or charged directly by the United States to appropriate accounts. If billed, such costs shall be included as costs incurred by such Operating Agent in any subsequent statement submitted in

accordance with the provisions of Article 23 (e) hereof. Settlement of any such costs so billed may be effected by such Operating Agent either by (1) payment to the United States or (2) credit allowance in any statement of costs incurred as subsequently submitted by such Operating Agent.

(i) The title to all supplies, material, machinery or equipment so purchased or furnished and delivered by the United States, or the temporary use of which is furnished by the United States, shall remain in the United States and shall not pass to the Operating Agent upon such delivery. The title to all supplies, material, machinery and equipment provided and furnished pursuant to Article 17 (b) hereof, shall pass to the United States when compensation based on the cost thereof shall have been made as in this contract provided; provided, however, that when the use of equipment, facilities or other property shall be provided and furnished by an Operating Agent, the title thereto shall remain in such Operating Agent and shall not pass to the United States.

(j) Except in case of emergency, no substantial change in any of said works, including substantial changes involved in making replacements, shall be made by either Operating Agent without first having had and obtained the written consent of the Director who shall determine whether any change is substantial.

(k) (i) If at any time any machinery, equipment or other property under the control of either Operating Agent shall be, as determined by the Director, in such defective, dangerous or improper condition as to endanger life or property, and such Operating Agent shall be notified thereof by the Director, such Operating Agent shall promptly correct such defective, dangerous or improper condition by adequate repairs or replacements, and in case of its neglect so to do, the United States may, at its option, in addition to any other remedy available to it, make such repairs or replacements as it may deem necessary to remove such condition.

(ii) If either Operating Agent shall so improperly operate any machinery, equipment or other property under its control as to endanger life or property, as determined by the Director, such Operating Agent shall, upon direction from the Director, promptly change its method of operation so as to avoid or remove the danger, and in case of its neglect, as determined by the Director, so to do, the Director may, at his option, in addition to any other remedy available to the United States, take charge of the operation of so much of the machinery, equipment or other property under the control of said Operating Agent as may be necessary for the avoidance or removal of the danger, and may continue in charge thereof until he shall have received from such Operating Agent adequate assurances that such improper operation will not recur, or until, on appeal, his directions shall have been

reversed by the Secretary. Upon the giving of such assurances or upon such reversal by the Secretary, the Director shall surrender the charge of the operation of such machinery, equipment or other property, and the Operating Agent or Agents shall be reinstated therein.

(iii) All cost incurred by the United States under this Article 17 (k) shall be determined and billed or charged in the same manner as provided by Article 17 (h).

(l) It shall be the duty of each Operating Agent to keep informed, as far as practicable, of the requirements for electrical energy of each allottee and of each contractor, and to that end the Secretary shall require of all allottees and of all contractors advance notice to the Director and to the Operating Agent or Agents affected of their requirements, or of their additional or decreased requirements, including estimates of kilowatt-hours, maximum demands, anticipated annual load curves by months, and all other information necessary to enable the Operating Agents to prepare for participation in programming integration of operations under Article 20 hereof and to make the recommendations hereinafter required. Each Operating Agent shall inform the Director of the receipt from the allottees and the contractors served by it of any such notices and shall, from time to time, as far as is practicable, on the basis of such notices, and its knowledge of the load requirements of such allottees and of such contractors, make recommendations to the Director respecting the design, capacity, and time of installation of additional generating machinery and equipment to the end that additional machinery and equipment may be made available by the United States in accordance with its obligations. It shall be the duty of each Operating Agent to cooperate with the United States in the preparation of designs for additional machinery and equipment required by it, and in the preparation of plans and specifications therefor. Each Operating Agent and allottee affected thereby shall have the opportunity to present its views to the Secretary or his representatives, upon the design and capacity of additional machinery and equipment to be provided and installed by the United States, before proposals for the furnishing of the same are invited, and to consider all proposals received and to make recommendations as to the letting of contracts before the same are let, but the determination of the Secretary (or his representatives authorized to make award of such contracts) on these matters shall be final.

(m) The Operating Agents shall have reasonable access to, and use of, all facilities under the control of the United States necessary or convenient for the ingress, egress, and transportation of men and materials in the performance of their duties hereunder.

(n) In the event the Secretary notifies an Operating Agent that any employee of said Operating Agent employed at the Project, and

engaged in operation, maintenance, or the making of replacements hereunder is unsatisfactory, and states in said notice the cause of dissatisfaction, said Operating Agent shall promptly remove such cause of dissatisfaction, to the satisfaction of the Secretary, by removal of such employee from the Project, or otherwise.

(o) All of the obligations, responsibilities, rights, and duties of the Operating Agents under this contract shall be several and not joint.

POWERS AND DUTIES OF THE DIRECTOR

18. The Director shall have power to—

(i) Exercise general supervision over operation and maintenance and the making of replacements by the Operating Agents;

(ii) Enforce rules and regulations promulgated by the Secretary relating to the Project; and

(iii) Give to the Operating Agents, or either of them, such directions as may be reasonably necessary for such enforcement and in the supervision of operation, maintenance, and the making of replacements by the Operating Agents;

provided that direction and supervision of the Operating Agents with regard to integration of operations shall be in accordance with the provisions of Article 20 hereof.

METERING EQUIPMENT AND RECORDS OF WATER DELIVERED AND ELECTRICAL ENERGY GENERATED

19. (a) Metering equipment installed for the purpose of measuring water and energy shall be maintained, and replacements thereof made, by the respective Operating Agents. Meters shall be tested by the United States at any reasonable time on request of either the United States or of either Operating Agent, or, in the case of electrical meters, on request of any allottee whose energy is measured by any such meter, and, in any event, electrical meters shall be tested at least once each year. Electrical metering equipment shall be tested by means of suitable testing equipment which shall be furnished by the United States and which shall be calibrated by the National Bureau of Standards as often as requested by any party hereto, or by any allottee, and, in any event, at least once every five (5) years. All meters shall be kept sealed and the seals shall be broken, and all tests of metering equipment shall be conducted, only in the presence of representatives of both the United States and the Operating Agents, respectively, and after any allottee concerned is given notice and opportunity to be present.

(b) Each Operating Agent shall make full and complete written monthly reports as directed by the Secretary, on forms to be supplied by the United States, of all water delivered to the turbines operated

by it and of all electrical energy generated by it at the Project, and the disposition thereof. Each such report shall be made and delivered to the Director and a copy thereof delivered to the other Operating Agent on or before the fourth day of the month immediately succeeding the month covered thereby.

INTEGRATION OF OPERATIONS

20. (a) The United States, subject to the statutory requirement referred to in Article 20 (b) (i) hereof and pursuant to agreement with the District, will interchange energy from its hydroelectric plants on the Colorado River below Boulder Dam with energy allocated to the District and generated at Boulder Power Plant insofar as such interchange can be effected without interfering with service to the District and without impairing or extending the rights or obligations, respectively, of other allottees. The United States will so interchange energy insofar as practicable, as a means of effecting integration of operations as between Boulder Power Plant and other projects on the Colorado River owned and operated by the United States at which power is or may be developed, as the primary step in any program of integration of operations agreed upon, decided or determined pursuant to Article 20 (b) hereof.

(b) (i) Subject to the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power, the operation of Boulder Power Plant shall be reasonably integrated with the operation of other projects on the Colorado River owned and operated by the United States at which power is or may be developed and with the operations by the Operating Agents of their respective systems, including their other sources of electrical energy; provided that the time and rate of delivery of energy to allottees and contractors other than the City and Edison Company (while they are Operating Agents under this contract) shall not be affected by any program of integrated operation agreed to, decided on or determined under this Article 20. Such reasonable integration of operation shall be with the view of effecting economical and efficient use of generating machinery and equipment and economical and efficient use of water at Boulder Dam and such other projects and at the Operating Agents' other sources of electrical energy. It is understood and agreed that within the limits of use of water for power purposes at Boulder Power Plant fixed in a program of integration of operations agreed upon, decided or determined under Article 20 (b) hereof, and during the effective period of such program, the manner of integration between Boulder

Power Plant and the other sources of power on the respective systems of the Operating Agents shall rest with the respective Operating Agents, it being the intention of the parties that the programs of integration, although agreed upon, decided on or determined for the purposes and with the views set forth above, shall directly control only the manner in which the Operating Agents shall or may operate Boulder Power Plant and shall not affect the manner in which the Operating Agents operate their respective systems, including their other sources of electrical energy, except as such operations by the Operating Agents of their respective systems may be consequentially affected by such direct control of Boulder Power Plant operations. In accordance with Article 17 (o) hereof, the obligations, responsibilities, rights, and duties of the Operating Agents under this Article 20 (b) shall be several and not joint; and in the event this contract is terminated as to one of the Operating Agents, the provisions of this Article 20 (b) shall remain applicable to the other. No limitation imposed by such program of integration shall reduce the amount of electrical energy which either the City or Edison Company is entitled to take in any year of operation, but any such limitation shall apply solely to the time within any year of operation at which such energy may be taken by the City or Edison Company, respectively, while an Operating Agent under this contract.

(ii) At least once each calendar year the Secretary or his duly authorized representative and a duly authorized representative of each Operating Agent shall meet at the Project, upon the request of any one of the three, for the purpose of programming integration of operations under Article 20 (b) hereof. As hereinafter used in this Article 20 the word "Secretary" is understood to mean the Secretary of the Interior or his duly authorized representative. Notice of and opportunity to present views at such meeting shall be given to each of the other allottees by the Secretary. Any program agreed to by all three representatives at such meeting shall be effective and controlling for 12 months from the date of the agreement or for any lesser period that may be fixed in the agreement, except that any such agreement may be modified by mutual consent of the Secretary and the representatives of the Operating Agents. At any time in any such meeting, or in the event of failure to agree, any one of the three may require that the matter of programming integration of operations be submitted to arbitrators, in accordance with Article 20 (b) (iv) hereof, for decision. Each decision of such arbitrators shall be effective and controlling for 12 months from the date of the decision or for such shorter period as may be fixed in the decision, except that it may be modified by mutual consent of the Secretary and the Operating Agents.

(iii) During any period when there is not in effect an agreement or a decision, under Article 20 (b) (ii) hereof, controlling integration of operations, the program of integration of operations shall be as determined and announced to the allottees from time to time by the Secretary, and each such program as determined by the Secretary shall be conclusive and controlling on the parties hereto unless and until modified by an agreement or decision made pursuant to Article 20 (b) (ii) hereof.

(iv) Any demand for arbitration under Article 20 (b) (ii) hereof shall be made by written notice to the parties to this contract. Any such notice to the United States shall be given to the Secretary. Upon receipt of each such notice one arbitrator shall be named by the Secretary, and he shall be present at the Project and available for performance of his duties as arbitrator within five days after receipt by the Secretary of the notice hereinabove provided for; one arbitrator shall be named by the Operating Agents; and a third arbitrator shall be selected by the other two arbitrators thus named. The Secretary and the Operating Agents, respectively, may name alternate arbitrators. In the event the two arbitrators named fail to select such third arbitrator within fifteen days from the date of the notice hereinabove provided for, such third arbitrator shall be selected by the Chief Justice of the Supreme Court of the United States. The arbitrators shall give to all allottees notice and opportunity to present views. The decision of any two arbitrators shall be a valid decision.

(v) If either Operating Agent shall fail, as determined by the Director, to comply with a program of integration of operations agreed to or decided on under Article 20 (b) (ii) hereof, or determined by the Secretary under Article 20 (b) (iii) hereof, for a period of three days after receipt of written request by the Director for compliance, the Director may, at his option, in addition to any other remedy available to the United States, take charge of the operation of so much of the machinery, equipment, or other property at Boulder Power Plant under the control of said Operating Agent as the Director deems necessary to effect compliance with such program of integration of operations and may continue in charge thereof until he shall have received from such Operating Agent assurances determined by the Director to be adequate that such program will be complied with, or until his action under this subdivision (v) shall have been reversed or modified upon an appeal pursuant to Article 27 (a) hereof. Upon the giving of such assurances or upon such reversal by the Secretary, the Director shall surrender the charge of the operation of such machinery, equipment, or other property, and the Operating Agent or Agents shall be reinstated therein.

INSPECTION AND ACCESS

21. (a) The Secretary, or his duly authorized representatives, shall at all times have the right of ingress to and egress from all works operated by the Operating Agents, under this contract, for the purposes of supervision and inspection thereof, and for the purposes of operation and maintenance of works operated directly by the United States, and for all other proper purposes.

(b) The Secretary, or his duly authorized representatives, shall also have free access at all reasonable times to the books, records, and accounts of the Operating Agents relating to the operation, maintenance, and replacements of machinery and equipment hereunder or to the generation and delivery of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same. Each of the allottees of electrical energy generated at the Boulder Power Plant, through their duly authorized representatives, shall have the like right of access and the right to make copies, limited, however, to matters affecting the allottee exercising such right.

GENERATION IN ACCORDANCE WITH CONTRACTS

22. (a) Each Operating Agent severally, in accordance with the designations made in Article 15 hereof, shall generate, and shall deliver at transmission voltage, electrical energy in compliance with any program of integration of operations agreed to, decided on, or determined pursuant to Article 20 hereof and in accordance with the requirements of contracts heretofore or hereafter made by the United States for the delivery of electrical energy from Boulder Dam; provided that the United States shall have provided generating, transforming, and other equipment and water adequate therefor.

(b) In the event of dispute as to the electrical energy to which any contractor is entitled, the Director shall instruct the Operating Agent affected as to the electrical energy to be delivered to such contractor, and such Operating Agent shall, subject to the provisions of Article 27 hereof, comply with such direction.

(c) Each Operating Agent shall, upon receipt of written notice from the Director that any contractor is not entitled to further delivery of electrical energy under the terms of its contract or contracts, immediately discontinue the generation for or delivery of electrical energy to such contractor until receipt of further notice from the Director; provided, however, that if such contractor and another contractor are served through the same switches, or other facilities, located at the Boulder Power Plant, so that it is not practicable to disconnect at the Boulder Power Plant service to the contractor not entitled to electrical energy, without interrupting the service to such other contractor, the Operating Agent shall not make such disconnection, but,

so far as may be consistent with its obligations under law or contract, shall use all means under its control (whether in its capacity as Operating Agent or otherwise) to accomplish discontinuance of delivery of electrical energy from Boulder Power Plant to the contractor not entitled thereto.

COMPENSATION FOR OPERATION

23. (a) Each Operating Agent shall receive as compensation for the performance of its duties hereunder an amount equal to the aggregate of all costs properly and reasonably incurred by it in such performance. The reasonableness or propriety of such costs shall be determined by the Director. Such costs shall include, without limiting the generality of the foregoing, the following:

(i) The cost of all direct labor (including supervision and engineering at the Power Plant), materials, supplies, machinery, equipment, and other property or services provided or furnished by the Operating Agent;

(ii) The cost of the use of automotive or other mobile equipment owned or controlled by the Operating Agent, determined on the basis of current charges or rates used by the Operating Agent in its own operations;

(iii) The cost of the use of other property owned or controlled by the Operating Agent, determined on the basis of current charges or rates used by the Operating Agent in its own operations;

(iv) The cost of shop, laboratory, store, and other services provided by the Operating Agent through facilities used in the operation of its own system, determined on the basis of current rates used by the Operating Agent in its own operations;

(v) The cost of supervision and engineering (excluding supervision and engineering at the Power Plant), determined on the basis of current rates used by the Operating Agent in its own operations;

(vi) The cost of the use of housing facilities and of the use of other equipment furnished, owned, or controlled by the Operating Agent, determined on the basis of (a) interest on investment, taxes, and insurance, and (b) accrued depreciation, rentals paid or earned, and all other costs applicable to such use;

(vii) The cost of insurance (other than insurance specified in (vi) above-mentioned);

(viii) The cost of taxes (other than taxes specified in (vi) above-mentioned) or charges of any kind whatsoever levied or imposed upon the Operating Agent by Federal, State, or other Governmental authority, and arising out of, or properly allocable to, the performance of its duties as such Operating Agent;

(ix) The cost arising from claims and liabilities for injuries to or death of employees or others, or damages to property, not covered by insurance;

(x) The cost of administrative and general expenses, hereby determined to be—

15 percent of the aggregate of all charges mentioned in items (i) to (v), inclusive, and in sub-item (b) of item (vi) of this Article 23 (a) (except in the case of labor, materials, equipment, or services provided by the United States by agreement or upon requisition of the Operating Agent, or work performed by third parties under contract);

5 percent of the aggregate of all charges mentioned in sub-item (a) of item (vi) and in items (vii) to (ix), inclusive, of this Article 23 (a); and

5 percent of the cost of labor, materials, equipment, or services provided by the United States by agreement or upon requisition of the Operating Agent, or work performed by third parties under contract;

(xi) The amortization, as determined by the Secretary, of the cost of training operators during the period prior to June 1, 1937, in the case of the City, and during the period prior to June 1, 1940, in the case of Edison Company.

(b) The amount included in such costs for property furnished by the Operating Agent out of stock on hand or otherwise without current out-of-pocket outlay therefor shall be the average cost of similar property on hand as shown on the books of the Operating Agent.

(c) The amount included in such cost for labor or property provided, furnished, or used in part in connection with the duties of the Operating Agent as such and in part in connection with other activities of the City or Edison Company, as the case may be, shall be the proper proportion of the costs of such labor and of the costs incurred in connection with the providing, furnishing, or using of such property.

(d) It is the intent of this contract that neither Operating Agent shall make any profit or suffer any loss by reason of the performance of its duties hereunder.

(e) On or before the twenty-fifth day of each calendar month each Operating Agent shall submit to the Director a statement covering all costs incurred by it in the performance of its duties hereunder which have been recorded by it on books of account during the preceding calendar month, showing, or accompanied by a report showing, in detail, all items of such costs; provided, however, that any such costs not readily ascertainable at the date such statement is submitted may be included therein on the basis of reasonable estimates, subject to adjustment to actual cost as soon as practicable thereafter, or may, together with any delayed items of cost, be included in a subsequent statement. Simultaneously with the submission of each such statement to the Director a copy thereof shall be mailed or delivered by the Operating Agent to each allottee and each contractor which shall

have filed with the Secretary a request for such copies and shall have furnished to the Operating Agent a copy of such request at an address specified in such request. Each such allottee and each such contractor shall have the right at any time on or before the 25th day of the calendar month next succeeding that in which such statement is submitted to submit objections to any item of such statement, and the right at any time within 30 days after the determination of the Director as to the reasonableness or propriety of such item to appeal to the Secretary from such determination, with opportunity to present its views. Neither the making of such objection nor the taking of such appeal shall delay the credit provided for in Article 23 (f) hereof, but if any such objection shall be sustained by the Director or by the Secretary upon appeal subsequent adjustment shall be made as provided by said Article 23 (f). Any determination of the Director or of the Secretary as to the reasonableness or propriety of any item of such statement shall be binding upon the other Operating Agent and all allottees and contractors to the same extent as it may be binding upon the Operating Agent submitting such statement.

(f) The total amount of any such statement as submitted, less credit allowances as provided in Article 17 (h), shall be credited upon the next bill submitted by the United States to such Operating Agent in its capacity as a contractor for energy; provided, however, that such crediting shall not preclude subsequent adjustment if through error or the final disallowance of any part thereof the same shall have been found to be incorrect in any particular.

(g) If the amount of any such statement shall be in excess of the amount so billed by the United States, then the amount of such excess shall be deemed to be an advance payment of amounts thereafter to become due to the United States from such Operating Agent in its capacity as a contractor for electrical energy, and such Operating Agent in its capacity as such contractor, shall be credited with interest on the excess amount, or the remaining balance thereof, at the rate of 3 percent per annum from the first day of the calendar month following the submission of such statement until offset, by the accrual of amounts due from such Operating Agent in its capacity as a contractor for electrical energy, or paid as next herein provided.

(h) If all such advance payments have not been so offset at the close of any year of operation, then the United States shall pay the excess, with interest as above provided, to said Operating Agent on the first day of July next following or as soon thereafter as funds are available therefor; provided, that if at any time during such year of operation it shall appear to the Director that the aggregate of such advance payments theretofore made will probably exceed the aggregate of the amounts to become due from such Operating Agent to the United States during the remainder of such year of operation, as

payments for energy in its capacity as contractor for electrical energy, the United States may make immediate payment to such Operating Agent of such excess, with interest as above provided.

(i) Accounts of costs incurred by the Operating Agents hereunder shall be kept in accordance with the system of accounting prescribed in rules and regulations duly promulgated by the Secretary.

(j) On or before March 1 of each year, each Operating Agent shall submit to the Secretary an estimate of costs which it expects, during the following year of operation, to incur in the operation and maintenance of its portion of the Boulder Power Plant, and in the making of replacements thereof; provided that such estimate for the year of operation commencing June 1, 1941, shall be submitted as soon as practicable after the commencement of the term of the agency as provided in Article 15 (d).

(k) Either Operating Agent may, in its discretion, apply to the Director for the advance approval of any item or items of expenditure or of obligation proposed to be made or incurred by such Operating Agent in the performance of its duties. Credit shall not be denied to either Operating Agent for any item which shall have been approved by the Director, after notice to any allottee affected and opportunity to such allottee to present its views upon such application of the Operating Agent, pursuant to this Article 23 (k) or by the Secretary on appeal pursuant to Article 27 (a) hereof.

REMEDIES FOR BREACH OF CONTRACT

24. (a) In addition to any other right or remedy which the United States may have, the Secretary may enter, take possession of, operate and maintain, and make replacements of so much of the Boulder Power Plant operated by an Operating Agent, as the Secretary deems necessary, if he makes a preliminary determination:

(i) that such Operating Agent has committed a breach of this contract which deprives another allottee or contractor or the United States of electrical energy which it is the duty of such Agent to deliver under Article 22 hereof, and that such Agent has continued so to breach the contract for three (3) days after receipt of written notice from the Secretary to such Agent requesting discontinuance of the breach;

(ii) that such Operating Agent has committed any other material breach of this contract, and that such breach has continued for thirty (30) days after receipt of written notice from the Secretary to such Agent requesting discontinuance of such breach.

The Secretary shall remain in possession and continue to operate and maintain such portion of the Boulder Power Plant until the

Operating Agent involved is reinstated under Article 24 (c) hereof or as the result of arbitration or court proceedings.

(b) In addition to any other right or remedy which the United States may have the Secretary may terminate this contract by an order of termination which shall fix the date of termination not earlier than four (4) years from the date of said order, if after notice and hearing accorded by the Secretary to the Operating Agent involved, and upon the basis of the record made at such hearing, the Secretary determines—

(i) that such Operating Agent has committed a breach of this contract which deprives another allottee or contractor or the United States of electrical energy which it is the duty of such Agent to deliver under Article 22 hereof, and that such Agent has continued so to breach the contract for three (3) days after receipt of written notice from the Secretary to such Agent requesting discontinuance of the breach;

(ii) that such Operating Agent has committed a breach of this contract by reason of such Agent's failure to comply with a program of integration of operations agreed to, decided on or determined pursuant to Article 20 (b) hereof, and that such Agent has continued so to breach the contract for three (3) days after receipt of written notice from the Secretary to such Agent requesting discontinuance of such breach; or

(iii) that such Operating Agent has committed any other material breach of this contract, and that such breach has continued for thirty (30) days after receipt of written notice from the Secretary to such Agent requesting discontinuance of such breach.

Possession taken by the Director pursuant to Article 17 (k) or Article 20 (b) (v) shall be deemed to be possession by the Secretary if continued for thirty (30) days, and in that event, or in the event possession taken by the Secretary pursuant to Article 24 (a) is continued for thirty (30) days, it shall be the duty of the Secretary thereupon to give notice of a hearing for termination proceedings under this Article 24 (b) and to hold and complete such hearing and, if he shall determine to enter an order of termination, then also to enter such order, within sixty (60) days after the expiration of said thirty (30) days' possession, unless the Operating Agent or Agents affected shall have requested or consented to an extension of such time. If possession has not theretofore been taken, the Secretary may, at any time after the entry of an order of termination, enter, take possession of, operate and maintain and make replacements of so much of the Boulder Power Plant operated by the Operating Agent or Agents affected as he deems necessary; and the Secretary

shall remain in possession and continue to operate and maintain such portion of the Boulder Power Plant until the Operating Agent involved is reinstated under Article 24 (c) hereof or as the result of arbitration or court proceedings. Any hearing held pursuant to Article 24 (b) shall be before the Secretary or his duly authorized representative; testimony given at such hearing shall be under oath administered by any officer of the Department of the Interior authorized to administer oaths; a complete record of such hearing shall be made (including a record of any evidence offered but not received); and a copy of such record shall be furnished to each Operating Agent.

(c) At any time after entry by the Secretary under Article 24 (a) or (b), or after possession taken by the Director becomes the possession by the Secretary under Article 24 (b) hereof, or after entry of an order of termination of this contract and prior to the date of termination fixed therein, the Operating Agent involved shall be reinstated and shall have restored to it all rights which it had under this contract prior to the time of such entry, possession, or order, upon removing, in a manner determined by the Secretary to be adequate, all causes which resulted in such entry, taking possession or order of termination, or upon giving assurances determined by the Secretary to be adequate that such causes will be removed, and upon paying to the United States any and all costs incurred by it by reason of such entry, possession, or order of termination which the Secretary shall determine to be in excess of the cost which would have been incurred in the operation and maintenance of the power plant if there had not been such entry, possession or order of termination. Upon the date of termination fixed in the order of termination, unless the said causes have been removed and such Agent reinstated, this contract shall terminate and be of no further force and effect as to such Agent. Upon any such termination as herein provided, all property of the United States in the possession of such Agent shall be returned to the United States in as good condition as when received, damage not occasioned by the fault of such Agent and reasonable wear excepted.

(d) In consideration of the termination of the Lease, and as a consideration for the execution of this contract by the Operating Agents, it is hereby agreed that (except by mutual consent or in accordance with the provisions for termination for default contained in this contract) this contract shall not be revocable or terminable, and that suits for injunction or for other appropriate equitable relief or remedies against termination of this contract in a manner other than that provided in this contract may be maintained against the Secretary under Section 9 of the Adjustment Act.

RULES AND REGULATIONS

25. This contract shall be subject to rules and regulations promulgated by the Secretary pursuant to the Adjustment Act; provided, however, that no right of either Operating Agent, or of any allottee, shall be impaired, or obligation of either Operating Agent, or of any allottee, extended, by any such rule or regulation hereafter promulgated, and that opportunity to present their views shall be afforded both Operating Agents, and all other allottees, by the Secretary prior to the promulgation thereof, or any change or modification thereof: *Provided, further, however,* That nothing in this article contained shall be deemed in any way to limit or affect the terms, conditions and other provisions contained in other articles of this contract.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the Operating Agents, or of either of them, hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of either Operating Agent, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original Operating Agent hereunder: *Provided,* That the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this article.

DISPUTES AND DISAGREEMENTS

27. (a) All instructions, directions, and determinations of the Director, or of the Secretary's duly authorized representative under Article 20 (b) (iii) hereof, including those which call for the exercise of discretion, shall be subject to appeal to the Secretary, with opportunity for the appealing party to present its views, and shall be complied with by the Operating Agent affected unless and until reversed or modified by the Secretary upon such appeal. Such appeal shall be taken within thirty (30) days after any such instruction, direction, or determination is given or made, and unless such appeal is so taken, such instructions, directions, and determinations shall be final and binding as to the Operating Agents, provided that failure to take such appeal shall not affect either Operating Agent's right to proceed under Article 20 (b) (ii) hereof.

(b) All instructions, directions, and determinations of the Secretary in accordance with the terms of this contract (whether on appeal from the Director or otherwise) shall be complied with by the Operating Agent affected.

(c) A determination by the Secretary under the provisions of Article 24 (b) hereof on the basis of which an order of termination has been entered by the Secretary pursuant to said Article 24 (b) may be the subject of arbitration proceedings pursuant to Article 27 (d) hereof, or court proceedings for injunctive or declaratory relief against such termination may be maintained against the Secretary in the District Court of the United States for the District of Columbia, with the like right of appeal or review as in other like suits or proceedings in said court. Each of the parties hereto hereby agrees that in any such arbitration or court proceedings the record of the hearing held pursuant to the provisions of Article 24 (b) shall constitute the entire evidence to be submitted in such arbitration or court proceedings; but this agreement shall not preclude independent proof of jurisdictional facts, or the admission of evidence as to relevant facts offered but improperly rejected at said hearing. In any such court proceedings, such relief against such termination as the court determines to be appropriate shall be granted, if the Operating Agent sustains the burden of establishing, on the basis of the evidence submitted in such proceedings in accordance with this Article 27 (c), that such termination is unjustified. In any such arbitration or court proceeding the reasonableness or propriety of any program of integration of operations agreed to by the parties, decided on by arbitrators, or determined by the Secretary or his duly authorized representative, pursuant to Article 20 (b) hereof shall not be questioned. Except as in this Article 27 (c) provided, every instruction, direction, or determination of the Secretary (whether on appeal from the Director or otherwise) involving or relating to the interpretation or performance of this contract, or of any amendment or supplement hereto, shall be final and binding as to the Operating Agents and shall not be subject to arbitration proceedings pursuant to Article 27 (d) hereof or to court proceedings. Nothing in this Article 27 shall limit court proceedings against the Secretary, pursuant to the last sentence of Article 24 (d) hereof, for relief against termination of this contract in a manner other than that provided in this contract.

(d) Whenever the parties agree to submit a matter to arbitration, the Operating Agents, or if the matter in dispute affects the right of only one Operating Agent, then such Operating Agent, shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall meet as soon as practicable thereafter and shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five (5) days after their first

meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

(e) Every instruction, direction, and determination of the Director or Secretary (whether on appeal from the Director or otherwise) made pursuant to, or relating to the interpretation or performance of, the provisions of this contract or of any amendment hereof or supplement hereto, shall be final and binding as to all allottees and contractors to the same extent as it may be binding upon the Operating Agents; provided, that with respect to any such instruction, direction, or determination which affects the rights of any allottee or contractor under contracts between such allottee or contractor and the United States relating to the Project, such allottee or contractor shall have the right, to the same extent as the Operating Agents, to appeal to the Secretary and to present its views.

Nothing in this Article 27 or elsewhere in this contract contained shall limit or otherwise affect any right that any contractor (including the parties to this contract) has under any other contract heretofore or hereafter executed to the determination of any controversy by arbitration or court proceedings, except that programs of integration of operations shall be agreed upon, decided on, or determined pursuant to Article 20 (b) hereof and other applicable provisions of this contract and not otherwise.

So long as it is an Operating Agent under this contract, the City or Edison Company, as an allottee or as an Operating Agent, shall not question the reasonableness or propriety of a program of integration of operations agreed upon, decided on, or determined pursuant to Article 20 (b) hereof, and shall not question such limitations as may be imposed by such a program upon the taking of energy by the City or Edison Company as an allottee or contractor for electrical energy; but otherwise no requirement under this contract of compliance with instructions, directions, or determinations of the Director or Secretary by such Operating Agent, nor anything in this contract contained, shall preclude either the City or Edison Company, in their respective capacities as allottees or contractors for electrical energy, from making any objection, claim, or assertion of right through arbitration or court proceedings which any other allottee might make under similar conditions, it being the intention of the parties that this contract shall define the rights, powers, and duties of the Operating Agents, as such, without in any manner, excepting by the provisions of Article 20 hereof, affecting their rights, powers, and duties as allottees or contractors for electrical energy.

(f) Neither of the Operating Agents shall be liable in damages, or otherwise, to the other Operating Agent or to any other allottee or

contractor for any damage suffered by reason of any act or thing which under the terms of this contract such Operating Agent is required by the Secretary or the Director to do or perform.

CONTINGENT UPON APPROPRIATIONS

28. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient moneys available in the Colorado River Dam Fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient moneys not being so appropriated, or on account of there not being sufficient moneys in the Colorado River Dam Fund for such purposes. Anything herein to the contrary notwithstanding, neither of the Operating Agents shall be required to do any act or thing which would result in incurring any costs hereunder if sufficient appropriations have not been made for the payment of compensation based thereon as herein provided; provided, however, that nothing contained in this article shall preclude the Operating Agents, or either of them, from carrying on any work of operation, maintenance or replacements hereunder, in whole or in part, out of funds provided by them, or either of them, or by other allottees, or any of them, in order to prevent interruption of service because of failure of appropriations, subject to the payment of the cost thereof as compensation, if and when authorized by the Congress, unless previously offset by credits, as elsewhere herein provided.

CONTINGENT ON EXECUTION OF ENERGY CONTRACTS AND ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

29. This contract shall not become effective unless and until contracts for electrical energy conforming to the provisions of the Adjustment Act shall have been made and entered into between the United States and each of the Operating Agents in their capacities as allottees of such energy, and unless and until the Secretary shall have made the findings required by Section 10 of the Adjustment Act, and the said Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto; provided, however, that the term of each agency created hereby and operation hereunder shall not begin until the time specified in Article 15 (d) hereof. If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void and of no force or effect.

MODIFICATIONS

30. Any modification, extension, or waiver by the Secretary of any of the terms, provisions, or requirements of this contract, for the benefit of either of the Operating Agents, shall not be denied to the other.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

31. This contract is made upon the express condition and the express covenant that all rights hereunder shall be subject to and controlled by the Colorado River Compact, approved by Section 13 (a) of the Project Act, and the parties hereto shall observe and be subject to and controlled by said Colorado River Compact in the construction, management and operation of all works provided for herein, and the storage, diversion, delivery, and use of water hereunder.

NOTICES

32. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the City shall be delivered, or mailed postage prepaid, to the Chief Electrical Engineer of the Bureau of Power and Light, Department of Water and Power, Los Angeles, California.

(c) Any notice, demand or request required or authorized by this contract to be given or made to or upon Edison Company shall be delivered, or mailed postage prepaid, to the Chief Engineer, Southern California Edison Company Ltd., Los Angeles, California.

(d) Any notice, demand or request required or authorized by this contract to be given or made to or upon any allottee or contractor, other than the Operating Agents, shall be delivered, or mailed postage prepaid, to such person and at such address as may be designated in a request for notices which shall have been filed by any such allottee or contractor with the Secretary and a copy of which shall have been furnished to the Operating Agents, and, notwithstanding anything elsewhere in this contract contained, any such allottee or contractor shall be entitled to such notices only if he shall have so filed such request and furnished such copy. If any such allottee or contractor shall fail so to file such request or to furnish such copy, the United

States or either Operating Agent, at its election, may give or make any notice, demand or request required or authorized by this contract to be given or made to or upon such allottee or contractor by delivering the same to any established office of such allottee or contractor, or to any responsible officer of such allottee or contractor, or mailing the same, postage prepaid, to the address of such allottee or contractor last known to the party giving or making such notice, demand or request.

(e) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

PRIORITY OF CLAIMS OF THE UNITED STATES

33. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

34. The use by the Operating Agents is authorized of such public and reserved lands of the United States as may be designated, from time to time, by the Secretary for camp sites, residences for employees, warehouses, and other uses incident to the operation and maintenance of Boulder Power Plant and the making of replacements thereof.

TITLE TO REMAIN IN UNITED STATES

35. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, shall forever remain in the United States.

DEFINITIONS

36. The terms defined in Section 12 of the Adjustment Act, wherever used herein, shall be understood to have the respective meanings stated in said Adjustment Act, unless otherwise clearly indicated by the context.

EFFECT OF WAIVER OF BREACH OF CONTRACT

37. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other or subsequent breach of any provision hereof.

MEMBER OF CONGRESS CLAUSE

38. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not

be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES,
Secretary of the Interior.

THE CITY OF LOS ANGELES,
acting by and through its
Board of Water and
Power Commissioners,
[SEAL]

By (S) JAMES B. AGNEW, *President.*

Attest:

(S) JOSEPH L. WILLIAMS,
Secretary.

DEPARTMENT OF WATER
AND POWER OF THE CITY
OF LOS ANGELES, by the
Board of Water and
Power Commissioners,
[SEAL]

By (S) JAMES B. AGNEW, *President.*

Attest:

(S) JOSEPH L. WILLIAMS,
Secretary.

SOUTHERN CALIFORNIA EDISON
COMPANY, LTD.,
[SEAL]

By (S) HARRY J. BAUER, *President.*

Attest:

(S) CLIFTON PETERS,
Secretary.

Approved as to form and legality this 23rd day of May 1941:

RAY L. CHESEBRO,
City Attorney.

By (S) S. B. ROBINSON,
*Chief Assistant City Attorney for
Water and Power.*

Approved as to form, 5/26/41:

G. C. LARKIN,
Asst. General Counsel.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA—CALIFORNIA—NEVADA

EXHIBIT A TO AGENCY CONTRACT

SPECIFICATIONS OF PROPERTIES OF THE UNITED STATES TO BE OPERATED, MAINTAINED, AND REPLACED BY THE CITY OF LOS ANGELES

OUTLINE

- | | |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definitions. | Part II.—Common Facilities—Properties to be Operated by the City Which Are Also Necessary for Use in Connection With the Properties to be Operated by the Company: |
| Part I.—Properties to be Operated by the City: | A. Machinery, Equipment, and Facilities in the Central Section. |
| A. Generating Machinery, Equipment, and Facilities in the Nevada Wing. | Part III.—General. |
| B. Generating Machinery, Equipment and Facilities in the Arizona Wing. | |
| C. Machinery, Equipment, and Facilities in the Central Section. | |
| D. Substations, Switchyards, and Transmission Lines. | |
| E. Spare Parts. | |

EXHIBIT A

SPECIFICATIONS OF PROPERTIES OF THE UNITED STATES TO BE OPERATED, MAINTAINED, AND REPLACED BY THE CITY

DEFINITIONS

Wherever the following words occur in this exhibit, they shall have the meanings here given:

(a) The word "Company" means Southern California Edison Company, Ltd.

(b) The word "City" means The City of Los Angeles and its Department of Water and Power.

(c) The word "Operate" means operate, maintain, and make replacements.

(d) The words "Central Section" mean (in general) all that portion of the power plant building founded in the main upon the dam and located between the two powerhouse elevators.

(e) The words "Nevada Wing" mean that portion of the power plant building, exclusive of the central section, located in Nevada.

(f) The words "Arizona Wing" mean that portion of the power plant building, exclusive of the central section, located in Arizona.

(g) The word "joint-use," applied to machinery, equipment, circuits or other facilities, means that the use of such machinery, equipment, circuits or other facilities is required jointly by the Company and the City, or the Company and the United States, or the City and the United States, or the Company, the City, and the United States.

PART I.—PROPERTIES TO BE OPERATED BY THE CITY

A. GENERATING MACHINERY, EQUIPMENT, AND FACILITIES IN THE NEVADA WING

1. Generating Units N1, N2, N3, N4, N5 and N6, complete with all incidental and appurtenant equipment and facilities, including among others, the following principal items:

Main turbine shut-off valves and all appurtenances, including by-pass valves, pipe and fittings;

Inlet pipes from main turbine shut-off valves to main turbine scroll cases;

Main turbines, governors, pressure-regulating valves, and all machinery in connection therewith;

Draft tubes complete, including discharge tubes from pressure-regulating valves, and draft-tube drainage facilities;

Main generators and exciters, including the generator water-cooling systems, housings, stairways, platforms, railings, gratings, and appurtenances installed in connection therewith and all aluminum railings, battens, curbs, and head molds on the generator housings;

Generator-voltage switchgear, including oil circuit breakers, and disconnecting switches;

Generator-voltage lightning arresters and capacitors;

Current and potential transformers, reactors and housings used on main circuits; all generator-voltage conductors, insulators, and supports therefor, including bare and enclosed buses, bus supports, bare and insulated cable, cable clamps, potheads, and fittings;

Neutral oil circuit breakers, reactors, housings and all other equipment and cable in neutral leads of main generators;

Main control equipment, including unit auxiliaries control boards, generator control and excitation cubicles, annunciator systems, including visual and audible signals but excluding the code call and telephone systems, control circuits, cable and fittings;

Battery distribution boards for main control equipment, oil circuit breakers and unit auxiliaries, including the d. c. emergency lighting system supply and control switches.

Lubricating oil, governor oil, and insulating oil systems directly associated with the above-mentioned machinery, including indicators, thermometers, gages, filters, tanks, pumps, piping, valves, fittings and accessories; including the Nevada oil storage facilities, tanks and oil house located in the Nevada Adit at El. 799.66 together with all related pipe, valves, pumps, purifiers, filters, and fire-protection facilities.

All drainage equipment, including appurtenant valves and piping, directly attached to and serving machinery and equipment operated by the City.

2. All power boards and miscellaneous power panels for unit auxiliaries serving generating Units N1, N2, N3, N4, N5, and N6 and appurtenant equipment.

3. All tools accessory to generating Units N1, N2, N3, N4, N5, and N6 and appurtenant equipment.

4. All power and control cables and circuits directly serving generating Units N1, N2, N3, N4, N5, and N6 and appurtenant equipment.

5. All chemical and other fire-extinguishing equipment installed directly for the protection of equipment associated with generating Units N1, N2, N3, N4, N5, and N6, and equipment operated by the City.

6. All compressed air, and water facilities, directly attached to and serving the machinery and equipment operated by the City.

7. All grounding cables used for the grounding of equipment and appurtenances operated by the City, to the point where the grounding cable connects to the permanent grounding system and enters into the building concrete.

B. GENERATING MACHINERY, EQUIPMENT AND FACILITIES IN THE ARIZONA WING

1. Generating Units A1 and A2, when installed, complete with all incidental and appurtenant equipment and facilities, including among others, the following principal items:

Main turbine shut-off valves and all appurtenances, including by-pass valves, pipe and fittings;

Inlet pipes from main turbine shut-off valves to main turbine scroll cases;

Main turbines, governors, pressure regulating valves, and all machinery in connection therewith;

Draft tubes complete including discharge tubes from pressure regulating valves, and draft tube drainage facilities;

Main generators and exciters, including the generator water-cooling systems, housings, stairways, platforms, railings, gratings, and appurtenances installed in connection therewith, and all aluminum railings, battens, curbs, and head molds on the generator housings;

Generator-voltage switchgear, including oil circuit breakers, and disconnecting switches;

Generator-voltage lightning arresters and capacitors;

Current and potential transformers, reactors, and housing used on main circuit; all generator-voltage conductors, insulators,

and supports therefor, including bare and enclosed buses, bus supports, bare and insulated cable, cable clamps, potheads, and fittings;

Neutral oil circuit breakers, reactors, housings, and all other equipment and cable in neutral leads of main generators;

Main control equipment, including unit auxiliary control boards, generator control and excitation cubicles, annunciator systems, including visual and audible signals, but excluding the code call and telephone systems, control circuits, cable and fittings;

Battery distribution boards for main control equipment, oil circuit breakers and unit auxiliaries including the d. c. emergency lighting system supply and control switches, serving Units A1 and A2.

Lubricating oil, governor oil and insulating oil systems directly associated with the above-mentioned machinery, including indicators, thermometers, gages, filters, tanks, pumps, piping, valves, fittings and accessories;

All drainage equipment, including appurtenant valves and piping directly attached to and serving the machinery and equipment operated by the City.

2. All power boards and miscellaneous power panels for unit auxiliaries serving generating Units A1 and A2 and appurtenant equipment.

3. All tools accessory to generating Units A1 and A2, and appurtenant equipment.

4. All power and control cables and circuits directly serving generating Units A1 and A2 and appurtenant equipment.

5. All chemical and other fire extinguishing equipment installed directly for the protection of equipment associated with generating Units A1 and A2 and operated by the City.

6. All compressed air and water facilities serving the foregoing generating Units A1 and A2.

7. All grounding cables used for the grounding of equipment and appurtenances operated by the City to the point where the grounding cable connects to the permanent grounding system and enters into the building concrete.

C. MACHINERY, EQUIPMENT, AND FACILITIES IN THE CENTRAL SECTION

1. 8th Floor—Elevations 743.00 and 750 to 748.6

The main control equipment, including the main control bench boards complete with control switches and instruments, appertaining to the operation or control of, or accessory to, generating Units N1, N2, N3, N4, N5, and N6, A1 and A2, or to any of them;

The auxiliary control boards serving any of the aforesaid generating units;

All control cables and circuits and their appurtenances serving any of the aforesaid generating units;

The "master clock" time and frequency control circuits and equipment complete serving any of the aforesaid generating units.

The carrier-current and other telephone terminal equipment located in the telephone room on the Nevada side of the Central Section and connected with the City's privately owned communication system.

The carrier-current telephone circuit extending from the above-mentioned telephone room to the switchyard operated by the City.

2. 7th Floor—Elevation 730.25

The terminal board facilities and control cables, circuits, and their appurtenances, appertaining to the operation and control of or accessory to generating Units N1, N2, N3, N4, N5, N6, A1, and A2.

The "UL" board exclusive of panels 14 and 15.

3. 6th Floor—Elevation 717.67

All cables, circuits, and their appurtenances located on the 6th floor and serving generating Units N1, N2, N3, N4, N5, N6, A1, and A2, or any of them.

4. Other Floors

All control cables, circuits, and their appurtenances wherever located in the Central Section serving generating Units N1, N2, N3, N4, N5, N6, A1, and A2.

The 16.5 kv main transfer bus, and power cable circuits complete with supports extending across the power house Central Section.

All chemical and other fire extinguishing equipment installed in the Central Section for the protection of any of the machinery, equipment and associated facilities to be operated by the City.

Any and all other machinery, equipment and facilities not hereinabove specifically mentioned, located in the Central Section and installed for use in connection with the operation of the machinery and equipment herein designated for operation by the City, excepting common facilities mentioned in Part II of Exhibit "B."

D. SUBSTATIONS, SWITCHYARDS, AND TRANSMISSION LINES

1. The substations and switchyards at and near Boulder Dam which serve the city and the allottees and contractors (except for the maintenance and the making of replacements of the 33 kv Portal Substation supplying Boulder City) for whom the City is the designated generating agent, complete with all machinery, equipment and appurtenances, including the following principal items:

All relay and oil houses including relay boards, battery and battery chargers, oil piping to oil circuit breakers, and all other appurtenant equipment installed therein and thereon;

The switchyards and the substations, complete with transmission and diverter tower structures, foundations and footings, bare and insulated conductors and cables, insulators, cable clamps, potheads and fittings;

Oil circuit breakers, disconnecting switches, conductors and insulators and supports therefor;

All conduits, cables, fittings and related appurtenances within the fenced areas of such substations and switchyards and fences around the same;

All power supply circuit breakers, switches, control circuits, cables and appurtenant equipment between the power plant building and the switchyards serving the City and the allottees and contractors for whom the City generates energy, including the joint use power supply cables between the power plant building and the City relay house at the switchyard which services the City;

Fills, surfacing and retaining walls within the fenced areas of the switchyards operated by the City;

Switchyard underground grounding system networks located both in Nevada and Arizona serving equipment and facilities operated by the City to the point of attachment to the permanent grounding system at the power plant building;

The overhead ground wire system known as the lightning diverter system, complete with conductors and fittings, steel towers, foundations and footings.

2. The main transformers, transmission lines and power circuits between Generating Units N1, N2, N3, N4, N5, N6, A1, and A2, and between Banks "X" and "Y" and the above-included switchyards and substations, complete with all appurtenant equipment and facilities, including, among others, the following items:

Main power transformers, complete, including the water-cooling systems, gas apparatus, thermometers, indicators, gages, fittings, and accessories;

Fire protection system piping, buses and insulators;

High voltage equipment on power house roof consisting of disconnecting switches, lightning arresters, buses and cables, insulators, roof tower footings and appurtenant electrical circuits.

E. SPARE PARTS

Spare parts, wherever located at the project, designated for the machinery, equipment, and apparatus specified in this Exhibit A to be operated by the City.

PART II.—COMMON FACILITIES—PROPERTIES TO BE OPERATED BY
THE CITY WHICH ARE ALSO NECESSARY FOR USE IN CONNECTION
WITH THE PROPERTIES TO BE OPERATED BY THE COMPANY

A. MACHINERY, EQUIPMENT, AND FACILITIES IN THE CENTRAL SECTION
OF THE POWER HOUSE

1. Station service generating Unit "NO", and station service generator Unit "AO" until such time as said Unit "AO" shall have been connected to permit its use as an independent source of light and power for the Arizona wing of the power house and the related Arizona project works with control located in the Company's control room as provided in Exhibit "B", complete with all incidental and appurtenant equipment and facilities, including among others, the following principal items:

The turbines, the shut-off valves immediately upstream from the needle valves of each of the station service generating units (not including, however, the station service penstock header nor the laterals immediately upstream from said shut-off valves); generators; exciters; lubricating oil system; control bench board and control apparatus complete with control circuits; and the cables connecting said generators to the 2,300-volt switchgear.

2. The 2,300-volt "M" switchgear complete with controls and control cables and buses to the potheads of all outgoing feeders.

3. Power board "K" complete with power and control circuits and equipment therefor, and transformer banks serving said board complete, together with power cables serving such transformer banks from the 2,300-volt "M" switchgear.

4. The station service auxiliary transformer bank and all related equipment and facilities including power cables connecting same to the 2,300-volt "M" switchgear and the City's main 16,500-volt Nevada Wing transfer bus.

5. The 125- and 250-volt station storage batteries, including storage battery control boards and battery charging sets.

6. The clock supply power equipment complete with the "WF" board, except circuits serving machinery operated by the Company.

PART III.—GENERAL

For purposes of clarification there follows a description of properties in the power plant and immediate vicinity which are reserved for operation directly by the United States.

1. All of the power plant building.

2. Power plant lighting system from point where 2,300 volt feeder cables leave the 2,300-volt "M" switchgear and including transformers, low voltage circuits, controls, lighting fixtures, etc., including the

d. c. emergency lighting system from point of attachment to emergency throw-over switches.

3. Power plant heating and ventilating facilities except the generator cooling systems.

4. Power plant sanitary facilities.

5. Power plant compressed air system together with piping to the point of attachment to facilities operated by the City or the Company, including motors and load-side cables, appurtenant circuit breakers, current transformers and control circuits.

6. Power plant domestic and fire protection water systems including showers, and lavatory and toilet facilities.

7. All fire protection facilities except those directly attached to, or exclusively provided for, the protection of generating equipment and appurtenances, station power transformer vaults, high voltage transformers and oil storage and handling systems.

8. All elevators and appurtenant equipment.

9. All cranes and hoists including electrical circuits and control in connection therewith.

10. Electrical testing and standardization laboratories, including the high-potential test sets for generator and cable testing and equipment for generator testing.

11. Photographic dark room.

12. Machine shop and pipe shop including all machine tools, transfer cars, tool rooms, etc.

13. The control circuit tunnel between the City switchyard and the power house including cable trays and supports, hoist house complete with hoisting facilities.

14. All lighting, test, communication and code call circuits, exclusive of carrier current circuits.

15. All draft tube bulkhead gates.

16. Bulkhead gate gantry cranes, main transformer transfer car and gasoline tractor.

17. Automatic and manual telephone equipment exclusive of carrier current equipment.

18. All construction materials, equipment, and facilities.

19. The station service penstock header and valves and station service unit laterals to, but exclusive of, the shut-off valves immediately upstream from the needle valves of each of the station service generating units.

20. All dam and penstock lighting and power circuits from, but exclusive of, the 2,300-volt "M" switchgear.

21. Station service boards "E" and "F" on the second floor (Elevation 643) of the Central Section, transformer banks serving said boards complete, together with power cables serving such transformer banks from the 2,300-volt "M" switchgear.

22. The permanent grounding system, consisting of the grounding mats and connections under the forebay, dam, tailrace and power plant building, the imbedded network throughout the power plant building up to the point of emergence from the building concrete.

23. Roads, fills, and surfacing in the vicinity of the switch-yard areas but exclusive of those located within the fenced areas surrounding equipment operated by the City or the Company, and exclusive of access roads to transmission or diverter towers operated by the City or the Company.

24. All other machinery, equipment and facilities not designated in Exhibit A as property to be operated by the City or in Exhibit B as property to be operated by the Company.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

EXHIBIT B TO AGENCY CONTRACT

SPECIFICATIONS OF PROPERTIES OF THE UNITED STATES TO BE OPERATED, MAINTAINED, AND REPLACED BY THE SOUTHERN CALIFORNIA EDISON COMPANY, LTD.

OUTLINE

Definitions.

Part I—Properties to be operated by the Company:
A. Generating Machinery, Equipment, and Facilities in the Arizona Wing.
B. Machinery, Equipment, and Facilities in the Central Section.
C. Substations, Switchyards, and Transmission Lines.
D. Spare Parts.

Part II—Common Facilities—Properties to be Operated by the Company Which Are Also Necessary for use in Connection With the Properties to be Operated by the City:
A. Machinery, Equipment, and Facilities in the Central Section.

Part III—General.

EXHIBIT B

SPECIFICATIONS OF PROPERTIES OF THE UNITED STATES TO BE OPERATED, MAINTAINED, AND REPLACED BY THE COMPANY

DEFINITIONS

Wherever the following words occur in this exhibit, they shall have the meanings here given:

(a) The word "Company" means Southern California Edison Company Ltd.

(b) The word "City" means The City of Los Angeles and its Department of Water and Power.

(c) The word "Operate" means operate, maintain, and make replacements.

(d) The words "Central Section" mean (in general) all that portion of the power plant building founded in the main upon the dam, and located between the two powerhouse elevators.

(e) The words "Nevada Wing" mean that portion of the power plant building exclusive of the central section located in Nevada.

(f) The words "Arizona Wing" mean that portion of the power plant building exclusive of the central section located in Arizona.

(g) The word "joint-use"; applied to machinery, equipment, circuits, or other facilities, means that the use of such machinery, equipment, circuits, or other facilities is required jointly by the Company and the City, or the Company and the United States, or the City and the United States, or the Company, the City, and the United States.

PART I.—PROPERTIES TO BE OPERATED BY THE COMPANY

A. GENERATING MACHINERY, EQUIPMENT, AND FACILITIES IN THE ARIZONA WING

1. Generating units A6, A7, and A8, and, when installed, generating unit A5, complete with all incidental and appurtenant equipment and facilities, including among others, the following principal items:

Main turbine shut-off valves and all appurtenances, including by-pass valves, pipe, and fittings;

Inlet pipes from main turbine shut-off valves to main turbine scroll cases;

Main turbines, governors, pressure-regulating valves, and all machinery in connection therewith;

Draft tubes complete, including discharge tubes from pressure-regulating valves and draft-tube drainage facilities;

Main generators and exciters, including the generator water-cooling systems, housings, stairways, platforms, railings, gratings, and appurtenances installed in connection therewith, and all aluminum railings, battens, curbs, and head molds on generator housings;

Generator-voltage switchgear, including oil circuit breakers, and disconnecting switches;

Generator-voltage lightning arresters and capacitors;

Current and potential transformers and housings used on main circuits; all generator-voltage conductors, insulators, and supports therefor, including bare and enclosed buses, bus supports, bare and insulated cable, cable clamps, potheads, and fittings;

Ground detectors and all other equipment and cable in neutral leads of main generators;

Main control equipment including unit auxiliary control boards, terminal boards, generator control and excitation cubicles, annunciator systems, including visual and audible signals but excluding the code call and telephone systems, control circuits, cable and fittings; battery distribution boards for main control equipment, oil circuit breakers and unit auxiliaries, including the d. c. emergency lighting system supply and control switches serving units A-5, A-6, A-7, and A-8.

Lubricating oil, governor oil, and insulating oil systems directly associated with the above-mentioned machinery, including indicators, thermometers, gages, filters, tanks, pumps, piping, valves, fittings and accessories; including the Arizona oil storage facilities, tanks and oil house located in the Arizona Adit at El. 799.62, together with all related pipe, valves, pumps, purifiers, filters and fire protection facilities.

All drainage equipment, including appurtenant valves and piping, directly attached to and serving machinery and equipment operated by the Company.

2. All power boards and miscellaneous power panels for unit auxiliaries serving generating units A5, A6, A7, and A8 and appurtenant equipment.

3. All tools accessory to generating units A5, A6, A7, and A8 and appurtenant equipment.

4. All power and control cables and circuits directly serving generating units A5, A6, A7, and A8 and appurtenant equipment.

5. All chemical and other fire-extinguishing equipment installed directly for the protection of equipment associated with generating units A5, A6, A7, and A8 and equipment operated by the Company.

6. All compressed air, and water facilities, directly attached to and serving the machinery and equipment operated by the Company.

7. All grounding cables used for the grounding of equipment and appurtenances operated by the Company, to the point where the grounding cable connects to the permanent grounding system and enters into the building concrete.

B. MACHINERY, EQUIPMENT, AND FACILITIES IN THE CENTRAL SECTION

1. 8th Floor—Elevations 743.00 and 750 to 748.6

The main control equipment, including the main control bench boards complete with control switches and instruments, appertaining to the operation or control of, or accessory to, generating units A5, A6, A7, and A8, or to any of them;

The auxiliary control boards serving any of the aforesaid generating units;

All control cables and circuits and their appurtenances serving any of the aforesaid generating units;

The "master clock" time control circuits and equipment complete serving any of the aforesaid generating units;

The carrier-current and other telephone terminal equipment located in the telephone room on the Nevada side of the Central Section and connected with the Company's privately owned communication system;

The carrier-current telephone circuit extending from the above-mentioned telephone room to the switchyard operated by the Company.

2. 7th Floor—Elevation 730.25

The terminal board facilities and all control cables, circuits, and their appurtenances, appertaining to the operation and control of or accessory to generating units A5, A6, A7, and A8;

Panels 14 and 15 of the "UL" board;

3. 6th Floor—Elevation 717.67

All cables, circuits, and their appurtenances located on the 6th floor and serving generating units A5, A6, A7, and A8, or any of them.

4. Other Floors

All control cables, circuits, and their appurtenances, wherever located in the Central Section, serving generating units A5, A6, A7, and A8:

All chemical and other fire-extinguishing equipment installed in the Central Section for the protection of any of the machinery, equipment, and associated facilities to be operated by the Company;

Any and all other machinery, equipment, and facilities, not herein above specifically mentioned, located in the Central Section and installed for use in connection with the operation of the machinery and equipment herein designated for operation by the Company, excepting common facilities mentioned in A of Part II of Exhibit "A".

C. SUBSTATIONS, SWITCHYARDS, AND TRANSMISSION LINES

1. The switchyards at and near Boulder Dam which serve the Company and the allottees and contractors, for whom the Company is designated generating agent, complete with all machinery, equipment, and appurtenances, including the following principal items:

All relay and oil houses including relay boards, battery, and battery chargers, oil piping to oil circuit breakers and all other appurtenant equipment installed therein and thereon;

The switchyards complete with transmission tower structures, foundations and footings, bare and insulated conductors and cables, insulators, cable clamps, potheads, and fittings;

Oil circuit breakers, disconnecting switches, conductors and insulators and supports therefor;

All conduits, cables, fittings, and related appurtenances within the fenced areas of such switchyards, and fences around the same;

All power supply and control circuits and cables between the power-plant building and the switchyards serving the Company and the allottees and contractors for whom the Company generates energy, excluding however, the joint-use power supply cables between the power plant building and the City relay house at the switchyard which serves the City;

Fills, surfacing and retaining walls within the fenced areas of the switchyards operated by the Company;

Switchyard underground grounding system networks located both in Nevada and Arizona serving equipment and facilities operated by the Company, to the point of attachment to the permanent grounding system at the power-plant building.

2. The main transformers and transmission lines between generating units A5, A6, A7, and A8 and the above-included switchyards, complete with all appurtenant equipment and facilities, including among others, the following items:

Main power transformers complete, including the forced oil-cooling system, gas apparatus, thermometers, indicators, gages, fittings and accessories;

Pumps and heat exchangers;

Fire protection system piping, buses, and insulators;

Petersen coil;

High-voltage equipment on powerhouse roof consisting of disconnecting switches, lightning arresters, buses and cables, insulators, roof tower footings, and appurtenant electrical circuits;

The transmission tie line between the Company's and the Metropolitan Water District's switchracks.

D. SPARE PARTS

1. Spare parts, wherever located at the project, designated for the machinery, equipment, and apparatus specified in this Exhibit "B" to be operated by the Company.

PART II.—COMMON FACILITIES—PROPERTIES TO BE OPERATED BY THE COMPANY WHICH ARE ALSO NECESSARY FOR USE IN CONNECTION WITH PROPERTIES TO BE OPERATED BY THE CITY

A. MACHINERY, EQUIPMENT, AND FACILITIES IN THE CENTRAL SECTION OF THE POWERHOUSE

1. Station-service generating unit "AO", when that generator shall have been connected to permit its operation and use by the Company as an independent source of light and power for the Arizona wing of

the powerhouse and the related Arizona project works, such generating unit to include the turbines; the shutoff valves immediately upstream from the needle valves (but exclusive of the laterals from the station-service header to such valves and the station-service headers); generator; exciter; lubricating-oil system; control apparatus; and the circuit and switchgear connecting such generator to the Arizona section of the "M" switchgear and buses; that portion of the "M" switchgear and buses which will serve the Arizona side of the powerhouse; the control board serving such facilities; and such separate batteries, charging sets and controls for same, emergency service transformer banks, and other facilities as may be installed for use in connection with the operation of generating unit "AO" and in supplying light and power to the Arizona wing and related Arizona project works.

Such other and additional equipment and facilities as shall hereafter be installed for or in connection with the operation by the Company of Station Service generator "AO."

2. Power control board "L" complete with the power and the control circuits and equipment therefor; the transformer banks serving such board, and the leads from such transformer banks to the load side of the "M" switchgear breakers, excluding however all load-side cables, appurtenant circuit breakers and current transformers serving generating machinery which is to be operated by the City.

3. Clock supply circuits serving the machinery operated by the Company.

PART III.—GENERAL

For purposes of clarification the description of properties in the power plant and immediate vicinity which are reserved for operation directly by the United States as contained in Part III of Exhibit A shall be understood as also applying to this Exhibit B.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

EXHIBIT 2 TO AGENCY CONTRACT

BOULDER CANYON PROJECT

*GENERAL REGULATIONS FOR GENERATION AND SALE OF POWER IN
ACCORDANCE WITH THE BOULDER CANYON PROJECT ADJUSTMENT
ACT*

(NOTE.—Printed in full herein as Appendix 901.)

Appendix 903

POWER CONTRACTS:

STATE OF NEVADA, MAY 29, 1941

(Exhibits 1 and 2 omitted)

Symbol Itr-1338

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND THE STATE OF NEVADA

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and the STATE OF NEVADA, a body politic and corporate, and its Colorado River Commission (said Commission acting in the name of the State, but as principal in its own behalf as well as in behalf of the State; the term State as used in this contract being deemed to be both the State of Nevada and its Colorado River Commission), acting in pursuance of an act of the Legislature of the State of Nevada, entitled "An Act creating a commission to be known as the Colorado river commission of Nevada, defining its powers and duties, and making an appropriation for the expenses thereof, and repealing all acts and parts of acts in conflict with this act", approved

March 20, 1935 (Chapter 71, Stats. of Nevada, 1935), and acts amendatory thereof or supplementary thereto;

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege," dated April 26, 1930, with severally, The City of Los Angeles and its Department of Water and Power and Southern California Edison Company Ltd. (hereinafter referred to as the "City" and "Edison Company," respectively), which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease," and under date of May 6, 1936, the parties hereto entered into a certain contract for electrical energy, which contract was amended under dates of April 23, 1938, December 7, 1939, and December 19, 1940, such contract as so amended and modified being hereinafter collectively referred to as the "Original Contract"; and

3. Whereas, by the terms of the Adjustment Act it is provided among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2"; and

6. Whereas the State, the cities of Burbank, Glendale, and Pasadena (hereinafter referred to as "the Municipalities") and the City have made a joint request on the United States that the provisions of Article 9 (b) hereof be incorporated as a part of each of the contracts, under the Adjustment Act, for the sale of electrical energy by the United States to the State, the Municipalities and the City, respectively;

7. Now, therefore, in consideration of the provisions, covenants and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The State hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the State under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the State as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the State agrees to take and/or pay for, electrical energy for use by it (directly or under contract) in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with notices of withdrawal of energy and notices of relinquishment of energy given as provided in Exhibit 2.

(b) From the effective date of this contract and until Section G-3 has been placed in operation, Section G-1 shall be used for the service of the City, the Municipalities, the United States, the State and such resale consumers of energy allocated to but not taken by The Metropolitan Water District of Southern California as are now served by Section G-1.

After said Section G-3 has been placed in operation, said Section G-1 shall be used solely for the service of the City and the Municipalities and the United States, and said Section G-3 shall be used solely for the service of the City and the United States, except that the States of Nevada and Arizona shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceed-

ing a combined demand of 44,000 kilowatts, and such resale consumers shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 6,000 kilowatts plus such portion of said 44,000 kilowatts as is not in use or required by the States; provided, that such resale consumers shall not be entitled to take in excess of 70,000,000 kilowatt-hours of electrical energy in any one year of operation.

The fact that energy generated by means of Section G-3 may in fact reach any of said Municipalities, shall not be deemed to be in violation of the foregoing provisions.

The foregoing provisions of this Article 9 (b) relate only to operating conditions, and are not to be construed as an agreement, contemplated by Article 18 of Exhibit 2, relating to or affecting in any way the apportionment of generating charges. Notwithstanding the operating conditions provided for in this Article 9 (b), generating charges for Sections G-1 and G-3 shall be considered as charges for a single section and shall be apportioned in accordance with the provisions of Article 18 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) The statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the State, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact; the United States will deliver to the State energy in the manner required by this contract, in the quantity to which the State is entitled hereunder, and in accordance with the State's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the State reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation

with the State, at such times and in such manner as to cause the least inconvenience to the State, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced. *

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the State, be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy shall be measured at generator voltage. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated the same provisions shall apply as nearly as may be.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the State for electrical energy under this contract shall be in accordance with those specified in Exhibit 2.

BILLING AND PAYMENTS

13. (a) The State shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. The energy bill for each month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14 hereof, and the sum of the amounts charged for firm energy during the preceding eleven months. The United States will submit bills to the State by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

14. The minimum quantity of firm energy which the State shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be the total kilowatt hours

stated in notices of withdrawal which are in effect as of June 1 of such year of operation as properly adjusted to account for the number of kilowatt hours for the remainder of such year of operation added or subtracted by notices of withdrawal or relinquishment becoming effective during such year of operation. No period of less than one day will be considered in making such adjustments. The total amount of energy for which notices of withdrawal are in effect as of June 1, 1941, shall be thirty-five million eight hundred thousand (35,800,000) kilowatt-hours. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective. The original contract between the parties hereto shall terminate as of such effective date.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void, and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The State, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the State dependent for its usefulness on a continuation of this contract be purchased or acquired, and the State be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the State if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

18. If the State shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the State to terminate this contract; provided, that the State shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination and compensation to the allottees affected for property rendered idle by such reinstatement. If the State and the allottees affected fail to agree on such compensation, the disagreement shall be determined by arbitration as provided in Article 25 of Exhibit 2. Nothing contained in this contract shall relieve the State from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the State to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the State relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation, and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses, and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modifications, extension, or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions, or requirements of any regulation or contract, promulgated or executed subsequent to

May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to the State.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the State as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the State on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the State shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the State hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the State, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to

the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

NOTICES

27. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the State shall be delivered, or mailed postage prepaid, to the Secretary of the Colorado River Commission of Nevada, Carson City, Nevada.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

28. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

29. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES, *Secretary of the Interior.*
STATE OF NEVADA, acting by and through its
Colorado River Commission,

By (S) E. P. CARVILLE, *Chairman.*

Attest:

(S) ALFRED MERRITT SMITH, *Secretary.*

[SEAL] COLORADO RIVER COMMISSION OF NEVADA,

By (S) E. P. CARVILLE, *Chairman.*

Attest:

(S) ALFRED MERRITT SMITH, *Secretary.*

Ratified and approved this 28th day of May 1941:

(S) E. P. CARVILLE, *Governor of the State of Nevada.*

Approved as to form:

(S) GRAY MASHBURN, *Attorney-General of Nevada.*

Appendix 904

POWER CONTRACTS:

**ARIZONA POWER AUTHORITY, NOVEMBER 23,
1945**

(Exhibits 1 and 2 omitted)

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 23rd day of November 1945, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and the ARIZONA POWER AUTHORITY, a body corporate and politic (hereinafter referred to as the "State"), acting in pursuance of an Act of the Legislature of the State of Arizona entitled "An Act creating and establishing the Power Authority of the State of Arizona as a body corporate and politic, describing its nature, scope, general and special jurisdiction and authority, powers, government, personnel and routine: providing for the construction of power projects, works, and facilities; prescribing also functional and operating features; relating to surveys, plans, investigations, and construction; providing for its fiscal powers, income, revenue, tolls, and charges for electricity; and making an appropriation, repealing conflicting statutes, making provisions separable, and declaring an emergency,"

A357

approved March 27, 1944 (Chapter 32, Session Laws of Arizona, 1944, Second Special Session of the Sixteenth Legislature);

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege," dated April 26, 1930, with severally, The City of Los Angeles and its Department of Water and Power and Southern California Edison Company Ltd. (hereinafter referred to as the "City" and "Edison Company," respectively), which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease"; and

3. Whereas, by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2"; and

6. Whereas, at the joint request of the State of Nevada, the cities of Burbank, Glendale, and Pasadena (hereinafter referred to as "the Municipalities"), and the City, provisions substantially similar, in so far as applicable to this contract, to the provisions of Article 11 (b) hereof were incorporated in contracts, under the Adjustment Act, for the sale of electrical energy by the United States to the State of Nevada, the Municipalities and the City, respectively;

7. Now, therefore, in consideration of the provisions, covenants and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The State hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the State under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the State as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

TERMS FOR WITHDRAWAL OF ENERGY

9. No notice of withdrawal of energy shall be given to the United States by the State unless and until the State shall have previously or simultaneously procured a purchaser or purchasers therefor and (1) such purchaser or purchasers shall have furnished an indemnity bond, by a corporation qualified under the laws of the State, payable to the State and the United States, jointly and severally, in an amount equal to the maximum obligation of such purchaser or purchasers for the energy withdrawn for its or their use and benefit for the period of time required by the State to effectively relinquish the energy withdrawn for such purchaser or purchasers, and conditioned for the full and faithful performance of the contract or other agreement of purchase, or (2) until such purchaser or purchasers shall have furnished in lieu of such indemnity bond other collateral satisfactory to the State and to the United States.

WHEN ENERGY REQUIRED TO BE RELINQUISHED

10. In event of termination or other abrogation of any contract or agreement of purchase of energy from the State, the State shall promptly give the United States notice of relinquishment of the energy withdrawn for such purchaser, unless within ninety (90) days there-

after the State shall enter into a contract or contracts with another purchaser or purchasers for the energy covered by such terminated or abrogated contract, and shall require such purchaser or purchasers to furnish bond in the same amount as though such energy had been withdrawn for its or their use and benefit.

DELIVERY OF ENERGY

11. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the State agrees to take and/or pay for, electrical energy for use by it (directly or under contract) in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with notices of withdrawal of energy and notices of relinquishment of energy given as provided in Exhibit 2.

(b) Section G-1 shall be used solely for the service of the City and the Municipalities and the United States, and Section G-3 shall be used solely for the service of the City and the United States, except that the States of Nevada and Arizona shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 44,000 kilowatts, and such resale consumers of energy allocated to but not taken by The Metropolitan Water District of Southern California as were served by said Section G-1 on May 29, 1941, shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 6,000 kilowatts plus such portion of said 44,000 kilowatts as is not in use or required by the States; provided, that such resale consumers shall not be entitled to take in excess of 70,000,000 kilowatt-hours of electrical energy in any one year of operation.

The fact that energy generated by means of Section G-3 may in fact reach any of said Municipalities, shall not be deemed to be in violation of the foregoing provisions.

The foregoing provisions of this Article 11 (b) relate only to operating conditions, and are not to be construed as an agreement, contemplated by Article 18 of Exhibit 2, relating to or affecting in any way the apportionment of generating charges. Notwithstanding the operating conditions provided for in this Article 11 (b), generating charges for Sections G-1 and G-3 shall be considered as charges for a single section and shall be apportioned in accordance with the provisions of Article 18 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

12. (a) Subject to—

(i) The statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regula-

tion, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the State, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact; the United States will deliver to the State energy in the manner required by this contract, in the quantity to which the State is entitled hereunder, and in accordance with the State's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the State reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with the State, at such times and in such manner as to cause the least inconvenience to the State, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the State, be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 16 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents and/or employees, for any damage, direct or indirect.

arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 12. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

13. All electrical energy shall be measured at generator voltage. In all instances in which energy shall be delivered to the State over the facilities of others, such energy shall be measured in combination with all energy delivered over such facilities. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. Suitable metering equipment, satisfactory to the United States, for measuring the energy actually delivered to the State shall be provided, as agreed to by the owner or owners of the facilities over which such energy is transmitted and the State, and if necessary suitable correction shall be made to cover transmission and transformer losses to determine the amount of energy delivered to the State, at transmission voltage at Boulder Power Plant. The United States' determination of said amount shall be conclusive. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated, the same provisions shall apply as nearly as may be.

ENERGY RATES AND GENERATING CHARGES

14. The rates and charges to be paid by the State for electrical energy under this contract shall be in accordance with those specified in Exhibit 2.

BILLING AND PAYMENTS

15. (a) The State shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. The energy bill for each month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 16 hereof,

and the sum of the amounts charged for firm energy during the preceding eleven months. The United States will submit bills to the State by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due, an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

16. The minimum quantity of firm energy which the State shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be the total kilowatt hours stated in notices of withdrawal which are in effect as of June 1 of such year of operation as properly adjusted to account for the number of kilowatt hours for the remainder of such year of operation added or subtracted by notices of withdrawal or relinquishment becoming effective during such year of operation. No period of less than one day will be considered in making such adjustments. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 12 hereof.

DURATION OF CONTRACT

17. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The State, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and

regulations, unless the property of the State dependent for its usefulness on a continuation of this contract be purchased or acquired, and the State be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

18. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the State if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

19. If the State shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the State to terminate this contract; provided, that the State shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination and compensation to the allottees affected for property rendered idle by such reinstatement. If the State and the allottees affected fail to agree on such compensation, the disagreement shall be determined by arbitration as provided in Article 25 of Exhibit 2. Nothing contained in this contract shall relieve the State from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the State to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

20. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the State relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

21. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction,

operation and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

22. Any modifications, extension, or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions, or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to the State.

DISPUTES AND DISAGREEMENTS

23. Disputes or disagreements between the United States and the State as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the State on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the State shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

24. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

25. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

26. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

27. No voluntary transfer of this contract, or of the rights of the State hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the State, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

NOTICES

28. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the State shall be delivered, or mailed postage prepaid, to the Secretary of the Arizona Power Authority, Phoenix, Arizona.

(c) The designation of any person specified in this article or in any such request or notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

29. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the

United States, its officers, agents, or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

30. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By HAROLD L. ICKES,
Secretary of the Interior.

ARIZONA POWER AUTHORITY,
By M. J. DOUGHERTY, *Chairman.*

Attest:

[SEAL]

MILDRED McCLAIN, *Secretary.*

 COMMISSION RESOLUTION #5-45

Be it *Resolved*, That this Authority enter into that certain Agreement between the said Authority and the United States of America, acting in this behalf by the Secretary of the Interior, and constituting terms and conditions for obtaining Boulder Dam power by the said Authority as an agency of the State of Arizona and that, pursuant to the Routine Rules and Regulations, the Chairman and Secretary be, and they are hereby, directed and instructed to sign and deliver the same.

[SEAL]

/s/ M. J. DOUGHERTY, *Chairman.*

Attest:

/s/ MILDRED McCLAIN, *Secretary.*

* * *

I hereby certify that the foregoing is a true and correct copy of Resolution #5-45 adopted by the Arizona Power Authority Commission at a regularly called meeting, attended by all Commissioners, on the 23rd day of November 1945, and that the same has been filed in the records of said Authority.

[SEAL]

/s/ MILDRED McCLAIN, *Secretary.*

Appendix 905

**POWER CONTRACTS:
METROPOLITAN WATER DISTRICT OF SOUTH-
ERN CALIFORNIA, MAY 29, 1941**

(Exhibits 1 and 2 omitted)

Symbol Itr-1336

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND THE METROPOLITAN WATER
DISTRICT OF SOUTHERN CALIFORNIA

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation organized and existing under the laws of the State of California (hereinafter referred to as the "District");

Witnesseth that—

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract

for Lease of Power Privilege," dated April 26, 1930, with severally, The City of Los Angeles and its Department of Water and Power (hereinafter collectively referred to as the "City") and Southern California Edison Company, Ltd. (hereinafter referred to as "Edison Company") which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease"; and

3. Whereas, under date of April 26, 1930, the parties hereto entered into a certain contract for electrical energy, which contract was amended under date of May 31, 1930, and was also modified by a certain contract between the parties hereto, dated July 13, 1938, such contract as so amended and modified being hereinafter collectively referred to as the "Original Contract"; and

4. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of Boulder Power Plant; and

5. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

6. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2";

7. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

§
REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The District hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance

with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the District under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the District as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the District agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2; provided, that the United States shall have the right to interchange energy from its hydroelectric plants on the Colorado River below Boulder Dam with energy allocated to the District and generated at Boulder Power Plant, and to deliver energy at the point of connection of such other hydroelectric plants to the District's transmission line in lieu of delivering energy at Boulder Power Plant, insofar as such interchange can be effected without interfering with service to, or increasing the charges against, the District and without impairing or extending the rights or obligations, respectively, of other allottees. The District agrees that the United States may so interchange energy insofar as practicable, as a means of effecting integration of operations as between Boulder Power Plant and other projects on the Colorado River owned and operated by the United States at which power is or may be developed, as the primary step in any program of integration of operations agreed upon, decided, or determined pursuant to Article 20 (b) of Exhibit 1. For the purpose of effectuating such interchange, the United States shall have the right to connect, without cost to the District, such other hydroelectric plants with the transmission system of the District, and the right to use, without cost to the United States, any power-transmission capacity of said transmission system which for the time being may be in excess of the District's requirements; provided, that the use of such excess capacity at all times shall be subject to reasonable operating conditions fixed by the District. The District shall have the opportunity to present its views to the Secretary or his representative on the electrical characteristics of the generating and transforming equipment to be used to supply energy from power plants other than Boulder Power Plant under this Article 9 (a) before proposals for the furnishing of the same are invited. The design and

specifications of any connections with the District's transmission system shall conform to specifications approved by the General Manager and Chief Engineer of the District.

(b) Section G-2 and T-2, described in Exhibit 2, shall be used solely for the service of the District, subject to Article 15 of Exhibit 1 and Article 20 of Exhibit 2. If, after giving the District an opportunity to present its views, the Secretary shall find it to be necessary or economically advantageous to provide service to resale consumers of energy allocated to but unused by the District, by means of equipment herein designated for service to the District, or any additions thereto necessary for such service to the District and to such resale consumers, the District hereby consents to such use of said equipment, and to such additions thereto. The District further agrees to pay the generating charges in the manner prescribed by Exhibit 2, attributable to equipment so used for the service of such resale consumers, less payments therefor made to the United States by such resale consumers.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the District, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver to the District energy in the manner required by this contract, in the quantity to which the District is entitled hereunder, and in accordance with the District's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the District reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with the District, at such times and in such manner as to cause the

least inconvenience to the District and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the District, be discontinued or (after application of the agreement for interchange of energy as hereinabove set out) be reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause, nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy delivered at Boulder Power Plant shall be measured at generator voltage. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available. Energy delivered to the District at points other than Boulder Dam shall be measured by meters furnished and maintained by the United States. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated the same provisions shall apply as nearly as may be.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the District for electrical energy under this contract shall be in accordance with those specified in Exhibit 2. The right of the District to take energy at the rate for secondary energy shall not be impaired by reason of the fact that another allottee has not discharged its obligation to pay for energy at the firm rate.

BILLING AND PAYMENTS

13. (a) The District shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. When energy taken in any month is not in excess of one-twelfth (1/12) of the minimum annual obligation, as determined under subdivisions (a) and (b) of Article 14 hereof, the energy bill for such month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month. All energy used during any month in excess of one-twelfth (1/12) of such minimum annual obligation for firm energy shall be paid for at the rate for secondary energy in effect when such energy was taken; provided, however, that the secondary rate shall not apply to any energy taken during any month unless and until an amount of energy equivalent to one-twelfth (1/12) of such minimum annual obligation for firm energy has been taken for all months, beginning with the month of June immediately preceding; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14, hereof, and the sum of the amounts charged for firm energy during the preceding eleven months, but in no event shall the sum of the amounts charged for energy for any year of operation exceed the product of the minimum quantity of firm energy which the District is obligated to take and/or pay for in such year of operation and the firm energy rate; plus the product of the quantity of energy taken by the District in such year of operation in excess of its firm energy obligation and the secondary energy rate. The United States will submit bills to the District by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner

abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

(c) During any year beginning June 1, the District shall not use any secondary energy nor any unused State energy until it has first used subsequent to June 1 next preceding an amount of firm energy equivalent to one-twelfth of the amount of firm energy it is obligated to take and/or pay for annually, as determined under subdivisions (a) and (b) of Article 14 hereof, multiplied by the number of months elapsed since June 1 next preceding.

MINIMUM ANNUAL PAYMENT

14. (a) The minimum quantity of firm energy which the District shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 35.2517 per centum of all firm energy as defined in Article 3 of Exhibit 2. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof.

(b) *Absorption Period:* In order to afford a reasonable time for the District to absorb the energy contracted for, in determining the minimum annual payments for energy charges for firm energy for the year of operation ending May 31, 1942, the number of kilowatt-hours of firm energy which the District is obligated to take and/or pay for in the year of operation ending May 31, 1942, shall be 1,495,380,088 kilowatt-hours. If the quantity of energy taken in said year of operation is in excess of the above stated amount, such excess shall be paid for at the rate for secondary energy.

(NOTE.—Subdivisions (c), (d), and (e) of Article 14 were eliminated by amendatory contract Ilr-1336 dated November 1, 1944.)

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight,

Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective. The original contract between the parties hereto shall terminate as of such effective date.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The District, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the District dependent for its usefulness on a continuation of this contract be purchased or acquired, and the District be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has first been obtained from the Secretary in writing, no energy shall be generated for, or delivered to, the District if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

18. If the District shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the District to terminate this contract and dispose of the energy herein allocated to the District as he may see fit; provided, he shall first give opportunity to the City and Edison Company to contract on equal and uniform terms and conditions, to be prescribed by the Secretary, for one-half of such energy, together with such portion of the remainder as the other shall not elect to take; and provided further, that such disposition shall be subject to the condition that the District shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by

the United States by reason of such termination. Nothing contained in this contract shall relieve the District from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the District to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the District relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation, and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses, and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modification, extension, or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions, or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees, shall not be denied to the District.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the District as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the District on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the District shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name

such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other or subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the District hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the District, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

NOTICES

27. (a) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the District shall be delivered,

or mailed postage prepaid, to the General Manager and Chief Engineer of The Metropolitan Water District of Southern California, Los Angeles, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

28. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

29. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES,
Secretary of the Interior.

THE METROPOLITAN WATER
DISTRICT OF SOUTHERN
CALIFORNIA,

[SEAL]
By (S) F. E. WEYMOUTH,
General Manager and Chief Engineer.

Attest:

(S) A. L. GRAM,
Executive Secretary.

Approved as to form:

(S) JAMES H. HOWARD,
General Counsel.

Appendix 906

**POWER CONTRACTS:
CITY OF PASADENA, MAY 29, 1941**

(Exhibits 1 and 2 omitted)

Symbol Nr-1337

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

**BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA**

THE UNITED STATES OF AMERICA AND THE CITY OF PASADENA
CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and the CITY OF PASADENA, a municipal corporation organized and existing under the laws of the State of California (hereinafter referred to as the "Municipality");

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege," dated April 26, 1930, with severally, The City of Los Angeles and its Department of Water and Power and Southern California Edison Company Ltd. (hereinafter referred to as

the "City" and "Edison Company," respectively), which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease," and under date of September 29, 1931, the parties hereto entered into a certain contract for electrical energy, which contract was amended under date of October 30, 1934, such contract as so amended and modified being hereinafter collectively referred to as the "Original Contract"; and

3. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant", a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act", a copy of which is attached hereto, marked "Exhibit 2"; and

6. Whereas the State of Nevada, the cities of Burbank, Glendale, and Pasadena (hereinafter referred to as "the Municipalities") and the City have made a joint request on the United States that the provisions of Article 9 (b) hereof be incorporated as a part of each of the contracts, under the Adjustment Act, for the sale of electrical energy by the United States to the State of Nevada, the Municipalities, and the City, respectively;

7. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The Municipality hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the Municipality under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the Municipality as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the Municipality agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2.

(b) From the effective date of this contract and until Section G-3 has been placed in operation, Section G-1 shall be used for the service of the City, the Municipalities, the United States, the State of Nevada, and such resale consumers of energy allocated to but not taken by The Metropolitan Water District of Southern California as are now served by Section G-1.

After said Section G-3 has been placed in operation, said Section G-1 shall be used solely for the service of the City and the Municipalities and the United States, and said Section G-3 shall be used solely for the service of the City and the United States, except that the States of Nevada and Arizona shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 44,000 kilowatts, and such resale consumers shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 6,000 kilowatts plus such portion of said 44,000 kilowatts as is not in use or required by the States; provided, that such resale consumers shall not be entitled to take in excess of 70,000,000 kilowatt-hours of electrical energy in any one year of operation.

The fact that energy generated by means of Section G-3 may in fact reach any of said Municipalities, shall not be deemed to be in violation of the foregoing provisions.

The foregoing provisions of this Article 9 (b) relate only to operating conditions, and are not to be construed as an agreement, contemplated by Article 18 of Exhibit 2, relating to or affecting in any way the apportionment of generating charges. Notwithstanding the operating conditions provided for in this Article 9 (b), generating charges for Sections G-1 and G-3 shall be considered as charges for a single section and shall be apportioned in accordance with the provisions of Article 18 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the Municipality, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver to the Municipality energy in the manner required by this contract, in the quantity to which the Municipality is entitled hereunder, and in accordance with the Municipality's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the Municipality reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with the Municipality, at such times and in such manner as to cause the least inconvenience to the Municipality, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the Municipality, be discontinued or reduced below the amount required for the generation of firm energy in

accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents, and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy shall be measured at generator voltage in combination with energy delivered to the City. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. Suitable metering equipment, satisfactory to the Secretary, for measuring the energy actually delivered to the Municipality shall be provided, as agreed to by the City and the Municipality, and suitable correction shall be made to cover transmission line and transformer losses to determine the amount of energy delivered to the Municipality at transmission voltage at Boulder Power Plant. The Secretary's determination of said amount shall be conclusive. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated the same provisions shall apply as nearly as may be.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the Municipality for electrical energy under this contract shall be in accordance with those specified in Exhibit 2.

BILLING AND PAYMENTS

13. (a) The Municipality shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. The energy bill for each month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14 hereof, and the sum of the amounts charged for firm energy during the preceding eleven months. The United States will submit bills to the Municipality by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

14. The minimum quantity of firm energy which the Municipality shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 1.5847 per centum of all firm

energy as defined in Article 3 of Exhibit 2. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective. The original contract between the parties hereto shall terminate as of such effective date.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void, and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The Municipality, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the Municipality dependent for its usefulness on a continuation of this contract be purchased or acquired, and the Municipality be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the Municipality if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

18. If the Municipality shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice

to the Municipality to terminate this contract and dispose of the energy herein allocated to the Municipality as he may see fit; provided, he shall first give opportunity to the City to contract on terms and conditions to be prescribed by the Secretary, for such energy, and provided further, that such disposition shall be subject to the condition that the Municipality shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination. Nothing contained in this contract shall relieve the Municipality from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the Municipality to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the Municipality relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modification, extension or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions, or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to the Municipality.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the Municipality as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the Municipality on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration, the Secretary shall name one arbitrator and the Municipality shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the Municipality hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the Municipality, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

TRANSMISSION

27. The City shall continue to transmit over its main transmission line constructed for carrying Boulder Canyon energy all such energy allocated to, and used by, the City of Burbank, the City of Glendale, and the City of Pasadena, severally, in accordance with contracts between the City and each of said municipalities, made pursuant to Section 5 (d) of the Project Act, as said contracts now exist or as they may be hereafter modified or amended; and accordingly the delivery of energy provided for herein shall be made by the United States to the City for the Municipality.

NOTICES

28. (a) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the Municipality shall be delivered, or mailed postage prepaid, to the City Manager of the City of Pasadena, Pasadena, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

29. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

30. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written:

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES,
Secretary of the Interior.

THE CITY OF PASADENA,

[SEAL]

By (S) A. I. STEWART,
Chairman of the Board of Directors.

Approved as to form:

(S) HAROLD P. HULS,
City Attorney.

Attest:

(S) BESSIE CHAMBERLAIN,
City Clerk of the City of Pasadena.

Approved:

(S) B. F. DEHANTY.

Appendix 907

POWER CONTRACTS:

CITY OF BURBANK, MAY 29, 1941

(Exhibits 1 and 2 omitted)

Symbol Ir-1339

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND THE CITY OF BURBANK

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, 11 of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and the CITY OF BURBANK, a municipal corporation organized and existing under the laws of the State of California (hereinafter referred to as the "Municipality");

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege," dated April 26, 1930, with severally, The City of Los Angeles and its Department of Water and Power and Southern California Edison Company Ltd. (hereinafter referred to as

the "City" and "Edison Company," respectively), which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City; dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease," and under date of November 10, 1931, the parties hereto entered into a certain contract for electrical energy, which contract was amended under date of October 30, 1934, such contract as so amended and modified being hereinafter collectively referred to as the "Original Contract"; and

3. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2"; and

6. Whereas the State of Nevada, the cities of Burbank, Glendale, and Pasadena (hereinafter referred to as "the Municipalities") and the City have made a joint request on the United States that the provisions of Article 9 (b) hereof be incorporated as a part of each of the contracts, under the Adjustment Act, for the sale of electrical energy by the United States to the State of Nevada, the Municipalities, and the City, respectively;

7. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The Municipality hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the Municipality under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the Municipality as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the Municipality agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2.

(b) From the effective date of this contract and until Section G-3 has been placed in operation, Section G-1 shall be used for the service of the City, the Municipalities, the United States, the State of Nevada, and such resale consumers of energy allocated to but not taken by The Metropolitan Water District of Southern California as are now served by Section G-1.

After said Section G-3 has been placed in operation, said Section G-1 shall be used solely for the service of the City and the Municipalities and the United States, and said Section G-3 shall be used solely for the service of the City and the United States, except that the States of Nevada and Arizona shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 44,000 kilowatts, and such resale consumers shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 6,000 kilowatts plus such portion of said 44,000 kilowatts as is not in use or required by the States; provided, that such resale consumers shall not be entitled to take in excess of 70,000,000 kilowatt hours of electrical energy in any one year of operation.

The fact that energy generated by means of Section G-3 may in fact reach any of said Municipalities, shall not be deemed to be in violation of the foregoing provisions.

The foregoing provisions of this Article 9 (b) relate only to operating conditions, and are not to be construed as an agreement, contemplated by Article 18 of Exhibit 2, relating to or affecting in any way the apportionment of generating charges. Notwithstanding the operating conditions provided for in this Article 9 (b), generating charges for Sections G-1 and G-3 shall be considered as charges for a single section and shall be apportioned in accordance with the provisions of Article 18 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the Municipality, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver to the Municipality energy in the manner required by this contract, in the quantity to which the Municipality is entitled hereunder, and in accordance with the Municipality's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the Municipality reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with the Municipality, at such times and in such manner as to cause the least inconvenience to the Municipality, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the Municipality, be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which

the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy shall be measured at generator voltage in combination with energy delivered to the City. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. Suitable metering equipment, satisfactory to the Secretary, for measuring the energy actually delivered to the Municipality shall be provided, as agreed to by the City and the Municipality, and suitable correction shall be made to cover transmission line and transformer losses to determine the amount of energy delivered to the Municipality at transmission voltage at Boulder Power Plant. The Secretary's determination of said amount shall be conclusive. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated the same provisions shall apply as nearly as may be.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the Municipality for electrical energy under this contract shall be in accordance with those specified in Exhibit 2.

BILLING AND PAYMENTS

13. (a) The Municipality shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. The energy bill for each month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14 hereof, and the sum of the amounts charged for firm energy during the preceding eleven months. The United States will submit bills to the Municipality by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4(b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

14. The minimum quantity of firm energy which the Municipality shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 0.5773 per centum of all firm energy as defined in Article 3 of Exhibit 2. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective. The original contract between the parties hereto shall terminate as of such effective date.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void, and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The Municipality, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the Municipality dependent for its usefulness on a continuation of this contract be purchased or acquired, and the Municipality be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the Municipality if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

18. If the Municipality shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the Municipality to terminate this contract and dispose of the energy herein allocated to the Municipality as he may see fit; pro-

vided, he shall first give opportunity to the City to contract on terms and conditions to be prescribed by the Secretary, for such energy, and provided further, that such disposition shall be subject to the condition that the Municipality shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination. Nothing contained in this contract shall relieve the Municipality from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the Municipality to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the Municipality relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modification, extension or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to the Municipality.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the Municipality as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the Municipality on the demand

or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the Municipality shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the Municipality hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the Municipality, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

TRANSMISSION

27. The City shall continue to transmit over its main transmission line constructed for carrying Boulder Canyon energy all such energy allocated to, and used by, the City of Burbank, the City of Glen-

dale, and the City of Pasadena, severally, in accordance with contracts between the City and each of said municipalities, made pursuant to Section 5 (d) of the Project Act, as said contracts now exist or as they may be hereafter modified or amended; and accordingly the delivery of energy provided for herein shall be made by the United States to the City for the Municipality.

NOTICES

28. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the Municipality shall be delivered, or mailed postage prepaid, to the City Manager of the City of Burbank, Burbank, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

29. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

30. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES,
Secretary of the Interior.

CITY OF BURBANK,
By (S) WALTER R. HINTON, *Mayor.*

Attest:

(S) R. H. HILL,
City Clerk of the City of Burbank.

Approved as to form:

(S) RALPH W. SWAGLER,
City Attorney.

Appendix 908

**POWER CONTRACTS:
CITY OF GLENDALE, MAY 29, 1941**

(Exhibits 1 and 2 omitted)

Symbol Itr-1340

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND THE CITY OF GLENDALE

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and the CITY OF GLENDALE, a municipal corporation organized and existing under the laws of the State of California (hereinafter referred to as the "Municipality");

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege," dated April 26, 1930, with severally, the City of Los Angeles and its Department of Water and Power and Southern California Edison Company Ltd. (hereinafter referred to as the "City" and "Edison Company," respectively), which contract

was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease," and under date of November 12, 1931, the parties hereto entered into a certain contract for electrical energy, which contract was amended under date of November 1, 1934, such contract as so amended and modified being hereinafter collectively referred to as the "Original Contract"; and

3. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2"; and

6. Whereas the State of Nevada, the cities of Burbank, Glendale and Pasadena (hereinafter referred to as "the Municipalities") and the City have made a joint request on the United States that the provisions of Article 9 (b) hereof be incorporated as a part of each of the contracts, under the Adjustment Act, for the sale of electrical energy by the United States to the State of Nevada, the Municipalities and the City, respectively;

7. Now, therefore, in consideration of the provisions, covenants and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The Municipality hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to

be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the Municipality under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the Municipality as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the Municipality agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2.

(b) From the effective date of this contract and until Section G-3 has been placed in operation, Section G-1 shall be used for the service of the City, the Municipalities, the United States, the State of Nevada and such resale consumers of energy allocated to but not taken by The Metropolitan Water District of Southern California as are now served by Section G-1.

After said Section G-3 has been placed in operation, said Section G-1 shall be used solely for the service of the City and the Municipalities and the United States, and said Section G-3 shall be used solely for the service of the City and the United States, except that the States of Nevada and Arizona shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 44,000 kilowatts, and such resale consumers shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 6,000 kilowatts plus such portion of said 44,000 kilowatts as is not in use or required by the States; provided, that such resale consumers shall not be entitled to take in excess of 70,000,000 kilowatt hours of electrical energy in any one year of operation.

The fact that energy generated by means of Section G-3 may in fact reach any of said Municipalities, shall not be deemed to be in violation of the foregoing provisions.

The foregoing provisions of this Article 9 (b) relate only to operating conditions, and are not to be construed as an agreement, contemplated by Article 18 of Exhibit 2, relating to or affecting in any way the apportionment of generating charges. Notwithstanding the operating

conditions provided for in this Article 9 (b), generating charges for Sections G-1 and G-3 shall be considered as charges for a single section and shall be apportioned in accordance with the provisions of Article 18 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the Municipality, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver to the Municipality energy in the manner required by this contract, in the quantity to which the Municipality is entitled hereunder, and in accordance with the Municipality's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the Municipality reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with the Municipality, at such times and in such manner as to cause the least inconvenience to the Municipality, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the Municipality, be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced

and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents, and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy shall be measured at generator voltage in combination with energy delivered to the City. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. Suitable metering equipment, satisfactory to the Secretary, for measuring the energy actually delivered to the Municipality shall be provided, as agreed to by the City and the Municipality, and suitable correction shall be made to cover transmission line and transformer losses to determine the amount of energy delivered to the Municipality at transmission voltage at Boulder Power Plant. The Secretary's determination of said amount shall be conclusive. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated the same provisions shall apply as nearly as may be.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the Municipality for electrical energy under this contract shall be in accordance with those specified in Exhibit 2.

BILLING AND PAYMENTS

13. (a) The Municipality shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. The energy bill for each month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14 hereof, and the sum of the amounts charged for firm energy during the preceding eleven months. The United States will submit bills to the Municipality by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

14. The minimum quantity of firm energy which the Municipality shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 1.8475 per centum of all firm energy as defined in Article 3 of Exhibit 2. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective. The original contract between the parties hereto shall terminate as of such effective date.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The Municipality, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the Municipality dependent for its usefulness on a continuation of this contract be purchased or acquired, and the Municipality be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the Municipality if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN
PAYMENT

18. If the Municipality shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the Municipality to terminate this contract and dispose of the energy herein allocated to the Municipality as he may see fit; provided, he shall first give opportunity to the City to con-

tract on terms and conditions to be prescribed by the Secretary, for such energy, and provided further, that such disposition shall be subject to the condition that the Municipality shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination. Nothing contained in this contract shall relieve the Municipality from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the Municipality to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the Municipality relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modification, extension or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to the Municipality.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the Municipality as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or other-

wise any sum or amount paid by the Municipality on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the Municipality shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the Municipality hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the Municipality, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

TRANSMISSION

27. The City shall continue to transmit over its main transmission line constructed for carrying Boulder Canyon energy all such energy allocated to, and used by, the City of Burbank, the City of Glendale, and the City of Pasadena, severally, in accordance with contracts between the City and each of said municipalities, made pursuant to Section 5 (d) of the Project Act, as said contracts now exist or as they may be hereafter modified or amended; and accordingly the delivery of energy provided for herein shall be made by the United States to the City for the Municipality.

NOTICES

28. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the Municipality shall be delivered, or mailed postage prepaid, to the City Manager of the City of Glendale, Glendale, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

29. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

30. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be

construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES,
Secretary of the Interior.

CITY OF GLENDALE,

[SEAL]

By (S) ARCHIE L. WALTERS,
Mayor.

Attest:

(S) G. E. CHAPMAN,
City Clerk of the City of Glendale.

Approved as to form:

(S) AUBREY N. IRWIN,
City Attorney.
5/27/1941

I hereby certify that adequate provision has been made to pay the estimated expense to be incurred under the foregoing contract.

CITY OF GLENDALE,
By (S) A. H. HOAK,
City Controller.

By (S) C. C. SHERROD,
Asst. Controller.

Appendix 909

**POWER CONTRACTS:
CITY OF LOS ANGELES, MAY 29, 1941**

(Exhibits 1 and 2 omitted)

Symbol Ir-1334

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND THE CITY OF LOS ANGELES,
AND ITS DEPARTMENT OF WATER AND POWER

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May, 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and THE CITY OF LOS ANGELES, a municipal corporation organized and existing under the laws of the State of California, and its DEPARTMENT OF WATER AND POWER (said Department acting herein in the name of the City, but as principal in its own behalf as well as in behalf of the City; the term "City" as used in this

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contract being deemed to be both The City of Los Angeles and its Department of Water and Power);

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract for Lease of Power Privilege", dated April 26, 1930, with severally, the City and Southern California Edison Company Ltd. (hereinafter referred to as "Edison Company") which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease"; and

3. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant", a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved the promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2"; and

6. Whereas the State of Nevada, the cities of Burbank, Glendale, and Pasadena (hereinafter referred to as "the Municipalities") and the City have made a joint request on the United States that the provisions of Article 9 (c) hereof be incorporated as a part of each of the contracts, under the Adjustment Act, for the sale of electrical energy by the United States to the State of Nevada, the Municipalities and the City, respectively;

7. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The City hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of the City under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the City as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the City agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2.

(b) In addition, if the United States makes available to the City the necessary falling water and machinery and equipment, the City will take and/or pay for the following minimum quantities of energy in addition to the quantities of energy specified in Article 14 (a) hereof:

(i) During the year of operation ending May 31, 1942, five hundred ninety-five million kilowatt-hours (595,000,000 kwh);

(ii) During each year of operation thereafter, until the year of operation ending May 31, 1945, seven hundred million kilowatt-hours (700,000,000 kwh);

Provided, That the City shall not be obligated to take such additional energy in any one month in an amount greater than one-twelfth of the amount of such additional energy which it is obligated to take and/or pay for during that year of operation. The rate to be paid for the use of falling water for the generation of all such additional energy shall be the rate for secondary energy in force at the time such energy is taken. The City shall be entitled, but not obligated, to take

energy at the rate for secondary energy in addition to the quantities above stated, if available to it under the provisions of Exhibit 2.

The obligation stated in this Article 9 (b) to take and/or pay for additional energy shall terminate on May 31, 1945.

(c) From the effective date of this contract and until Section G-3 has been placed in operation Section G-1 shall be used for the service of the City, the Municipalities, the United States, the State of Nevada and such resale consumers of energy allocated to but not taken by The Metropolitan Water District of Southern California as are now served by Section G-1.

After said Section G-3 has been placed in operation, said Section G-1 shall be used solely for the service of the City and the Municipalities and the United States, and said Section G-3 shall be used solely for the service of the City and the United States, except that the States of Nevada and Arizona shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 44,000 kilowatts, and such resale consumers shall be entitled to generation of electrical energy by means of said Section G-3 up to but not exceeding a combined demand of 6,000 kilowatts plus such portion of said 44,000 kilowatts as is not in use or required by the States; provided that such resale consumers shall not be entitled to take in excess of 70,000,000 kw-hrs. of electrical energy in any one year of operation.

The fact that energy generated by means of Section G-3 may in fact reach any of said Municipalities, shall not be deemed to be in violation of the foregoing provisions.

The foregoing provisions of this Article 9 (c) relate only to operating conditions, and are not to be construed as an agreement, contemplated by Article 18 of Exhibit 2, relating to or affecting in any way the apportionment of generating charges. Notwithstanding the operating conditions provided for in this Article 9 (c), generating charges for Sections G-1 and G-3 shall be considered as charges for a single section and shall be apportioned in accordance with the provisions of Article 18 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant

that the rights of the City, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact; the United States will deliver water in the quantity, in the manner, and at the times necessary for the generation of the energy to which the City is entitled under this contract, in accordance with the provisions of Article 20 of Exhibit 1 hereof, entitled "Integration of Operations." If Exhibit 1 should be terminated as to the City prior to the termination of this contract, the United States will itself generate and deliver energy, subject to (i) and (ii) above, in the manner required by this contract, in the quantity to which the City is entitled hereunder, and in accordance with the City's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the City reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with the City, at such times and in such manner, consistent with any program of integrated operations established under the provisions of Article 20 of Exhibit 1 hereof, as to cause the least inconvenience to the City, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the City, be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy under any program of integrated operations established under Article 20 of Exhibit 1 hereof, or, if Exhibit 1 be terminated as to the City, below the amount required at the time for the City's load requirements, will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof

shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents, and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy shall be measured at generator voltage. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover station losses, including (a) step-up transformer losses, (b) a proper proportion of energy used for operation of station auxiliaries, and (c) a proper proportion of energy used by the United States for the construction and operation and maintenance of Boulder Dam and appurtenant works, exclusive of Boulder City, as provided in Article 4 (a) of Exhibit 2. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said Exhibit should be terminated the same provisions shall apply as nearly as may be. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the City for electrical energy under this contract shall be in accordance with those specified in Exhibit 2, and in Article 9 (b) hereof. The right of the City to take energy at the rate for secondary energy shall not be impaired by reason of the fact that another allottee has not discharged its obligation to pay for energy at the firm rate.

BILLING AND PAYMENTS

13. (a) The City shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. When energy taken in any month is not in excess of one-twelfth ($\frac{1}{12}$) of the minimum annual obligation to take and/or pay for firm energy, the energy bill for such month shall be computed at the rate for firm energy in effect

when such energy was taken on the basis of the actual amount of energy used during such month. All energy used during any month in excess of one-twelfth ($\frac{1}{12}$) of such minimum annual obligation for firm energy shall be paid for at the rate for secondary energy in effect when such energy was taken; provided, however, that the secondary rate shall not apply to any energy taken during any month unless and until an amount of energy equivalent to one-twelfth ($\frac{1}{12}$) of such minimum annual obligation for firm energy has been taken for all months, beginning with the month of June immediately preceding; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14 hereof, and the sum of the amounts charged for firm energy during the preceding eleven months, but in no event shall the sum of the amounts charged for energy for any year of operation exceed the product of the minimum quantity of firm energy which the City is obligated to take and/or pay for in such year of operation and the firm energy rate; plus the product of the quantity of energy taken by the City or which the City is obligated to take and/or pay for in such year of operation (whichever is the greater) in excess of its firm energy obligation and the secondary energy rate. In computing the energy bill for each month; a credit will be allowed for generating charges for energy generated by the City (as Operating Agent) for the United States out of the energy reserved for it, exclusive of the energy classed as station losses as provided in Article 4 (a) of Exhibit 2, and energy charges at the firm energy rate for one-half of such energy furnished to the United States. The United States will submit bills to the City by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said Section, adjustments shall be made, from time to time, with each

allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

14. (a) The minimum quantity of firm energy which the City shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 36.9439 per centum of all firm energy as defined in Article 3 of Exhibit 2; except as reduced by one-half of the amount of firm energy furnished to the United States out of energy reserved to it as provided in Article 4 (a) of Exhibit 2 and by 55% of the amounts of firm energy contracted for or taken (whichever is the greater) by others as provided in Article 4 (b) of Exhibit 2. In addition to its minimum annual obligation for firm energy, the City shall also take and/or pay for at secondary energy rates in each year of operation for the period ending May 31, 1945, not less than the quantities of energy specified in Article 9 (b) hereof. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof; provided, however, that if the City has used during such year of operation less water than that available to it under any program of integration of operations agreed upon, decided on or determined under Article 20 of Exhibit 1, such nonuse of available water shall be considered as an offset insofar as possible against any reduction in the minimum annual payment due to interruptions or curtailment of delivery of water. If it becomes necessary to determine the number of kilowatt-hours of energy involved by reason of such nonuse of available water, such kilowatt-hours shall be computed on the basis of water being converted into electrical energy at the average over-all efficiency attained by the entire Boulder Power Plant during such year of operation.

(b) *Absorption period:* In order to afford a reasonable time for the City to absorb the energy contracted for, in determining the minimum annual payments for energy charges for firm energy for the two years of operation ending May 31, 1942, and May 31, 1943, the number of kilowatt-hours of firm energy which the City is obligated to take and/or pay for in each of said years of operation shall be reduced to the following amounts:

Year of operation ending May 31, 1942, 1,552,659,393 kw-hrs.

Year of operation ending May 31, 1943, 1,566,491,016 kw-hrs.

Provided, That said amounts shall be reduced by one-half of the amount of firm energy furnished to the United States out of energy reserved to it as provided in Article 4 (a) of Exhibit 2 and by 53.5% and 54.25%, respectively, of the amounts of firm energy contracted

for or taken (whichever is the greater) by others in each of said years of operation as provided in Article 4 (b) of Exhibit 2; provided, further, that the minimum annual payment for each of said years of operation shall be adjusted because of interruptions or curtailment of the delivery of water as provided in Article 14 (a) hereof. If the quantity of energy taken in either of said years of operation is in excess of the above-stated amounts, as so reduced, for such year of operation, such excess shall be paid for at the rate for secondary energy.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective.

The contract between the United States and Los Angeles Gas and Electric Corporation, dated November 12, 1931, and assigned by said corporation to the City, shall terminate as of such effective date: Provided, however, that neither such termination nor anything contained in this contract shall terminate, modify, or otherwise affect the relative rights and obligations of the Nevada-California Electric Corporation and the City, as they existed on May 19, 1941, with regard to generation of energy and generating charges in connection with Sections G-5, T-5, and C. F. The total generating charges, under the Adjustment Act, in connection with said sections shall be apportioned between said corporation and the City in accordance with the determination of said relative rights. Pending said determination said corporation and the City shall each pay half of such generating charges, as computed under the Adjustment Act and Exhibit 2, but such payments shall be without prejudice to the rights and obligations of either in said determination.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void, and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The City, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the City dependent for its usefulness on a continuation of this contract be purchased or acquired, and the City be compensated for damages to its property, used and useful in

the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the City if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

18. If the City shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the City to terminate this contract and dispose of the energy herein allocated to the City as he may see fit; provided, that such disposition shall be subject to the condition that the City shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination. Nothing contained in this contract shall relieve the City from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the City to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the City relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation, and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences

for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modification, extension, or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees, shall not be denied to the City.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the City as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings; provided that in any such arbitration or court proceedings neither the reasonableness nor propriety of a program of integration of operations agreed upon, decided on, or determined pursuant to Article 20 of Exhibit 1, nor such limitations as may be imposed by any such program upon the taking of energy by the City under this contract shall be questioned. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the City on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the City shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other or subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the City hereunder, shall be made without the written approval of the Secretary; and any successor or assigns of the rights of the City, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

TRANSMISSION

27. The City shall continue to transmit over its main transmission line constructed for carrying Boulder Canyon energy all such energy allocated to, and used by, the City of Burbank, the City of Glendale, and the City of Pasadena, severally, in accordance with contracts between the City and each of said municipalities, made pursuant to Section 5 (d) of the Project Act, as said contracts now exist or as they may be hereafter modified or amended.

NOTICES

28. (a) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the City shall be delivered, or mailed postage prepaid, to the Chief Electrical Engineer and General Manager of the Bureau of Power and Light, Department of Water and Power, Los Angeles, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

29. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

30. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES, *Secretary of the Interior.*

THE CITY OF LOS ANGELES, Acting by and
through its Board of Water and Power
Commissioners.

By (S) JAMES B. AGNEW, *President.*

Attest:

(S) JOSEPH L. WILLIAMS,
Secretary.

DEPARTMENT OF WATER AND POWER OF THE
CITY OF LOS ANGELES, by the Board of
Water and Power Commissioners.

By (S) JAMES B. AGNEW, *President.*

Attest:

(S) JOSEPH L. WILLIAMS,
Secretary.

Approved as to form and legality this 25th day of May 1941:

RAY L. CHESEBRO,
City Attorney.

By (S) S. B. ROBINSON,
Chief Assistant City Attorney for Water and Power.

Appendix 910

POWER CONTRACTS:

**SOUTHERN CALIFORNIA EDISON CO., LTD.,
MAY 29, 1941**

(Exhibits 1 and 2 omitted)

Symbol Ilr-1335

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND SOUTHERN CALIFORNIA
EDISON COMPANY LTD.

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and SOUTHERN CALIFORNIA EDISON COMPANY LTD., a corporation organized and existing under the laws of the State of California (hereinafter referred to as "Edison Company");

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract

A431

for Lease of Power Privilege," dated April 26, 1930, with severally, Edison Company and The City of Los Angeles and its Department of Water and Power (hereinafter collectively referred to as "the City"), which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease"; and

3. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

4. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

5. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2";

6. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

7. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) Edison Company hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the rights and obligations of Edison Company under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to Edison Company as an allottee or contractor for electrical energy; provided, however, that in the event

that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

8. (a) The United States agrees to deliver at transmission voltage at Boulder Power Plant, and Edison Company agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 7 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2.

(b) Sections G-4 and G-6 and T-4 and T-6, described in Exhibit 2, shall be used solely for the service of Edison Company and the United States, subject to Article 15 of Exhibit 1 and Article 20 of Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

9. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of Edison Company, as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver water in the quantity, in the manner, and at the times necessary for the generation of the energy to which Edison Company is entitled under this contract, in accordance with the provisions of Article 20 of Exhibit 1 hereof, entitled "Integration of Operations." If Exhibit 1 should be terminated as to Edison Company prior to the termination of this contract, the United States will itself generate and deliver energy, subject to (i) and (ii) above, in the manner required by this contract, in the quantity to which Edison Company is entitled hereunder, and in accordance with Edison Company's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy

at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to Edison Company reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with Edison Company, at such times and in such manner, consistent with any program of integrated operations established under the provisions of Article 20 of Exhibit 1 hereof, as to cause the least inconvenience to Edison Company, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of Edison Company, be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy under any program of integrated operations established under Article 20 of Exhibit 1 hereof, or, if Exhibit 1 be terminated as to Edison Company, below the amount required at the time for Edison Company's load requirements, will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 13 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 9. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

10. All electrical energy shall be measured at generator voltage. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover station losses, including (a) step-up transformer losses, (b) a proper proportion of energy used for operation of station auxiliaries and (c) a proper proportion of energy used by the United States for the construction and operation and maintenance of Boulder Dam and appurtenant works, exclusive of Boulder City, as provided in Article 4 (a) of Exhibit 2. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said exhibit should be terminated the same provisions shall apply as nearly as may be. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available.

ENERGY RATES AND GENERATING CHARGES

11. The rates and charges to be paid by Edison Company for electrical energy under this contract shall be in accordance with those specified in Exhibit 2. The right of Edison Company to take energy at the rate for secondary energy shall not be impaired by reason of the fact that another allottee has not discharged its obligation to pay for energy at the firm rate.

BILLING AND PAYMENTS

12. (a) Edison Company shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. When energy taken in any month is not in excess of one-twelfth ($\frac{1}{12}$) of the minimum annual obligation to take and/or pay for firm energy, the energy bill for such month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month. All energy used during any month in excess of one-twelfth ($\frac{1}{12}$) of such minimum annual obligation for firm energy shall be paid for at the rate for secondary energy in effect when such energy was taken; provided, however, that the secondary rate shall not apply to any energy taken during any month unless and until an amount of energy equivalent to one-twelfth ($\frac{1}{12}$) of such minimum annual obligation for firm energy has been taken for all months, beginning with the month of June immediately preceding; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 13, hereof, and the sum

of the amounts charged for firm energy during the preceding eleven months, but in no event shall the sum of the amounts charged for energy for any year of operation exceed the product of the minimum quantity of firm energy which Edison Company is obligated to take and/or pay for in such year of operation and the firm energy rate; plus the product of the quantity of energy taken by Edison Company in such year of operation in excess of its firm energy obligation and the secondary energy rate. In computing the energy bill for each month, a credit will be allowed for generating charges for energy generated by Edison Company (as Operating Agent) for the United States out of the energy reserved for it, exclusive of the energy classed as station losses as provided in Article 4 (a) of Exhibit 2, and energy charges at the firm energy rate for one-half of such energy furnished to the United States. The United States will submit bills to Edison Company by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

13. (a) The minimum quantity of firm energy which Edison Company shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 21.1510 per centum of all firm energy as defined in Article 3 of Exhibit 2; except as reduced by one-half of the amount of firm energy furnished to the United States out of energy reserved to it as provided in Article 4 (a) of Exhibit 2 and by 40% of the amounts of firm energy contracted

for or taken (whichever is the greater) by others as provided in Article 4 (b) of Exhibit 2. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 9 hereof; provided, however, that if Edison Company has used during such year of operation less water than that available to it under any program of integration of operations agreed upon, decided on or determined under Article 20 of Exhibit 1, such nonuse of available water shall be considered as an offset insofar as possible against any reduction in the minimum annual payment due to interruptions or curtailment of delivery of water. If it becomes necessary to determine the number of kilowatt-hours of energy involved by reason of such nonuse of available water, such kilowatt-hours shall be computed on the basis of water being converted into electrical energy at the average over-all efficiency attained by the entire Boulder Power Plant during such year of operation.

(b) *Absorption period:* In order to afford a reasonable time for Edison Company to absorb the energy contracted for, in determining the minimum annual payments for energy charges for firm energy for the two years of operation ending May 31, 1942, and May 31, 1943, the number of kilowatt-hours of firm energy which Edison Company is obligated to take and/or pay for in each of said years of operation shall be reduced to the following amounts:

Year of operation ending May 31, 1942, 635,898,893 kw-hrs.

Year of operation ending May 31, 1943, 770,588,038 kw-hrs.

Provided, That said amounts shall be reduced by one-half of the amount of firm energy furnished to the United States out of energy reserved to it as provided in Article 4 (a) of Exhibit 2 and by 28% and 34%, respectively, of the amounts of firm energy contracted for or taken (whichever is the greater) by others in each of said years of operation as provided in Article 4 (b) of Exhibit 2; provided, further, that the minimum annual payment for each of said years of operation shall be adjusted because of interruptions or curtailment of the delivery of water as provided in Article 13 (a) hereof. If the quantity of energy taken in either of said years of operation is in excess of the above-stated amounts, as so reduced, for such year of operation, such excess shall be paid for at the rate for secondary energy.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT

14. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void and of no force or effect.

DURATION OF CONTRACT

15. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. Edison Company, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of Edison Company dependent for its usefulness on a continuation of this contract be purchased or acquired, and Edison Company be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

16. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, Edison Company if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

17. If Edison Company shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to Edison Company to terminate this contract and dispose of the energy herein allocated to Edison Company as he may see fit; provided, that such disposition shall be subject to the condition that Edison Company shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination. Nothing contained in this contract shall relieve Edison Company from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of Edison Company to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

18. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of Edison Company relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

19. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

20. Any modification, extension or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to Edison Company.

DISPUTES AND DISAGREEMENTS

21. Disputes or disagreements between the United States and Edison Company as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings; provided that in any such arbitration or court proceedings neither the reasonableness nor propriety of a program of integration of operations agreed upon, decided on or determined pursuant to Article 20 of Exhibit 1 nor such limitations as may be imposed by any such program upon the taking of energy by Edison Company under this contract shall be questioned. If in any such arbitration or court proceedings or otherwise any sum or amount paid by Edison Company on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and Edison Company shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbi-

trator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

22. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

23. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

24. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other or subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

25. No voluntary transfer of this contract, or of the rights of Edison Company hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of Edison Company, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

NOTICES

26. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon Edison Company shall be delivered, or mailed postage prepaid, to the Chief Engineer, Southern California Edison Company Ltd., Los Angeles, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

27. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient moneys available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient moneys not being so appropriated, or on account of there not being sufficient moneys in the Colorado River dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

28. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES,
Secretary of the Interior.

SOUTHERN CALIFORNIA EDISON
COMPANY LTD.,

By (S) HARRY J. BAUER, *President.*

[SEAL]

Attest:

(S) CLIFTON PETERS,
Secretary.

Approved as to Form May 26, 1941:

(S) E. C. LARKIN,
Asst. General Counsel.

Appendix 911

**POWER CONTRACTS:
CALIFORNIA ELECTRIC POWER CO.
(Formerly the Nevada-California Electric Corporation),
May 29, 1941**

(Exhibits 1 and 2 omitted)

Symbol Ilr-1341

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

THE UNITED STATES OF AMERICA AND THE NEVADA-CALIFORNIA
ELECTRIC CORPORATION ¹

CONTRACT FOR THE SALE OF ELECTRICAL ENERGY

1. THIS CONTRACT, made this 29th day of May, 1941, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act (hereinafter referred to as the "Project Act"), and to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the Boulder Canyon Project Adjustment Act (hereinafter referred to as the "Adjustment Act"), between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"), and THE NEVADA-CALIFORNIA ELECTRIC CORPORATION, a corporation organized and existing under the laws of the State of Delaware (hereinafter referred to as the "Corporation");

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Project Act, the United States entered into a certain contract designated as "Contract

¹ Now California Electric Power Company.

for Lease of Power Privilege," dated April 26, 1930, with severally, The City of Los Angeles and its Department of Water and Power (hereinafter collectively referred to as the "City") and Southern California Edison Company Ltd. (hereinafter referred to as "Edison Company") which contract was thereafter amended by two certain contracts between the same parties, dated May 28, 1930, and September 23, 1931, and was also modified by a certain contract between the United States and the City, dated July 6, 1938, and consented to by Edison Company, which Contract for Lease of Power Privilege, dated April 26, 1930, together with said amendatory and modifying contracts, are hereinafter collectively referred to as the "Lease"; and

3. Whereas, under date of November 5th, 1931, the United States and The Southern Sierras Power Company entered into a certain contract for electrical energy, which said contract has been assigned to the Corporation; and is hereinafter referred to as the "Original Contract"; and

4. Whereas by the terms of the Adjustment Act it is provided, among other things, that the Secretary is authorized to negotiate for and enter into a contract for the termination of the existing Lease of the Boulder Power Plant, and that the Secretary, in consideration of such termination of the Lease, is authorized to designate the City and Edison Company as the agents of the United States for the operation of the Boulder Power Plant; and

5. Whereas, under date of May 29, 1941, the United States and the City and Edison Company (hereinafter collectively referred to as "Operating Agents") have executed a contract designated "Contract for the Operation of Boulder Power Plant," a copy of which said contract is attached hereto, marked "Exhibit 1"; and

6. Whereas, under date of May 20, 1941, the Secretary approved and promulgated "General Regulations for Generation and Sale of Power in Accordance with the Boulder Canyon Project Adjustment Act," a copy of which is attached hereto, marked "Exhibit 2";

7. Now, therefore, in consideration of the provisions, covenants, and conditions herein contained, the parties hereto agree as follows, to wit:

REGULATIONS AND AGENCY CONTRACT

8. (a) This contract is subject to all the terms and provisions of Exhibit 2 hereof which is hereby made a part hereof as fully and completely as though set out herein at length, and this contract is subject to such other rules and regulations as hereafter may be promulgated by the Secretary pursuant to law and to Article 27 of Exhibit 2 hereof.

(b) The Corporation hereby consents that the United States shall, and the United States agrees that it shall, cause the energy agreed to be delivered hereunder to be generated and delivered in accordance with the provisions of Exhibit 1; and the parties hereto agree that the

rights and obligations of the Corporation under this contract shall be controlled by the provisions of Exhibit 1 to the extent that such provisions are applicable to the Corporation as an allottee or contractor for electrical energy; provided, however, that in the event that such Exhibit 1 shall be terminated as to either or both of the Operating Agents therein named, the United States thereafter shall itself generate and deliver the energy agreed by the United States to be generated and delivered through the agent or agents as to which said Exhibit 1 shall have been terminated.

DELIVERY OF ENERGY

9. The United States agrees to deliver at transmission voltage at Boulder Power Plant, and the Corporation agrees to take and/or pay for, electrical energy in accordance with the provisions of Article 8 hereof, for the period from the effective date of this contract to May 31, 1987, inclusive, in accordance with the allocation of energy contained in Exhibit 2.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

10. (a) Subject to—

(i) the statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) the further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of the Corporation as a contractor for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver to the Corporation energy in the manner required by this contract, in the quantity to which to [sic] the Corporation is entitled hereunder, and in accordance with the Corporation's load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to the Corporation reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after

consultation with the Corporation, at such times and in such manner as to cause the least inconvenience to the Corporation and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of the Corporation be discontinued or reduced below the amount required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy, or below the amount required at the time for the Corporation's load requirements, will not be considered in determining the total hours of discontinuance in any year. The minimum annual payment specified in Article 14 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officer, agents, and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God, or the public enemy, or other similar cause; nevertheless interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 10. In the event of shortage of electrical energy at Boulder Power Plant due to shortage of water, the available electrical energy shall be prorated among all allottees concerned, on the basis of their respective obligations to take and/or pay for firm energy in the year of operation in which the shortage occurs.

MEASUREMENT OF ENERGY

11. All electrical energy shall be measured at generator voltage. Suitable correction shall be made in the amounts of energy as measured at generator voltage to cover step-up transformer losses. The testing of meters and calibration of testing equipment shall be in accordance with Article 19 of Exhibit 1. If said Exhibit should be terminated the same provisions shall apply as nearly as may be. The electrical energy delivered hereunder during any period in which the meters furnished to measure such electrical energy fail to register shall, for billing purposes, be estimated from the best information available.

ENERGY RATES AND GENERATING CHARGES

12. The rates and charges to be paid by the Corporation for electrical energy under this contract shall be in accordance with those specified in Exhibit 2. The right of the Corporation to take energy at the rate for secondary energy shall not be impaired by reason of the fact that another allottee has not discharged its obligation to pay for energy at the firm rate.

BILLING AND PAYMENTS

13. (a) The Corporation shall pay monthly for electrical energy and for the generation thereof in accordance with the energy rates and generating charges specified in Exhibit 2. When energy taken in any month is not in excess of one-twelfth ($\frac{1}{12}$) of the minimum annual obligation to take and/or pay for firm energy, the energy bill for such month shall be computed at the rate for firm energy in effect when such energy was taken on the basis of the actual amount of energy used during such month. All energy used during any month in excess of one-twelfth ($\frac{1}{12}$) of such minimum annual obligation for firm energy shall be paid for at the rate for secondary energy in effect when such energy was taken; provided, however, that the secondary rate shall not apply to any energy taken during any month unless and until an amount of energy equivalent to one-twelfth ($\frac{1}{12}$) of such minimum annual obligation for firm energy has been taken for all months, beginning with the month of June immediately preceding; provided, however, that the bill for energy for the month of May of each year shall not be less than the difference between the minimum annual energy payment, as provided in Article 14 hereof, and the sum of the amounts charged for firm energy during the preceding eleven months, but in no event shall the sum of the amounts charged for energy for any year of operation exceed the product of the minimum quantity of firm energy which the Corporation is obligated to take and/or pay for in such year of operation and the firm energy rate; plus the product of the quantity of energy taken by the Corporation in such year of operation in excess of its firm energy obligation and the secondary energy rate. The United States will submit bills to the Corporation by the tenth of each month immediately following the month during which the energy was generated, and payments shall be due on the first day of the month immediately succeeding. If such charges (less proper and applicable credits) are not paid when due an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full, but

nothing contained in this article shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

(b) In accordance with the provisions of Section 4 (b) of the Adjustment Act, in the event payments to the States of Arizona and Nevada, or either of them, under Section 2 (c) of the Adjustment Act, shall be reduced by reason of the collection of taxes mentioned in said Section, adjustments shall be made, from time to time, with each allottee which shall have paid any such taxes, by credits or otherwise, for that proportion of the amount of such reductions which the amount of the payments of such taxes by such allottee bears to the total amount of such taxes collected.

MINIMUM ANNUAL PAYMENTS

14. The minimum quantity of firm energy which the Corporation shall take and/or pay for at firm energy rates in each year of operation under the terms of this contract shall be 2.6439 per centum of all firm energy as defined in Article 3 of Exhibit 2; except as reduced by 5% of the amounts of firm energy contracted for or taken (whichever is the greater) by others as provided in Article 4 (b) of Exhibit 2. The minimum annual energy payment shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 10 hereof.

CONTINGENT ON FINAL EFFECTIVENESS OF ADJUSTMENT ACT; AND NONWAIVER OF CLAIMS

15. This contract shall not become effective unless and until the Adjustment Act shall have taken effect for all purposes pursuant to the provisions of Section 10 thereof, but thereupon this contract shall be fully effective and binding upon the parties hereto as of midnight, Pacific Standard Time, on the last day of the calendar month in which the Adjustment Act shall have become fully effective. The original contract between the parties hereto shall terminate as of such effective date.

It is understood by both parties hereto (1) that the Corporation claims that it was and is entitled to an absorption period for the three years of operation commencing June 1, 1940, and that the United States has denied to the Corporation such an absorption period; and (2) that the Corporation claims that for all energy taken by it under the Supplemental Contract for Lease of Power Privileges between the parties hereto dated July 22, 1937, it was and is obligated to pay only at the rate for secondary energy, which claim is pending in the Department of the Interior for decision. It is understood and agreed by the parties hereto that neither the termination of the original

contract between the parties hereto, nor the termination of the contract dated November 12, 1931, between the United States and Los Angeles Gas and Electric Corporation and assigned to the City, nor the termination of the Lease, nor anything contained in this contract or in the "Contract for the Operation of Boulder Power Plant," referred to in Article 5 hereof, or in the General Regulations referred to in Article 6 hereof, shall terminate, modify, or otherwise affect the relative rights and obligations of the parties hereto, with regard to the claims referred to in "(1)" and "(2)" of this paragraph, as they existed on May 19, 1941; and it is further agreed that the rights and obligations of the parties hereto under this contract shall be conformed to said relative rights and obligations as finally determined; provided, that pending determination of each of said claims referred to in "(1)" and "(2)" above, payments by the Corporation to the United States shall be in accordance with the departmental decision on each of said claims, and in accordance with the provisions of this contract, but without prejudice to the rights of the Corporation in said determinations; and provided further, that the Corporation shall be estopped from asserting the claim referred to in "(1)" above, and the denial thereof by the United States shall be final, conclusive, and binding on the Corporation, if court proceedings with respect to it are not commenced on or before May 31, 1942; and provided further, that the Corporation shall be estopped from asserting the claim referred to in "(2)" above, and the departmental decision thereon shall be final, conclusive, and binding on the Corporation, if (in the event said departmental decision be adverse to the Corporation) arbitration or court proceedings with respect to it are not commenced within one year from the date of said departmental decision.

The contract between the United States and Los Angeles Gas and Electric Corporation, dated November 12, 1931, and assigned by said Corporation to the City, shall terminate as of such effective date: *Provided, however,* That neither such termination, nor termination of the original contract between the parties hereto, nor anything contained in this contract shall terminate, modify or otherwise affect the relative rights and obligations of the Corporation and the City, as they existed on May 19, 1941, with regard to generation of energy and generating charges in connection with Sections G-5, T-5 and C. F. The total generating charges, under the Adjustment Act, in connection with said sections shall be apportioned between the Corporation and the City in accordance with the determination of said relative rights. Pending such determination the Corporation and the City shall each pay half of such generating charges, as computed under the Adjustment Act and Exhibit 2, but such payments shall be without prejudice to the rights and obligations of either in said determination.

If the Adjustment Act shall not have taken effect for all purposes prior to June 1, 1941, this contract shall be null, void and of no force or effect.

DURATION OF CONTRACT

16. This contract shall remain in effect to and including May 31, 1987, unless sooner terminated as elsewhere herein provided. The Corporation, if this contract has not been terminated prior to said date, shall be entitled to a renewal hereof upon such terms and conditions as may be authorized or required under the then existing laws and regulations, unless the property of the Corporation dependent for its usefulness on a continuation of this contract be purchased or acquired, and the Corporation be compensated for damages to its property, used and useful in the transmission and distribution of such electrical energy and not taken, resulting from the termination of the supply.

NO ENERGY TO BE DELIVERED WITHOUT PAYMENT

17. Unless an extension of time for payment has been first obtained from the Secretary, in writing, no energy shall be generated for, or delivered to, the Corporation if it shall be in arrears for more than twelve (12) months in the payment of any charge due to the United States hereunder.

CONTRACT MAY BE TERMINATED IN CASE OF DEFAULT IN PAYMENT

18. If the Corporation shall be in arrears for more than twelve (12) months in the payment of any charge, including interest, due to the United States hereunder, and shall not have obtained an extension of time from the Secretary for the payment thereof, or, if such extension be obtained, has not made such payment within the time as extended, then the Secretary shall have the right forthwith upon written notice to the Corporation to terminate this contract and dispose of the energy herein allocated to the Corporation as he may see fit; provided, that such disposition shall be subject to the condition that the Corporation shall have the right at any time within four (4) years from date of the first of the defaults for which the contract is terminated, to become reinstated hereunder by payment to the United States of all arrearages including interest, if any, together with any and all loss incurred by the United States by reason of such termination. Nothing contained in this contract shall relieve the Corporation from the obligation to make the United States whole, for the period of this contract, for all loss and/or damage occasioned by the failure of the Corporation to take and/or pay for energy as provided in this contract.

ACCESS TO BOOKS AND RECORDS

19. The Secretary or his duly authorized representatives shall have free access at all reasonable times to the books and records of the Corporation relating to the transmission and disposal of electrical energy hereunder, with the right at any time during office hours to make copies of or from the same.

USE OF PUBLIC AND RESERVED LANDS OF THE UNITED STATES

20. The use is authorized of such public and reserved lands of the United States as may be necessary or convenient for the construction, operation and maintenance of main transmission lines, to transmit electrical energy generated at Boulder Dam, together with the use of such public and reserved lands of the United States as may be designated by the Secretary, from time to time, for camp sites, residences for employees, warehouses and other uses incident to the operation and maintenance of such main transmission lines.

MODIFICATIONS

21. Any modification, extension or waiver by the Secretary, subsequent to May 31, 1941, of any of the terms, provisions or requirements of any regulation or contract, promulgated or executed subsequent to May 19, 1941, for the benefit of any one or more of the allottees shall not be denied to the Corporation.

DISPUTES AND DISAGREEMENTS

22. Disputes or disagreements between the United States and the Corporation as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings. If in any such arbitration or court proceedings or otherwise any sum or amount paid by the Corporation on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy arises out of this contract, and the disputants agree to submit the matter to arbitration the Secretary shall name one arbitrator and the Corporation shall name one arbitrator, and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the parties hereto.

PRIORITY OF CLAIMS OF THE UNITED STATES

23. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN UNITED STATES

24. The title to Boulder Dam and reservoir, Boulder Power Plant, and incidental works, including generating machinery and equipment, shall forever remain in the United States.

EFFECT OF WAIVER OF BREACH OF CONTRACT

25. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other or subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

26. No voluntary transfer of this contract, or of the rights of the Corporation hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the Corporation, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

NOTICES

27. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the Corporation shall be delivered, or mailed postage prepaid, to the General Manager of The Nevada-California Electric Corporation, Riverside, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

CONTRACT CONTINGENT UPON APPROPRIATIONS

28. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

OFFICIALS NOT TO BENEFIT

29. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (S) HAROLD L. ICKES, *Secretary of the Interior.*

THE NEVADA-CALIFORNIA ELECTRIC CORPORATION,
By (S) LAURENCE C. PHIPPS, JR., *Vice President.*

[SEAL]

Attest:

(S) D. L. KING, *Asst. Secretary.*

Appendix 912

POWER CONTRACTS:

**1945 RESALE CONTRACT (METROPOLITAN WATER
DISTRICT UNUSED ENERGY), MAY 31, 1945**

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

CONTRACT FOR RESALE OF ELECTRIC ENERGY AT BOULDER DAM
POWER PLANT

1. THIS CONTRACT, made this 31st day of May 1945, between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter referred to as the "Secretary"); and, severally RECONSTRUCTION FINANCE CORPORATION (hereinafter referred to as "RFC"), a corporation created by the Reconstruction Finance Corporation Act, as amended; THE CITY OF LOS ANGELES, a municipal corporation of the State of California, and its DEPARTMENT OF WATER AND POWER (said Department acting herein in the name of the City, but as principal in its own behalf, as well as in behalf of the City, the term "City" as herein used being deemed to include both The City of Los Angeles and its Department of Water and Power); SOUTHERN CALIFORNIA EDISON COMPANY LTD., a private corporation organized and existing under the laws of the State of California (hereinafter referred to as "Edison Company"); CALIFORNIA ELECTRIC POWER COMPANY (formerly The Nevada-California Electric Corporation, and successor to The Southern Sierras Power Company), a private corporation organized and existing under the laws of the State of Delaware (hereinafter referred to as "California Electric"); and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation organized and existing under the laws of the State of California (hereinafter referred to as the "District");

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas, pursuant to the provisions of the Act of Congress, approved December 21, 1928 (45 Stat. 1057), designated the "Boulder

Canyon Project Act" (hereinafter referred to as the "Project Act"), the United States heretofore entered into a contract with the District, dated April 26, 1930 (Symbol and No. Ilr-647), for the purchase by, and delivery to, the District, under the terms and conditions therein stated, of certain electrical energy to be delivered at Boulder Power Plant, which said contract was amended by supplemental contracts, dated May 31, 1930, and July 13, 1938; and

3. Whereas, pursuant to the Act of Congress approved July 19, 1940 (54 Stat. 774), designated the "Boulder Canyon Project Adjustment Act" (hereinafter referred to as the "Adjustment Act"), the United States entered into a contract with the District, dated May 29, 1941 (Symbol and No. Ilr-1336) (which contract superseded the contracts referred to in Article 2 above, and is herein referred to as "District's Energy Contract"), providing for the delivery of certain electrical energy to the District, and the United States also entered into contracts, severally, with City, Edison Company, and California Electric, dated May 29, 1941 (Symbols and Nos. Ilr-1334, Ilr-1335, and Ilr-1341), providing for delivery to them, respectively, of electrical energy at Boulder Power Plant; all of said contracts being under the terms and provisions of the Project Act and Adjustment Act; and

4. Whereas, pursuant to said Adjustment Act, the Secretary promulgated General Regulations (hereinafter referred to as the "Regulations") for the generation and sale of power at the Boulder Power Plant; and

5. Whereas, under date of November 21, 1941, the United States entered into a contract with California-Pacific Utilities Company for the resale of Boulder firm energy contracted for by the District, but unused by it (Symbol and No. Ilr-1366), not exceeding 20,000,000 kwh. annually, and under date of December 2, 1941, the United States entered into a contract with Citizens Utilities Company for the resale of Boulder firm energy contracted for by District, but unused by it (Symbol and No. Ilr-1368), not exceeding 50,000,000 kwh. annually; said energy under both of said contracts to be generated on Section G-3 (Units A-1 and A-2), provided the Secretary may transfer said generation to Section G-2 (Units N-5 and N-6); said energy to be delivered at points near Boulder Dam; and

6. Whereas City, Edison Company, and California Electric desire to purchase all Boulder firm energy contracted for by District but unused by it, for pumping Colorado River water into and in its aqueduct and unused by the resale consumers under contracts referred to in Article 5 hereof; and

7. Whereas in order that said unused District firm energy may be available at times and in amounts required for the effective utilization thereof, City and Edison Company will, for periods of time during

which this contract is in effect, require for the generation thereof the use of generating capacity in Sections G-2 (Units N-5 and N-6) and G-7 (Unit N-7), and Transformer Sections T-2 and T-7; and

8. Whereas, that certain contract (hereinafter referred to as "Defense Plant Contract"); dated the 9th day of May 1942 (Symbol and No. Ilr-1387), was entered into between Defense Plant Corporation, a corporation created by RFC pursuant to Section 5 (d) of the Reconstruction Finance Corporation Act, as amended (which said corporation, pursuant to Public Law No. 109 approved on June 30, 1945, was dissolved effective July 1, 1945, and all of its functions, powers, duties, and authority, together with its documents, books of account, records, assets, and liabilities of any kind and nature, were transferred to RFC to be performed, exercised, and administered by RFC in the same manner and to the same extent and effect as if originally vested in RFC) and, severally, the United States, City, Edison Company, California Electric, District, and Nevada, wherein a power supply, consisting chiefly of District unused energy, was made available for Defense Plant Corporation, for use at its Magnesium Plant (hereinafter referred to as "Basic Magnesium Project") near Las Vegas, Nevada, and such contract terminates as to such power supply as of midnight, May 31, 1945; and

9. Whereas RFC desires to make arrangements herein for a power supply for Basic Magnesium Project, for the year commencing at midnight, May 31, 1945, and for the pumping of water from Lake Mead incidental thereto; and

10. Whereas, pursuant to said Defense Plant Contract, generator Unit N-7 (hereinafter referred to as "Section G-7") and transformer Unit T-7 (hereinafter referred to as "Section T-7") were installed at Boulder Power Plant and segregated for the sole use of Defense Plant Corporation until such time as the generating costs of said sections are, pursuant to said contract, assumed by District; and

11. Whereas Defense Plant Contract provides that, during the period that said Sections G-7 and T-7 are segregated for the use of Defense Plant Corporation, the Secretary may arrange for the use of the same for other parties;

12. Now, therefore, in consideration of the covenants herein contained, the parties hereto agree as follows, to wit:

DEFINITIONS

13. All words used herein shall have the meanings ascribed to them in the Boulder Canyon Project Adjustment Act, the Regulations, and in the several contracts of May 29, 1941, herein referred to.

RELEASE BY DISTRICT

14. (a) During the term of this contract, District hereby releases and hereby agrees to the disposal, as herein provided, of all firm energy allotted to it, under the Regulations and contracted for by District under District's Energy Contract, which shall be unused by District for pumping Colorado River water into and in its aqueduct, and unused by resale consumers under contracts referred to in Article 5 hereof. During the term of this contract, District will not exercise its right to take or use any secondary energy or any energy allotted to but unused by the States of Arizona and Nevada.

(b) During the term of this contract District will so operate its aqueduct, pumping and water supply system that maximum practicable amounts of generating capacity in the Boulder Power Plant and energy from Boulder Power Plant will be available to City, Edison Company, and California Electric, consistent with the proper operation of said pumping and water supply system as determined by District.

SALE OF ENERGY

15. (a) Subject to the terms and conditions of District's Energy Contract, the United States will cause the firm energy released by District under Article 14 hereof to be delivered annually during the period of this contract, to the parties hereto as follows: (1) to City 55 per centum thereof; (2) to Edison Company 40 per centum thereof; (3) to California Electric 5 per centum thereof; provided that during the year of operation ending May 31, 1946, the United States will cause to be delivered to RFC at the points where its 230,000-volt transmission lines connect with the 230,000-volt switchyard of District at Boulder Power Plant, at approximately 220,000 volts in the form of three (3) phase alternating current at a frequency of approximately 60 cycles per second, for use exclusively in the operation of Basic Magnesium Project, and for the pumping of water from Lake Mead incidental thereto, not to exceed 500,000,000 kilowatt-hours of said released firm energy at a maximum demand of 65,000 kilowatts. In the event supplies of electric energy are required at Basic Magnesium Project, and for the pumping of water from Lake Mead incidental thereto, subsequent to May 31, 1946, provided necessary agreements shall have been made by City and/or Edison Company for the use of Sections G-7 and T-7, RFC shall have the option to obtain further supplies of energy in the manner, in the quantity and at the maximum demand aforesaid for additional periods of one year each at rates and charges to be agreed upon in writing between RFC and City, Edison Company, and California Electric. Said option shall be exercised in each instance by written notice thereof to the Secretary, served not later than May 31st of any year, together with

an original counterpart of the written agreement between RFC and City, Edison Company; and California Electric as to rates and charges to be paid by RFC during the next succeeding year.

(b) Nothing in this article or any extension of the rights of RFC hereunder shall entitle RFC to supplies of electric energy hereunder beyond a period ending six (6) months after the cessation of hostilities in the existing war against Japan, as announced by proclamation of the President or by Concurrent Resolution of the Congress.

(c) Said firm energy released by District under Article 14 hereof, including energy made available to RFC, shall be taken and/or paid for as follows: 55 per centum thereof by City; 40 per centum thereof by Edison Company; 5 per centum thereof by California Electric. Such payments shall be made to the United States for the credit of District and at rates and in the manner provided in Articles 21, 22, and 23 hereof.

(d) RFC shall pay the United States for such released firm energy as shall be delivered to it hereunder, such payment to be for the credit of City, Edison Company, and California Electric, in the proportions hereinabove referred to and at the rates and in the manner provided in Article 21 (b) hereof.

DELIVERY OF ENERGY

16. (a) The energy released, sold, and delivered to City, Edison Company, and California Electric, pursuant to this contract, will be delivered to each of the said parties at Boulder Power Plant, at a frequency of approximately 60 cycles; provided that (1) deliveries to Edison Company at Boulder Power Plant may be at a frequency of approximately 50 cycles; (2) deliveries to Edison Company may be at the points of connection of hydroelectric plants of the United States on the Colorado River below Boulder Dam, with the District's transmission line at a frequency of approximately 60 cycles, in the same manner and under the same conditions as are provided for deliveries to District in District's Energy Contract, all of said deliveries to be at transmission voltage; and (3) deliveries to City, Edison Company, or California Electric may be at such points of connection with hydroelectric plants of the United States on the Colorado River below Boulder Dam as may be established by mutual agreement between the United States and City, Edison Company, or California Electric.

(b) The phrase "which for the time being may be in excess of District's requirements" as used in Article 9 (a) of District's Energy Contract shall be interpreted to include the requirements in connection with transmission of energy allotted to but unused by District and resold for its credit.

(c) The energy released and sold hereunder, subject to the provisions of subdivision (d) of this Article, shall be delivered under the same conditions as are provided in the respective contracts of City and Edison Company for the delivery of their respective allotments of firm energy from Boulder Power Plant.

(d) Energy released and sold hereunder shall be subject to the interchange privilege permitted to the United States under Article 9 (a) of the District's Energy Contract and Article 20 (a) of the Agency Contract (Exhibit 1 of District's Energy Contract); provided, that the substitution of energy from sources other than Boulder Power Plant, and the replacement thereof, shall be accomplished without interfering with the service to, or increasing the charges against, City, Edison Company, or California Electric, and without impairing or extending the rights or obligations respectively of the other allottees.

USE OF SECTIONS G-7 AND T-7

17. (a) Pursuant to the provisions of Defense Plant Contract, and particularly Article 305 thereof, the Secretary agrees that Edison Company shall, commencing at midnight, May 31, 1945, and upon the terms and conditions in paragraph (b) of this Article provided, have the exclusive right to the use, as a Boulder Power Contractor, of Sections G-7 and T-7, for a period ending at midnight, May 31, 1946.

(b) Edison Company, in consideration of the exclusive right to the use of said sections and in consideration of the payment by RFC for energy as provided in Article 21 (b) hereof, will, to the extent hereinafter provided, for the period ending at midnight, May 31, 1946, be responsible for providing generating capacity at Boulder Power Plant, up to 65,000 kilowatts for the generation of energy made available to RFC hereunder.

In no event shall any liability accrue against Edison Company or any of its officers, agents or employees for any damage, direct or indirect, arising on account of a failure of Edison Company to provide said generating capacity if said failure be due to drought, hostile diversion, Act of God, Government, the public enemy or other forces beyond their reasonable control.

(c) For the period ending at midnight, May 31, 1946, Edison Company agrees that each hour it has exclusive use of Section G-7 with or without T-7, it will pay to the United States for the credit of RFC \$22.50. In the event that said Section G-7 shall be available to it at least 6,000 hours during said period ending May 31, 1946, Edison Company will pay an aggregate of not less than \$135,000 for the right to use the same. Section G-7 shall be deemed available for the purpose of this subsection when Sections G-7 and T-7 are in operation or are ready for operation. In the event that said

Section G-7, with the consent of Edison Company, shall be used for service of another power contractor such contractor, except as may be by agreement elsewhere provided, shall be charged at the rate of \$22.50 per hour, and any amount received by the Secretary for such use shall be credited as received to the RFC and shall be applied to reduce the minimum obligation of Edison Company as to Sections G-7 and T-7 specified in this subdivision (c).

(d) In the event the generation of electric energy on Section G-7 for Edison Company at fifty cycles shall result in cavitation of the runner at a rate in excess of twenty-five cubic inches per month, Edison Company shall pay to the United States the additional cost of repairs resulting from such excess cavitation.

PLACE OF GENERATION

18. (a) Subject to Article 9 (b) of District's Energy Contract any energy which Edison Company and/or RFC has the right to take from Boulder Power Plant, and any energy which California Electric has the right to take hereunder from Boulder Power Plant, may be generated in Section G-2; provided that the execution of this contract by City is with the understanding and agreement between City and California Electric that the generation of energy for California Electric in Section G-2 and/or the transmission of the same, which results in parallel operation, or otherwise, shall neither prejudice or limit the rights of the City or California Electric under that certain Power Transmission Agreement between the Los Angeles Gas and Electric Corporation, Southern Sierras Power Company, and Nevada California Power Company dated May 18, 1932, nor modify or affect the relative rights of City and/or California Electric with regard to Sections G-5, T-5, and C. F. at Boulder Power Plant and/or the transmission lines referred to in said transmission agreement as "Boulder Canyon Line" and "Seal Beach Line." Any energy which City has the right to take from Boulder Power Plant may likewise, with the consent of District and Edison Company, be generated on Section G-2.

(b) City shall act as operating agent as to energy generated for Edison Company and California Electric on Sections G-2 and G-7.

(c) Any energy, including energy purchased hereunder, may be generated for City, Edison Company, California Electric, or RFC in sections assigned by contract to said parties respectively, or made available to them, respectively, under the Regulations, subject to agreements as to the use of such sections not inconsistent with the Regulations and not determined and announced by the Secretary to be detrimental to the interests of the United States as provided in Article 18 (e) of the Regulations.

DELIVERY OF WATER FOR GENERATION OF ELECTRICAL ENERGY

19. (a) Subject to—

(i) The statutory requirement that Boulder Dam and the reservoir created thereby shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights mentioned in Section 6 of the Project Act; and third, for power; and

(ii) The further statutory requirement that this contract is made upon the express condition and with the express covenant that the rights of City, Edison Company, California Electric, and RFC, as contractors for electrical energy, to the use of the waters of the Colorado River, or its tributaries, shall be subject to and controlled by the Colorado River Compact;

the United States will deliver water in the quantity, in the manner, and at the times necessary for the generation of the energy to which City, Edison Company, California Electric, and RFC are entitled under this contract, in accordance with the provisions of Article 20 of the Agency Contract, entitled "Integration of Operations." If said Agency Contract should be terminated as to City or as to Edison Company prior to the termination of this contract, the United States will itself generate and deliver energy, subject to (i) and (ii) above, in the manner required by this contract, in the quantity to which either City, Edison Company, California Electric, or RFC is entitled hereunder, and in accordance with their respective load requirements.

(b) The United States reserves the right temporarily to discontinue or reduce the delivery of water for the generation of electrical energy at any time for the purpose of maintenance, repairs, and/or replacements, or installation of equipment, at the Project, and for investigations and inspections necessary thereto; provided, however, that the United States shall, except in case of emergency, give to City, to Edison Company, to California Electric, and to RFC reasonable notice in advance of such temporary discontinuance or reduction, and that the United States shall make such inspections and perform such maintenance and repair work, after consultation with City, Edison Company, California Electric, and/or RFC, at such times and in such manner, consistent with any program of integrated operations established under the provisions of Article 20 of said Agency Contract, as to cause the least inconvenience to City, Edison Company, California Electric, and/or RFC, and that the United States shall prosecute such work with diligence, and, without unnecessary delay, resume delivery of water so discontinued or reduced.

(c) Should the delivery of water, for any reason or cause, other than any act or omission of City, Edison Company, California Electric, or RFC, be discontinued or reduced below the amount

required for the generation of firm energy in accordance with the provisions of this contract, the total number of hours of such discontinuance or reduction in any year shall be determined by taking the sum of the number of hours during which the delivery of water is totally discontinued, plus the product of the number of hours during which the delivery of water is partially reduced and the percentage of said partial reduction below the actual quantity of water required for generation of firm energy. Total or partial reductions in the delivery of water which do not reduce the power output below the amount required at the time for generation of firm energy under any program of integrated operations established under Article 20 of said Agency Contract, or if said Agency Contract be terminated as to either City of Edison Company, below the amount required at the time for the load requirements of City, Edison Company, California Electric, and/or RFC, as the case may be, will not be considered in determining the total hours of discontinuance in any year of operation. The minimum annual payments specified in Article 23 hereof shall be reduced by the ratio that the total number of hours of such discontinuance bears to eight thousand seven hundred sixty (8,760).

(d) In no event shall any liability accrue against the United States, its officers, agents, and/or employees, for any damage, direct or indirect, arising on account of drought, hostile diversion, Act of God or the public enemy, or other similar cause; nevertheless, interruptions in delivery of water occasioned by such causes shall be governed as provided in this Article 19.

MEASUREMENT OF ENERGY

20. (a) The amount of electric energy delivered to City, Edison Company, and California Electric, respectively, including energy purchased hereunder, shall be determined in the manner provided for the measurement of energy in their respective contracts for firm energy from Boulder Power Plant referred to in Article 3 hereof.

(b) All electric energy delivered to RFC and the maximum demand of RFC will be measured at approximately thirteen thousand two hundred (13,200) volts at the Basic Magnesium Project, and RFC, at its sole cost and expense, shall furnish and install suitable metering equipment of a type and in manner satisfactory to the Chief Engineer of the Bureau of Reclamation for this purpose. For the purpose of computing the maximum demand and the amount of energy delivered to the 230,000-volt lines of RFC, at the 230,000-volt switchyard at Boulder Power Plant one and one-quarter per centum ($1\frac{1}{4}\%$) shall be added to the meter readings to cover line and transformer losses. The said metering equipment shall be maintained by and at the expense of RFC. Meters shall be tested by the United States at any reasonable time upon the request of either City, Edison Company, the United

States, or RFC, and in any event they shall be tested at least once each year. If the test discloses that the error of any meter exceeds one per centum (1%), such meter shall be adjusted so that the error does not exceed one-half of one per centum ($\frac{1}{2}\%$). Meter equipment shall be tested by means of suitable testing equipment which will be provided by the United States and which shall be calibrated by the National Bureau of Standards. Meters shall be kept sealed, and the seals shall be broken only in the presence of representatives of both the United States and RFC, and likewise all tests of meter equipment shall be conducted only when representatives of both the United States and RFC are present. The electric energy delivered hereunder during any period in which the meters furnished to measure such electric energy fail to register shall, for billing purposes, be estimated from the best information available.

(c) Delivery of electric energy to District's transmission line at points other than Boulder Power Plant shall be measured by meters furnished and maintained by the United States. The electric energy so delivered during any period in which the meters so furnished fail to register shall, for billing purposes, be estimated from the best information available. The testing of such meters and calibration of testing equipment shall be in accordance with Article 19 of the Agency Contract, being Exhibit 1 of District's Energy Contract referred to in Article 3 hereof. If said Agency Contract should be terminated, the same provisions shall apply as nearly as may be.

(d) The apportionment of electric energy delivered to District's transmission line, as between Edison Company, California Electric, and District, shall be determined by Edison Company and District (Edison Company being hereby designated as the representative of California Electric for that purpose), taking into consideration line, transformer, and other losses, and the United States, and City as operating agent, shall be advised of such determination by the fourth day of the following month. Billings by the United States for energy on the basis of such determination shall be accepted and paid by District, Edison Company, and California Electric, respectively. In the event that for any reason Edison Company and District shall fail or refuse to make or report such joint determination to the United States and City, as operating agent, within said time, District shall forthwith report its determination of such apportionment to the United States, City as operating agent, and to Edison Company and California Electric, and billing on the basis of such determination by District shall be accepted and paid by District, Edison Company, and California Electric, but in no event shall the aggregate amount payable to the United States be reduced. Such acceptance and payment shall be without prejudice to adjustment of any differences that may exist or arise between District, Edison Company, and California Electric.

RATES AND CHARGES

21. (a) The rate to be paid to the United States, for credit to District, by City, Edison Company, and California Electric for electric energy purchased under this contract shall be the rate for firm energy determined in accordance with the Regulations, except that for the period commencing at midnight, May 31, 1945, and ending at midnight, May 31, 1950, such annual rate shall be the following percent of such rate for firm energy:

Year of operation:	<i>Percent of the rate for Firm Energy</i>
1945-46.....	40
1946-47.....	50
1947-48.....	65
1948-49.....	80
1949-50.....	95

(b) The energy rate to be paid by RFC for electric energy delivered to it hereunder shall be the energy rate for firm energy determined in accordance with the Regulations, and RFC shall pay to the United States in addition thereto for the credit of City, Edison Company, California Electric and District, in such proportions and amounts as shall be agreed upon and provided by the 1945 Collateral Contract referred to in Article 28 hereof filed with the Secretary, a monthly charge of fifty cents (50¢) per kilowatt of 30-minute maximum demand created by RFC during such month. The minimum aggregate of such monthly demand charges for the period commencing June 1, 1945, and ending May 31, 1946, shall be \$135,000, provided, however, that RFC shall have the right to terminate its rights and obligations to take and pay for energy under this contract by giving thirty (30) days written notice to the Secretary and to City and Edison Company. Such notice, however, shall not be given prior to December 1, 1945. In the event of termination upon such notice, the minimum obligation of \$135,000 hereinabove set out shall be reduced at the rate of \$10,000 per month for the period between the effective date of such termination notice and June 1, 1946. RFC shall pay monthly for electric energy delivered to it in accordance with the foregoing rates and charges. The United States will submit bills to RFC by the tenth of each month immediately following the month during which energy was delivered to it, and payments shall be due on the twenty-fifth day of the same month. If such rates and charges are not paid when due, an interest charge of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the twenty-fifth day of each succeeding calendar month until the amount due, including such interest, is paid in full.

BILLING AND PAYMENTS

22. (a) For the year of operation beginning at midnight, May 31, 1945, and ending at midnight, May 31, 1946, District estimates that the energy heretofore contracted for by District under District's Energy Contract and unused by District for pumping Colorado River water into and in its aqueduct and unused by resale consumers under contracts referred to in Article 5 hereof, will be 1,358,000,000 kilowatt-hours. District agrees to advise the Director of Power at Boulder Power Plant, and City, Edison Company, and California Electric, respectively, in writing, not later than the 1st day of February of each year, as to the amount of energy heretofore contracted for by District which District estimates will be unused by it for pumping Colorado River water into and in its aqueduct and unused by resale consumers under contracts referred to in Article 5 hereof, during the next succeeding year of operation.

(b) The electric energy agreed to be taken and/or paid for by City, Edison Company, and California Electric under this contract, as estimated for the then current year of operation pursuant to subdivision (a) of this article, shall, for billing purposes, be in addition to the respective minimum quantities of firm energy which said purchasers are respectively required to take and/or pay for during such year of operation under the terms of their respective energy contracts referred to in Article 3 hereof, and shall be billed to them and paid in the same manner as is provided in their respective energy contracts.

(c) (i) The energy billed to City, Edison Company, and California Electric each month, up to one-twelfth ($\frac{1}{12}$) of their respective minimum obligations under their several contracts of May 29, 1941, referred to in Article 3 hereof, multiplied by the number of months which shall have elapsed since the 31st day of May next preceding shall be deemed to have been taken under said contracts, respectively.

(ii) The energy billed to City, Edison Company, and California Electric each month, in addition to that classified under (i) of this subdivision (c), up to one-twelfth ($\frac{1}{12}$) of the respective minimum obligations of City, Edison Company, and California Electric under this contract (as established for the then current year under the provisions of subdivision (a) of this article) multiplied by the number of months which shall have elapsed since the 31st day of May next preceding, shall be deemed to have been taken under this contract, and the moneys paid on account thereof shall be credited to the District.

(iii) For energy classified under (ii) of this subdivision (c), during the period beginning at midnight, May 31, 1945, and ending at midnight, May 31, 1950, City, Edison Company, and

California Electric shall be billed monthly and shall pay the percentage of the firm energy rate established for the then current year by Article 21 hereof.

(iv) No energy will be billed to any party hereto at the rate for secondary energy until and unless such party shall have taken energy and paid the firm energy rate for one-twelfth ($\frac{1}{12}$) of the aggregate firm energy referred to in (i) and (ii) of this subdivision (c), multiplied by the number of months which shall have elapsed since May 31 last preceding.

(d) At the close of each year of operation the exact amounts of money chargeable to the respective parties hereto shall be determined, and adjustment shall be made by additional payments or by credits to correct for any deviation from the estimates in the actual amounts chargeable to each thereof.

(e) In the event that either City, Edison Company, or California Electric in any year of operation shall take less than its annual obligation to take and/or pay for firm energy under this contract and during said year of operation any one or more of said three purchasers shall take and pay for energy at the rate for secondary energy, the purchaser or purchasers taking less than its or their full annual obligation of such firm energy under this contract, shall receive a credit out of, but not exceeding, the proceeds of the sale of energy to any other purchaser or purchasers, at the rate for secondary energy and in an amount not exceeding the product of the number of kilowatt hours of firm energy not taken hereunder times the current rate for secondary energy. If two of said purchasers are entitled to such credit, the credit shall be apportioned in the ratio that the kilowatt hours of firm energy not taken hereunder by each thereof shall bear to the total kilowatt hours of firm energy not taken under this contract by all of the said purchasers entitled to credit under this subdivision (e).

(f) The apportionment of and billing for the generating charges assigned in connection with the generation of energy purchased hereunder shall be in accordance with the Regulations, except in so far as such apportionment may be expressly modified by this contract or any other contract between the parties affected, on file with the Secretary and not determined and announced by him to be detrimental to the interests of the United States, as provided in Section 18 (e) of the Regulations.

(g) No interest charge shall attach against the parties hereto for nonpayment of bills for energy sold under this contract during the period after May 31, 1945, pending notification in writing from the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, that this contract has been executed, but after such notification all charges for energy taken during such period for which

bills have been rendered shall become subject to such interest charge if payment thereof is not made within twenty (20) days after receipt of such notification.

MINIMUM ANNUAL PAYMENTS

23. The minimum quantities of energy which City, Edison Company, and California Electric shall each take and/or pay for annually under the terms of this contract shall be their respective percentages, as provided in Article 15 hereof, of energy heretofore allotted to and contracted for by the District and released, as provided in Article 14 hereof, as determined from time to time. The minimum annual payment in each instance shall be reduced in case of interruptions or curtailment of delivery of water as provided in Article 19 hereof.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

24. Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

TRANSFER OF INTEREST IN CONTRACT

25. No voluntary transfer of this contract, or of the rights of any of the parties hereunder, shall be made without the written approval of the Secretary, except that RFC may transfer this contract or its rights hereunder to the United States or any Department or Independent Establishment thereof without such approval, and any successor or assign of the rights of any of the parties hereto, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Project Act, as modified by the Adjustment Act, and of the Adjustment Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder: provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this article.

DISPUTES AND DISAGREEMENTS

26. Disputes or disagreements between the United States and any party to this contract as to the interpretation or performance of the provisions hereof shall be determined either by arbitration or court

proceedings. If in any such arbitration or court proceedings, or otherwise, any sum or amount paid by City, by Edison Company, or by California Electric on the demand or bill of the United States under this contract shall be held not to have been due or owing, payment shall not be deemed to have been voluntary, and such sum or amount shall be refunded. Whenever a controversy between the United States and any party hereto arises out of this contract, and the disputants agree to submit the matter to arbitration, the Secretary shall name one arbitrator and the other party to such dispute or disagreement shall name one arbitrator and the two arbitrators thus chosen shall select a third arbitrator, but in the event of their failure to name such third arbitrator within five (5) days after their first meeting, such third arbitrator shall be named by the Chief Justice of the Supreme Court of the United States. The decision of any two of such arbitrators shall be a valid award of the arbitrators, and shall be final and binding as to the disputants.

NOTICES

27. (a) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the City shall be delivered, or mailed postage prepaid, to the General Manager and Chief Engineer, Department of Water and Power, Los Angeles, California.

(c) Any notice, demand, or request required or authorized by this contract to be given or made to or upon Edison Company shall be delivered, or mailed postage prepaid, to the President, Southern California Edison Company Ltd., Los Angeles, California.

(d) Any notice, demand, or request required or authorized by this contract to be given or made to or upon California Electric shall be delivered, or mailed postage prepaid, to the General Manager, California Electric Power Company, Riverside, California.

(e) Any notice, demand, or request required or authorized by this contract to be given or made to or upon District shall be delivered, or mailed postage prepaid, to the General Manager and Chief Engineer of The Metropolitan Water District of Southern California, Los Angeles, California.

(f) Any notice, demand or request required or authorized by this contract to be given or made to or upon RFC shall be delivered, or

mailed postage prepaid, to the Executive Director, Office of Defense Plants, Reconstruction Finance Corporation, 811 Vermont Avenue NW., Washington, D. C., with copy thereof to the Manager, Basic Magnesium Project, Las Vegas, Nevada.

(g) The designation of any person specified in this article or in any demand or request, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

TERM

28. The term of this contract shall commence at midnight, May 31, 1945, and shall continue to midnight, May 31, 1987, except that if in any year of operation firm energy at Boulder Power Plant allotted to but unused by District for pumping water into and in its aqueduct and unused by resale consumers under contracts referred to in Article 5 hereof, shall be less than 50,000,000 kilowatt-hours, or if as of the close of any year of operation the annual average of such energy for the next preceding five years shall have been less than 150,000,000 kilowatt-hours, either District, City, Edison Company, or California Electric, may, upon written notice to the other parties hereto, terminate this contract as to all parties, and in the event of such notice the end of the term hereof shall be the end of the second year of operation after the delivery of such notice, provided, however, that this contract shall be ineffective, and no rights or obligations shall arise hereunder until and unless that certain contract executed of even date herewith between City, Edison Company, California Electric, and the District, relating, among other things, to the use of generating equipment and the apportionment of generating charges at Boulder Power Plant (herein referred to as the 1945 Collateral Contract), shall become effective in the manner provided in Article 18 of the Regulations.

CONTRACT CONTINGENT UPON APPROPRIATIONS

29. This contract is subject to appropriations being made by Congress from time to time of money sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam fund for such purposes. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient money not being so appropriated or on account of there not being sufficient money in the Colorado River Dam fund for such purposes.

PRIORITY OF CLAIMS OF THE UNITED STATES

30. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

TITLE TO REMAIN IN THE UNITED STATES

31. As provided in Section Six (6) of the Project Act, the title to Boulder Dam, Lake Mead, Boulder Power Plant, and incidental works, shall forever remain in the United States.

OUTSTANDING CONTRACTS

32. Except as expressly modified by the terms hereof, outstanding contracts between the United States and the respective parties hereto shall be and remain in full force and effect, and nothing contained herein shall be construed as diminishing the obligations to the United States of the City, District, Edison Company, and California Electric, or any of them, under existing contracts.

OFFICIALS NOT TO BENEFIT

33. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

NATURE OF OBLIGATIONS HEREUNDER

34. All of the obligations, responsibilities, rights, and duties under this contract shall be several and not joint, except in instances where such obligations, responsibilities, rights, and duties are specifically made joint by the terms hereof.

IDENTIFICATION OF CONTRACT

35. This contract shall be known as "District's 1945 Resale Contract."

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By HAROLD L. ICKES, *Secretary of the Interior*.
RECONSTRUCTION FINANCE CORPORATION,
By FRANK T. ROWAN,

Attest:

LEO NIELSON, *Secretary*.
THE CITY OF LOS ANGELES, acting by and through
its Board of Water and Power Commissioners,
By R. A. HEFFNER, *President*.

Attest:

[SEAL] JOSEPH L. WILLIAMS, *Secretary*.
DEPARTMENT OF WATER AND POWER OF THE
CITY OF LOS ANGELES, by the Board of Water
and Power Commissioners,
By R. A. HEFFNER, *President*.

Attest:

[SEAL] JOSEPH L. WILLIAMS, *Secretary*.
SOUTHERN CALIFORNIA EDISON COMPANY LTD.,
By HARRY J. BAUER, *Chairman*.

Attest:

[SEAL] O. V. SHOWERS, *Secretary*.
CALIFORNIA ELECTRIC POWER COMPANY,
By A. B. WEST, *President*.

Attest:

[SEAL] H. DEWES, *Secretary*.
THE METROPOLITAN WATER DISTRICT OF SOUTH-
ERN CALIFORNIA,
By JULIAN HINDS, *General Manager and Chief Engineer*.

Attest:

[SEAL] A. L. GRAM, *Ex. Secretary*.
Approved as to form and execution:

JAMES H. HOWARD,
General Counsel.

Approved as to form and legality this 20th day of November 1945:

RAY L. CHESEBRO,
City Attorney.

By JOHN H. MATHEWS,
Deputy.

Approved as to form, January 20, 1945:

GAIL C. LARKIN,
General Counsel.

Legal features approved:

COIL, *General Counsel, FOD*.

Part X

THE HOOVER DAM WATER CONTRACTS AND RELATED DATA

CALIFORNIA

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Appendix 1001

WATER: CALIFORNIA

PRELIMINARY AGREEMENT, FEBRUARY 21, 1930

Whereas the undersigned, Colorado River Commissioners of California, representatives of the Governor of California, representatives of the Metropolitan Water District, the Coachella Valley County Water District, the Imperial Irrigation District, the Palo Verde Irrigation District, and the Boulder Dam Association have reached an understanding for the division of Colorado River water which will be available to California upon the following basis:

Class A water: Agricultural groups, 3,850,000 acre-feet per annum; Metropolitan District, 550,000 acre-feet per annum; total, 4,400,000 acre-feet per annum.

Next 550,000 acre-feet per annum, available for California use; Metropolitan District, 550,000 acre-feet per annum.

All water in river available for California use in excess of above 4,950,000 acre-feet per annum: Agricultural group, all.

And have studied in great detail the available water supply from the Colorado River and the water requirements of California from that source, and while we recognize that California has been so limited as to make infeasible otherwise feasible projects, including several hundred thousand acres of land, we do find that if there are no further limitations then upon the construction of the Boulder Dam the supply will be ample for the now going concerns using water from the Colorado and also for the Colorado River Aqueduct to serve the Metropolitan Water District of Southern California; the Palo Verde Valley lands and the All-American Canal to serve the enlarged development in the Imperial and Coachella valleys; and we further find that the Colorado River Aqueduct and the All-American Canal will constitute extremely important factors in the growth, protection, and prosperity of southern California, and both of these projects ought to be consummated at the earliest possible time.

Now, therefore, be it *resolved*, That we request all those in authority to expedite as much as reasonably possible all steps leading up to the construction of the Boulder Dam, the Colorado River Aqueduct, and the All-American Canal, and we urge upon the people of southern California that they give these three great projects their moral and

financial support, to the end that each of them may be an accomplished fact in the very near future.

Dated February 21, 1930.

(Signed) W. J. CARE.	JOHN G. BULLOCK.
A. P. CURRAN.	FRANKLIN THOMAS.
JOHN L. BACON.	S. H. FINLEY.
W. B. MATHEWS.	W. O. BLAIR.
EARL C. POUND.	R. W. BLACKBURN.
S. C. EVANS.	THOS. C. YAGER.
W. P. WHITSETT.	MARK ROSE.
HARRY L. HEFFNER.	M. J. DOWD.
F. E. WEYMOUTH.	CHAS. L. CHILDERS.
L. A. HAUSER.	

Appendix 1002

WATER: CALIFORNIA

LETTER OF THE SECRETARY REQUESTING RECOMMENDATION OF THE STATE IN EFFECTING A WATER ALLOCATION, NOVEMBER 5, 1930

THE SECRETARY OF THE INTERIOR,
Washington, D. C., November 5, 1930.

THE IMPERIAL IRRIGATION DISTRICT,
El Centro, California.

DEAR SIR: It has been pointed out to me by the attorneys drafting the proposed All-American Canal reimbursement contract that it will be impossible to insert a definite figure to cover the quantity of water to be delivered under that contract until the State of California has recommended to us an apportionment of the California share of the waters of the Colorado River. While an agreement between the Metropolitan Water District and the agricultural group, so called, has been submitted to the Department, we have no information as to the division between the Palo Verde Irrigation District, the Yuma project in California, and the proposed contractors for All-American Canal water. In addition, we have been advised by the city and county of San Diego that it claims certain rights, and it may be necessary for you to take up with the Office of Indian Affairs the question of providing water to certain Indian reservations in California.

In any event, the division of California's share of Colorado River water among various California interests is a matter which the State, and not the Department of the Interior, should work out and recommend to the Department.

Accordingly, there is inclosed a draft of recommendations which the California Division of Water Rights might submit to the Department of the Interior, after it has determined what figures and provisions should be inserted in the blanks. This allocation, when finally determined, presumably through agreement of all interests and approval by the proper State authority, might well be included as a uniform clause in every California water contract. Prior to submission of final recommendation by the State, it will be desirable to have a draft available here in order to determine whether there has been a satisfactory disposition of the questions of water apportionment which must be solved in the water contracts.

Appendix 1003

**WATER: CALIFORNIA
SEVEN-PARTY WATER AGREEMENT,
AUGUST 18, 1931**

AGREEMENT

REQUESTING THE DIVISION OF WATER RESOURCES OF THE STATE OF CALIFORNIA TO APPORTION CALIFORNIA'S SHARE OF THE WATERS OF THE COLORADO RIVER AMONG THE VARIOUS APPLICANTS AND WATER USERS THEREFROM IN THE STATE, CONSENTING TO SUCH APPORTIONMENTS, AND REQUESTING SIMILAR APPORTIONMENTS BY THE SECRETARY OF THE INTERIOR OF THE UNITED STATES

This agreement, made the 18th day of August 1931, by and between Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, Metropolitan Water District of Southern California, City of Los Angeles, City of San Diego, and County of San Diego.

Witnesseth:

Whereas the Secretary of the Interior did, on November 5, 1930, request of the Division of Water Resources of California a recommendation of the proper apportionments of the water of and from the Colorado River to which California may be entitled under the provisions of the Colorado River compact, the Boulder Canyon project act, and other applicable legislation and regulations to the end that the same could be carried into each and all of the contracts between the United States and applicants for water contracts in California as a uniform clause; and

Whereas the parties hereto have fully considered their respective rights and requirements in cooperation with the other water users and applicants and the Division of Water Resources aforesaid;

Now, therefore, the parties hereto do expressly agree to the apportionments and priorities of water of and from the Colorado River for use in California as hereinafter fully set out and respectfully request the Division of Water Resources to, in all respects, recognize said apportionments and priorities in all matters relating to State authority and to recommend the provisions of Article I hereof to the Secretary of the Interior of the United States for insertion in any and all

contracts for water made by him pursuant to the terms of the Boulder Canyon project act, and agree that in every water contract which any party may hereafter enter into with the United States, provisions in accordance with Article I shall be included therein if agreeable to the United States.

ARTICLE I

The waters of the Colorado River available for use within the State of California under the Colorado River compact and the Boulder Canyon project act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said district as it now exists and upon lands between said district and the Colorado River, aggregating (within and without said district) a gross area of 104,500 acres, such waters as may be required by said lands.

SEC. 2. A second priority to Yuma project of the United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the "Lower Palo Verde Mesa," adjacent to Palo Verde Irrigation District for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

SEC. 4. A fourth priority to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the coastal plain of Southern California, 550,000 acre-feet of water per annum.

SEC. 5. A fifth priority (a) to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the coastal plain of southern California, 550,000 acre-feet of water per annum and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American

Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the "Lower Palo Verde Mesa," adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on map No. 23000 of the Department of the Interior, Bureau of Reclamation.

SEC. 8. So far as the rights of the allottees named above are concerned, the Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said district and/or said city (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reduced diversions by said district and/or said city; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said district and/or said city and such users resulting therefrom.

SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said city and/or said county (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said city and/or said county; provided, that accumulations shall be subject to such conditions as to accumulations, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said city and/or said county and such users resulting therefrom.

SEC. 10. In no event shall the amounts allotted in this agreement to the Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusion of a supply for both said district and said city, and either or both may

use said apportionments as may be agreed by and between said district and said city.

SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said city and said county, and either or both may use said apportionments as may be agreed by and between said city and said county.

SEC. 12. The priorities hereinbefore set forth shall be in nowise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties.

ARTICLE II

That each and every party hereto who has heretofore filed an application or applications for a permit or permits to appropriate water from the Colorado River requests the Division of Water Resources to amend such application or applications as far as possible to bring it or them into conformity with the provisions of this agreement; and each and every party hereto who has heretofore filed a protest or protests against any such application or applications of other parties hereto does hereby request withdrawal of such protest or protests against such application or applications when so amended.

ARTICLE III

That each and all of the parties to this agreement respectfully request that the contract for delivery of water between the United States of America and the Metropolitan Water District of Southern California under date of April 24, 1930, be amended in conformity with Article I hereof.

In witness whereof, the parties hereto have caused this agreement to be executed by their respective officers thereunto duly authorized, the day and year first above written. Executed in seven originals.

Recommended for execution:

PALO VERDE IRRIGATION DISTRICT,
By ED. J. WILLIAMS.
ARVIN B. SHAW, JR.
IMPERIAL IRRIGATION DISTRICT,
By CHAS. L. CHILDERS.
M. J. DOWD.
COACHELLA VALLEY COUNTY
WATER DISTRICT,
By THOS. C. YAGER.
ROBBINS RUSSEL.
METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA.,
By W. B. MATTHEWS.
C. C. ELDER.
CITY OF LOS ANGELES,
By W. W. HURLBUT.
C. A. DAVIS.
CITY OF SAN DIEGO,
By C. L. BYERS.
H. N. SAVAGE.
COUNTY OF SAN DIEGO,
By H. N. SAVAGE.
C. L. BYERS.

[The agreement was thereafter ratified by each of the seven parties.]

Appendix 1004
WATER: CALIFORNIA
GENERAL REGULATIONS, APRIL 23, 1930

THE SECRETARY OF THE INTERIOR,
Washington, April 23, 1930.

GENERAL REGULATIONS

CONTRACTS FOR THE STORAGE OF WATER IN BOULDER CANYON RESER-
VOIR, BOULDER CANYON PROJECT, AND THE DELIVERY THEREOF

Storage water in Boulder Canyon Reservoir will be sold upon such terms and conditions as the Secretary may fix from time to time. Water so sold may be delivered at such points on the river as may be agreed upon for irrigation and domestic uses.

Contracts respecting water for domestic uses shall be for permanent service, and shall conform to Paragraph a of Section 4 of the Boulder Canyon Project Act. No charge shall be made for water or for the use, storage or delivery of water for irrigation or for water for potable purposes in the Imperial or Coachella Valleys.

Where water is taken from the Colorado River above the Boulder Canyon Dam, the utilization of the power plant will be impaired to that extent, and the right is reserved to make a higher charge for water taken above the dam, than if delivery is made below the dam.

No person shall have or be entitled to have the use for any purpose of the water stored in Boulder Canyon Reservoir except by contract made in pursuance of these regulations. All purchases of water shall be subject to all the terms and provisions of the Colorado River Compact and of the Boulder Canyon Project Act.

The right is reserved to amend or extend these regulations from time to time consistently with said compact and the laws of Congress, as the public need may require.

RAY LYMAN WILBUR,
Secretary of the Interior.

A485

Appendix 1005

WATER: CALIFORNIA
GENERAL REGULATIONS, SEPTEMBER 28, 1931

UNITED STATES DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, September 28, 1931.

GENERAL REGULATIONS

CONTRACTS FOR THE STORAGE OF WATER IN BOULDER CANYON RESER-
VOIR, BOULDER CANYON PROJECT, AND THE DELIVERY THEREOF

1. No person shall have or be entitled to have the use for any purpose of the water stored in Boulder Canyon Reservoir except by contract made in pursuance of these regulations. All contracts for delivery of water shall be subject to all the terms and provisions of the Colorado River Compact and of the Boulder Canyon Project Act.

2. The right is reserved to amend or extend these regulations from time to time consistently with said compact and the laws of Congress, as the public need may require.

3. Storage water in Boulder Canyon Reservoir will be delivered upon such terms and conditions as the Secretary may fix from time to time by regulations and contracts thereunder. Water so contracted for may be delivered at such points on the river as may be agreed upon for irrigation and domestic uses.

4. Contracts respecting water for irrigation and domestic uses shall be for permanent service, and shall conform to Paragraph a of Section 4 of the Boulder Canyon Project Act.

5. No charge shall be made for water or for the use, storage or delivery of water for irrigation or for water for potable purposes in the Imperial and Coachella Valleys. Charges otherwise shall be fixed by regulation from time to time. Where water is permitted by the Secretary to be taken from the Colorado River from the reservoir above the Hoover Dam, the utilization of the power plant will be impaired to that extent, and the right is reserved to make a higher charge for water taken above the dam, than if delivery is made below the dam.

6. Subject to the provisions of Article 7 of these regulations, deliveries of water to users in California shall be in accordance with the following recommendation of the State Division of Water Resources:

"The waters of the Colorado River available for use within the State of California under the Colorado River Compact and the Boulder Canyon Project Act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

"SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said District as it now exists and upon lands between said District and the Colorado River, aggregating (within and without said District) a gross area of 104,500 acres, such waters as may be required by said lands.

"SEC. 2. A second priority to Yuma Project of United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

"SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa', adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in Sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in Sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

"SEC. 4. A fourth priority to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

"SEC. 5. A fifth priority (a) to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the Lower Palo Verde Mesa, adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation.

"SEC. 8. So far as the rights of the allottees named above are concerned, the Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said District and/or said City (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reduced diversions by said District and/or said

City; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said District and/or said City and such users resulting therefrom.

"SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said City and/or said County (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said City and/or said County; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between the said City and/or said County and such users resulting therefrom.

"SEC. 10. In no event shall the amounts allotted in this agreement to the Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusions of a supply for both said District and said City, and either or both may use said apportionments as may be agreed by and between said District and said City.

"SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said City and said County, and either or both may use said apportionments as may be agreed by and between said City and said County.

"SEC. 12. The priorities hereinbefore set forth shall be in no wise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties."

7. The Secretary reserves the right to contract with any of the allottees above named in accordance with the above stated recommendation, or, in the event that such recommendation as to Palo Verde Irrigation District is superseded by an agreement between all the above allottees or by a final judicial determination, to contract with the Palo Verde Irrigation District in accordance with such agreement or determination; *Provided*, that priorities numbered fourth and fifth in said recommendation shall not thereby be disturbed.

(Signed) RAY LYMAN WILBUR,
Secretary of the Interior.

SEPTEMBER 28, 1931.

Appendix 1006

**WATER: CALIFORNIA
PALO VERDE IRRIGATION DISTRICT,
FEBRUARY 7, 1933**

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

UNITED STATES AND PALO VERDE IRRIGATION DISTRICT CONTRACT
FOR DELIVERY OF WATER

(1) THIS CONTRACT, made this 7th day of February nineteen hundred thirty-three, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the reclamation law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Harold L. Ickes, Secretary of the Interior, hereinafter styled the Secretary, and PALO VERDE IRRIGATION DISTRICT, an irrigation district created, organized, and existing under and by virtue of an act of the Legislature of the State of California approved June 21, 1923 (Chapter 452, Statutes of California, 1923), as amended, known as and designated "Palo Verde irrigation district act", with its principal office at Blythe, Riverside County, California, hereinafter referred to as the District;

Witnesseth:

EXPLANATORY RECITALS

(2) Whereas, for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters for reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, subject to the terms of the Colorado River Compact, is authorized to construct, operate and maintain a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water; and

(3) Whereas, after full consideration of the advantages of both the Black Canyon and Boulder Canyon dam sites, the Secretary has determined upon Black Canyon as the site of the aforesaid dam, hereinafter styled the Hoover Dam, creating thereby a reservoir to be hereinafter styled the Boulder Canyon Reservoir; and

(4) Whereas, the District is desirous of entering into a contract for the delivery to it of water from Boulder Canyon Reservoir, and it is to the mutual interest of the parties hereto that such contract be executed and the rights of the District in and to waters of the river be hereby defined.

(5) Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF WATER BY THE UNITED STATES

(6) The United States shall, from storage available in the Boulder Canyon Reservoir, deliver to the District each year at a point in the Colorado River immediately above the District's point of diversion known as Blythe Intake (or as relocated within two miles of the present intake) so much water as may be necessary to supply the District a total quantity, including all other waters diverted for use of the District from the Colorado River, in the amounts and with priorities in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, as follows (subject to availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act):

"The waters of the Colorado River available for use within the State of California under the Colorado River Compact and the Boulder Canyon Project Act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

104,500
16,000

120,500

"SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said District as it now exists and upon lands between said District and the Colorado River, aggregating (within and without said District) a gross area of 104,500 acres, such waters as may be required by said lands.

"SEC. 2. A second priority to Yuma Project of the United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

"SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in Sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive

use under priorities stated in Sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

"SEC. 4. A fourth priority to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

"SEC. 5. A fifth priority (a) to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation.

"SEC. 8. So far as the rights of the allottees named above are concerned, the Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said District and/or said City (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reducing diversions by said District and/or said City; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said District and/or said City and such users resulting therefrom.

"SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said City and/or said County (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said City and/or said County; provided, that accumulations shall be subject to such conditions as to accumulations, retention, release and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between the said City and/or said County and such users resulting therefrom.

"SEC. 10. In no event shall the amounts allotted in this agreement to the Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusion of a supply for both said District and said City, and either or both may use said apportionments as may be agreed by and between said District and said City.

"SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said City and said County, and either or both may use said apportionments as may be agreed by and between said City and said County.

"SEC. 12. The priorities hereinbefore set forth shall be in no wise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties."

The Secretary reserves the right to, and the District agrees that he may, contract with any of the allottees above named in accordance with the above stated recommendation. The District reserves the right to establish, at any time, by judicial determination, its rights to divert and/or use water from the Colorado River. In the event the above stated recommendation as to the District is superseded by an agreement between all the above allottees or by a final judicial determination, the parties hereto reserve the right to further contract in accordance with such agreement or such judicial determination; *Provided*, that priorities numbered fourth and fifth shall not thereby be disturbed.

As far as reasonable diligence will permit said water shall be delivered as ordered by the District, and as reasonably required for potable and irrigation purposes within the areas for which the District is allotted water as described in the above-stated recommendation. This contract is for permanent water service but is subject to the condition that Hoover Dam and Boulder Canyon Reservoir shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights in pursuance of Article VIII of the Colorado River Compact; and third, for power. This contract is made upon the express condition and with the express covenant that the District and the United States shall observe and be subject to, and controlled by, said Colorado River Compact in the construction, management, and operation of Hoover Dam, and other works and the storage, diversion, delivery, and use of water for the generation of power, irrigation, and other purposes. The United States reserves the right to temporarily discontinue or reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacements, or installation of equipment and/or machinery at Hoover Dam, but as far as feasible the United States will give the District reasonable notice in advance of such temporary discontinu-

ance or reduction. The United States, its officers, agents, and employees shall not be liable for damages when, for any reason whatsoever, suspension or reductions in delivery of water occur. This contract neither prejudices nor admits any claim of the District on account of alleged changes in elevation of the river bed, howsoever caused, or the effect of such alleged changes on the District's diversion of water delivered hereunder. This contract is without prejudice to any other or additional rights which the District may now have not inconsistent with the foregoing provisions of this article, or may hereafter acquire in or to the waters of the Colorado River.

RECEIPT OF WATER BY DISTRICT

(7) The District shall receive the water to be delivered to it by the United States under the terms hereof at the point of delivery above stated, and shall at its own expense convey such water to its distribution system, and shall perform all acts required by law or custom in order to maintain its control over such water and to secure and maintain its lawful and proper diversion from the Colorado River:

MEASUREMENT OF WATER

(8) The water to be delivered hereunder shall be measured at Blythe Intake by such measuring and controlling devices or such automatic gauges or both, as shall be satisfactory to the Secretary. Said measuring and controlling devices, or automatic gauges, shall be furnished, installed, and maintained by and at the expense of the District, but they shall be and remain at all times under the complete control of the United States, whose authorized representatives may at all times have access to them over the lands and rights-of-way of the District.

RECORD OF WATER DIVERTED

(9) The District shall make full and complete written reports as directed by the Secretary, on forms to be supplied by the United States, of all water diverted from the Colorado River, and the disposition thereof. The records and data from which such reports are made shall be accessible to the United States on demand of the Secretary.

NO CHARGE FOR DELIVERY OF WATER

(10) The District shall not be required to pay to the United States any tolls, rates, or charges of any kind for or on account of the storage or delivery of water hereunder.

INSPECTION BY THE UNITED STATES

(11) The Secretary or his representatives, shall at all times have the right of ingress to and egress from all works of the District for the purpose of inspection, repairs and maintenance of works of the United States, and for all other proper purposes. The Secretary or his representatives shall also have free access at all reasonable times to the books and records of the District relating to the diversion and distribution of water delivered to it hereunder with the right at any time during office hours to make copies of or from the same.

DISPUTES OR DISAGREEMENTS

(12) Disputes or disagreements as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings, the Secretary being authorized to act for the United States in such proceedings. Whenever a controversy arises out of this contract, and the parties hereto agree to submit the matter to arbitration, the District shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within thirty (30) days after their first meeting, such arbitrators not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

RULES AND REGULATIONS

(13) There is reserved to the Secretary the right to prescribe and enforce rules and regulations not inconsistent with this contract, governing the diversion and delivery of water hereunder to the District and to other contractors. Such rules and regulations may be modified, revised and/or extended from time to time after notice to the District and opportunity for it to be heard, as may be deemed proper, necessary or desirable by the Secretary to carry out the true intent and meaning of the law and of this contract, or amendments thereof, or to protect the interests of the United States. The District hereby agrees that in the operation and maintenance of its diversion works at Blythe Intake, all such rules and regulations will be fully adhered to.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

(14) This contract is made upon the express condition and with the express understanding that all rights based upon this contract shall be subject to and controlled by the Colorado River Compact, being the

compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes", which compact was approved by the Boulder Canyon Project Act.

PRIORITY OF CLAIMS OF THE UNITED STATES

(15) Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

CONTINGENT UPON APPROPRIATIONS

(16) This contract is subject to appropriations being made by Congress from year to year of moneys sufficient to do the work contemplated hereby, and to there being sufficient moneys available in the Colorado River Dam fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient moneys not being so appropriated nor on account of there not being sufficient moneys in the Colorado River Dam fund to permit of said allotments. This agreement is also subject to the condition that if for any reason construction of Hoover Dam is not prosecuted to completion with reasonable diligence, then and in such event either party hereto may terminate its obligations hereunder upon one (1) year's written notice to the other party hereto.

RIGHTS RESERVED UNDER SECTION 3737, REVISED STATUTES

(17) All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

(18) Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States or the District of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any other provision hereof or of a subsequent breach of such provision.

INTEREST IN CONTRACT NOT TRANSFERABLE

(19) No interest in this agreement is transferable, and no sublease shall be made, by the District without the written consent of the Secretary, and any such attempted transfer or sublease shall cause this contract to become subject to annulment, at the option of the United States.

MEMBER OF CONGRESS CLAUSE

(20) No Member of or Delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR,
Secretary of the Interior.

Attest:

NORTHCUTT ELY.
RICHARD J. COFFEY.

PALO VERDE IRRIGATION DISTRICT,
By L. A. HAUSER, *President.*

Attest:

O. W. MALMGREN,
Assistant Secretary.

Approved as to form, February 7, 1933:

(Sgd) RAY LYMAN WILBUR,
Secretary of the Interior.

[Acknowledgments and resolution omitted.]

Appendix 1007

WATER: CALIFORNIA
METROPOLITAN WATER DISTRICT, APRIL 24, 1930

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

CONTRACT FOR DELIVERY OF WATER

(1) THIS CONTRACT, made this 24th day of April, nineteen hundred thirty, pursuant to the Act of Congress approved June 17, 1902 (32 Stat., 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the reclamation law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat., 1057), designated the Boulder Canyon Project Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Ray Lyman Wilbur, Secretary of the Interior, hereinafter styled the Secretary, and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation, hereinafter styled the District, organized and existing under the laws of the State of California;

Witnesseth:

EXPLANATORY RECITALS

(2) Whereas, for the purpose of controlling the floods, improving navigation, and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters for reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, subject to the terms of the Colorado River Compact, is authorized to construct, operate, and maintain a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water; and

(3) Whereas, after full consideration of the advantages of both the Black Canyon and Boulder Canyon dam sites, the Secretary has determined upon Black Canyon as the site of the aforesaid dam, here-

inafter styled the Boulder Canyon Dam, creating thereby a reservoir to be hereinafter styled the Boulder Canyon Reservoir and has determined that the revenues provided for by this contract, together with other contracts in accordance with the provisions of the Boulder Canyon Project Act, are adequate in his judgment to insure payment of all expenses of operation and maintenance of the Boulder Canyon Dam and appurtenant works incurred by the United States, and the repayment within fifty (50) years from the date of completion of said works of all amounts advanced to the Colorado River Dam Fund under Subdivision (b) of Section 2 of the Boulder Canyon Project Act, together with interest thereon made reimbursable under said Act; and

(4) Whereas the District is desirous of entering into a contract for the delivery to it of water from Boulder Canyon Reservoir:

(5) Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF WATER BY UNITED STATES

(6) The United States shall deliver to the District each year from the Boulder Canyon Reservoir at a point in the Colorado River immediately below Boulder Canyon Dam, or as provided in Article 10 hereof, up to but not to exceed one million fifty thousand (1,050,000) acre-feet of water, which shall be delivered continuously as far as reasonable diligence will permit; provided, that such amount is without prejudice to any additional rights which the District may have or acquire in or to the waters of the Colorado River, or to the power of the parties to contract hereafter with reference thereto. The United States shall not be obligated to deliver water to the District when for any reason such delivery would interfere with the use of Boulder Canyon Dam and Reservoir for river regulation, improvement of navigation, flood control, and/or satisfaction of present perfected rights, in or to the waters of the Colorado River, or its tributaries, in pursuance of Article VIII of the Colorado River Compact, and this contract is made upon the express condition and with the express covenant that the right of the District to waters of the Colorado River, or its tributaries, is subject to and controlled by the Colorado River Compact. The United States reserves the right to discontinue or temporarily reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacement, or installation of equipment and/or machinery at Boulder Canyon Dam, but so far as feasible the United States will give the District reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents, and employees shall not be liable for damages when, for any reason whatsoever, suspensions or reductions in delivery of water occur. This contract is for

permanent service, but is made subject to the express covenant and condition that in the event water for the District is not taken or diverted by the District hereunder for District purposes within a period of ten (10) years from and after completion of Boulder Canyon Dam as announced by the Secretary, it may in such event, upon the written order of the Secretary, and after hearing become null and void and of no effect.

RECEIPT OF WATER BY DISTRICT

(7) The District shall receive the water to be delivered to it by the United States under the terms hereof at the point of delivery above stated and shall at its own expense convey such water to its proposed aqueduct, and shall perform all acts required by law or custom in order to maintain its control over such water and to secure and maintain its lawful and proper diversion from the Colorado River.

MEASUREMENT OF WATER

(8) The water to be delivered hereunder shall be measured at the intake of the District's proposed aqueduct by such measuring and controlling devices or such automatic gauges, or both, as shall be satisfactory to the Secretary. Said measuring and controlling devices, or automatic gauges, shall be furnished, installed, and maintained by and at the expense of the District, but they shall be and remain at all times under the complete control of the United States, whose authorized representatives may at all times have access to them over the lands and rights-of-way of the District.

RECORD OF WATER DIVERTED

(9) The District shall make full and complete written monthly reports as directed by the Secretary, on forms to be supplied by the United States, of all water diverted from the Colorado River. Such reports shall be made by the fifth day of the month immediately succeeding the month in which the water is diverted, and the records and data from which such reports are made shall be accessible to the United States on demand of the Secretary.

CHARGE FOR DELIVERY OF WATER

(10) A charge of twenty-five cents (\$0.25) per acre-foot shall be made for water delivered to the District hereunder during the Boulder Dam cost repayment period. It is understood by the District that it may divert water above Boulder Canyon Dam, but that such diversion of water above the dam will reduce the amount of power otherwise available at said dam, and may reduce the amount which would have

been utilized, except at times when the reservoir is spilling, and an additional charge, determined as stated below, will be made on account of any such reduction in energy which would otherwise have been utilized in case water is diverted above the dam. The energy which could have been generated by the water diverted above the dam and which would have been utilized, at times when the reservoir is not spilling will be calculated from the effective head, the quantity of water diverted and the over-all efficiency of the power plant, as determined by the Secretary, whose determination shall be conclusive and binding upon the parties hereto. The additional charge per month for diversion above the dam will be the product of such amount of energy and the rate per kilowatt-hour for firm energy at Boulder Canyon Dam in effect at the time of such diversion. Nevertheless if such diversion during any year (June 1st to May 31st, inclusive) has not reduced the amount of firm energy during such year, for which the United States has contracted, the diversion, to the extent that no reduction in firm energy has been occasioned, shall be computed at the rate for secondary energy then in force and credit given on the ensuing year's power bills of the District for the difference between the amount charged therefor and the amount so determined. The Secretary's determination of such credit shall be conclusive. The reservoir shall be considered as spilling whenever water is being discharged in excess of the amount used for the generation of power, whether such waste occurs over the spillway or otherwise. Energy equivalent to water delivered above the dam, determined as above, for which the firm energy rate is charged, shall be included in the total firm energy available at the dam, defined as four billion, three hundred thirty million (4,330,000,000) kilowatt-hours per year (June 1st to May 31st, inclusive), upon completion of the dam, as announced by the Secretary, and decreasing uniformly thereafter by eight million seven hundred sixty thousand (8,760,000) kilowatt-hours per year, and also included in the District's allotment of firm energy. Nevertheless if it be determined by the Secretary that the rate of decrease above stated is not in accord with actual conditions, the Secretary reserves the right to fix a lesser rate for any year (June 1st to May 31st, inclusive), in advance.

MONTHLY PAYMENTS AND PENALTIES

(11) The District shall pay monthly for all water delivered to it hereunder, or diverted by it from the Colorado River, in accordance with the rate herein in Article ten (10) established. Payments shall be due on the first of the second month immediately succeeding the month in which water is delivered and/or diverted. If such charges are not paid when due, a penalty of one per centum (1%) of the

amount unpaid shall be added thereto, and thereafter an additional penalty of one per centum (1%) of the amount unpaid shall be added on the first day of each calendar month during such delinquency.

REFUSAL OF WATER IN CASE OF DEFAULT

(12) The United States reserves the right to refuse to deliver water to the District in the event of default for a period of more than twelve (12) months in any payment due or to become due the United States under this contract.

INSPECTION BY THE UNITED STATES

(13) The Secretary or his representatives, shall at all times have the right of ingress to and egress from all works of the District for the purpose of inspection, repairs and maintenance of works of the United States, and for all other proper purposes. The Secretary or his representatives shall also have free access at all reasonable times to the books and records of the District relating to the diversion and distribution of water delivered to it hereunder with the right at any time during office hours to make copies of or from the same.

DISPUTES OR DISAGREEMENTS

(14) Disputes or disagreements as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings, the Secretary of the Interior being authorized to act for the United States in such proceedings. Whenever a controversy arises out of this contract, and the parties hereto agree to submit the matter to arbitration the District shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within five (5) days after their first meeting, such arbitrators, not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

RULES AND REGULATIONS

(15) There is reserved to the Secretary the right to prescribe and enforce rules and regulations governing the delivery and diversion of water hereunder. Such rules and regulations may be modified, revised and/or extended from time to time after notice to the District and opportunity for it to be heard, as may be deemed proper, necessary, or desirable by the Secretary to carry out the true intent and

meaning of the law and of this contract, or amendments hereof, or to protect the interests of the United States. The District hereby agrees that in the operation and maintenance of its diversion works and aqueduct, all such rules and regulations will be fully adhered to.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

(16) This contract is made upon the express condition and with the express understanding that all rights hereunder shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes," which Compact was approved in Section 13 (a) of the Boulder Canyon Project Act.

PRIORITY OF CLAIMS OF THE UNITED STATES

(17) Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

CONTINGENT UPON APPROPRIATIONS

(18) This contract is subject to appropriations being made by Congress from year to year of moneys sufficient to do the work provided for herein, and to there being sufficient moneys available in the Colorado River Dam Fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient moneys not being so appropriated nor on account of there not being sufficient moneys in the Colorado River Dam Fund to permit of said allotments. This agreement is also subject to the condition that if Congress fails to appropriate moneys for the commencement of construction work within five (5) years from and after execution hereof, or if for any other reason construction of Boulder Canyon Dam is not commenced within said time and thereafter prosecuted to completion with reasonable diligence, then and in such event either party hereto may terminate its obligations hereunder upon one (1) year's written notice to the other party hereto.

RIGHTS RESERVED UNDER SECTION 3737 REVISED STATUTES

(19) All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

(20) Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

INTEREST IN CONTRACT NOT TRANSFERABLE

(21) No interest in this agreement is transferable, and no sublease shall be made, by the District without the written consent of the Secretary, and any such attempted transfer or sublease shall cause this contract to become subject to annulment, at the option of the United States.

MEMBER OF CONGRESS CLAUSE

(22) No Member of or Delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written. (Executed in quadruplicate original.)

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR, *Secretary of the Interior.*
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By W. P. WHITSETT,
Chairman of the Board of Directors.
[CORPORATE SEAL]

Approved as to form:

W. B. MATHEWS,
General Counsel.

Attest:

S. H. FINLEY,
Secretary of the Board of Directors.

[Acknowledgments and resolution omitted.]

Appendix 1008

**WATER: CALIFORNIA
METROPOLITAN WATER DISTRICT,
SEPTEMBER 28, 1931**

Symbol Ilr-645

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

SUPPLEMENTARY CONTRACT FOR DELIVERY OF WATER

1. THIS SUPPLEMENTARY CONTRACT, made this 28th day of September, nineteen hundred thirty-one, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Ray Lyman Wilbur, Secretary of the Interior, hereinafter styled the Secretary, and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation, hereinafter referred to as the District, organized and existing under and by virtue of the laws of the State of California:

Witnesseth:

EXPLANATORY RECITALS

2. Whereas there was executed on the 24th day of April, 1930, a contract between the UNITED STATES and the District, entitled "Contract for Delivery of Water," which said contract provides, among other things, for the delivery to the District each year from the Boulder Canyon Reservoir up to but not to exceed one million fifty thousand (1,050,000) acre-feet of water; and

3. Whereas, under date of November 5, 1930, the Secretary requested of the Chief of the Division of Water Resources of the State of California a recommendation for the apportionment of the waters of the Colorado River available for use within the State of California,

under the Colorado River Compact, the Boulder Canyon Project Act, and other applicable legislation and regulations, to the end that the same could be included as a uniform clause in each and all of the contracts under the provisions of the Boulder Canyon Project Act between the United States and applicants for water contracts in the State of California; and

4. Whereas, in cooperation with the District and applicants for water in the State of California, the Chief of the Division of Water Resources of the State of California made and filed his recommendations in this regard with the Secretary on August 22, 1931, and it is the desire of the parties hereto that the aforesaid contract of date April 24, 1930, be amended in certain particulars so as to conform to the recommendations of said Division of Water Resources insofar as they are set out in Article six (6) hereof;

5. Now, therefore, in consideration of the mutual covenants contained herein and in the said contract of date April 24, 1930, the parties hereto agree as follows, to wit:

DELIVERY OF WATER BY THE UNITED STATES

6. That Article six (6) of the said contract of April 24, 1930, be and the same is hereby amended so as to read as follows:

"DELIVERY OF WATER BY THE UNITED STATES

"(6) The United States shall, from storage available in the reservoir created by Hoover Dam, deliver to the District each year at a point in the Colorado River immediately above the District's point of diversion (at or in the vicinity of the proposed Parker Dam), so much water as may be necessary to supply the District a total quantity, including all other waters diverted by the District from the Colorado River, in the amounts and with priorities in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, as follows (subject to the availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act):

"The waters of the Colorado River available for use within the State of California under the Colorado River Compact and the Boulder Canyon Project Act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

"SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said District as it now exists and upon lands between said District and the Colorado River, aggregating (within and without said District) a gross area of 104,500 acres, such waters as may be required by said lands.

"SEC. 2. A second priority to Yuma Project of United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

"SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in Sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in Sections 1, 2 and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

"SEC. 4. A fourth priority to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

"SEC. 5. A fifth priority (a) to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum, and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation.

"SEC. 8. So far as the rights of the allottees named above are concerned, The Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said District and/or said City (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reduced diversions by said District and/or said City; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other states without distinction in priority, and to determine the correlative relations between said District and/or said City and such users resulting therefrom.

"SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to

the individual credit of said City and/or said County (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said City and/or said County; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other states without distinction in priority, and to determine the correlative relations between the said City and/or said County and such users resulting therefrom.

"SEC. 10. In no event shall the amounts allotted in this agreement to The Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusion of a supply for both said District and said City, and either or both may use said apportionments as may be agreed by and between said District and said City.

"SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said City and said County, and either or both may use said apportionments as may be agreed by and between said City and said County.

"SEC. 12. The priorities hereinbefore set forth shall be in nowise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties.

"The Secretary reserves the right to, and the District agrees that he may, contract with any of the allottees above named in accordance with the above stated recommendation, or, in the event that such recommendation as to Palo Verde Irrigation District is superseded by an agreement between all the above allottees or by a final judicial determination, to contract with the Palo Verde Irrigation District in accordance with such agreement or determination; provided, that priorities numbered fourth and fifth shall not thereby be disturbed.

"Said water shall be delivered continuously as far as reasonable diligence will permit, but the United States shall not be obligated to deliver water to the District when for any reason such delivery would interfere with the use of Hoover Dam and Boulder Canyon Reservoir for river regulation, improvement of navigation, flood control, and/or satisfaction of perfected rights, in or to the waters of the Colorado River, or its tributaries, in pursuance of Article VIII of the Colorado River Compact, and this contract is made upon the express condition and with the express covenant that the right of the District to waters of the Colorado River, or its tributaries, is subject to and controlled by the Colorado River Compact. The United States reserves the right to discontinue or temporarily reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacement or installation of equipment and/or machinery at Hoover Dam, but so far as feasible the United States will give the District reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents and employees shall not be liable for damages when, for any reason whatsoever, suspensions or reductions in delivery of water occur. This contract is for permanent service, but is made subject to the express-

covenant and condition that in the event water for the District is not taken or diverted by the District hereunder for District purposes within a period of ten (10) years from and after completion of Hoover Dam as announced by the Secretary, it may in such event, upon the written order of the Secretary, and after hearing become null and void and of no effect."

CONTRACT OF APRIL 24, 1930, EFFECTIVE EXCEPT AS MODIFIED

7. Except as expressly modified hereby the aforesaid contract of date April 24, 1930, shall remain in full force and effect.

MEMBER OF CONGRESS CLAUSE

8. No member of or Delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof, the parties hereto have caused this supplementary contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR,
Secretary of the Interior.

Attest:

NORTHCUTT ELY,
[CORPORATE SEAL] THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By W. P. WHITSETT,
Chairman of the Board of Directors.

Attest:

S. H. FINLEY,
Secretary of the Board of Directors.

Approved as to form:

JAMES H. HOWARD,
General Counsel, The Metropolitan Water District of Southern California.

[Acknowledgments and resolution omitted.]

Appendix 1009

WATER: CALIFORNIA

SAN DIEGO, FEBRUARY 15, 1933

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

CONTRACT FOR DELIVERY OF WATER

(1) THIS CONTRACT, made this 15th day of February, nineteen hundred thirty-three, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the reclamation law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Ray Lyman Wilbur, Secretary of the Interior, hereinafter styled the Secretary, and THE CITY OF SAN DIEGO, a municipal corporation of the State of California, hereinafter styled the City, organized under a freeholders' charter;

Witnesseth:

EXPLANATORY RECITALS

(2) Whereas, for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters for reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, subject to the terms of the Colorado River Compact, is authorized to construct, operate and maintain a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water, and a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam, or other suitable diversion dam with the Imperial and Coachella Valleys in California; and

(3) Whereas the United States contemplates entering into an agreement with Imperial Irrigation District, an irrigation district organized and existing under and by virtue of the laws of the State of California,

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providing, among other things, for the construction of a main canal and appurtenant structures, authorized as aforesaid, and reserving under conditions to be therein stated, the right to increase the capacity of said works and to contract for such increased capacity with other agencies for the delivery of water for use within the United States; and

(4) Whereas the United States and the City contemplate hereafter entering into a contract by which provision will be made for increasing, for the City's benefit and at its cost, the capacity of the main canal and appurtenant works to be constructed for Imperial Irrigation District, as aforesaid; and

(5) Whereas the City is desirous of entering into a contract for the delivery to it of water from Boulder Canyon Reservoir;

(6) Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF WATER BY UNITED STATES

(7) The United States shall, from storage available in the reservoir created by Hoover Dam, deliver to the City each year at a point in the Colorado River immediately above Imperial Dam, so much water as may be necessary to supply the City a total quantity, including all other waters diverted by the City from the Colorado River, in the amounts and with priorities in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, as follows (subject to the availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act):

"The waters of the Colorado River available for use within the State of California under the Colorado River Compact and the Boulder Canyon Project Act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

"SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said District as it now exists and upon lands between said District and the Colorado River, aggregating (within and without said District) a gross area of 104,500 acres, such waters as may be required by said lands.

"SEC. 2. A second priority to Yuma Project of United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

"SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in

Sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in Sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

"SEC. 4. A fourth priority to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves, and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

"SEC. 5. A fifth priority, (a) to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation.

"SEC. 8. So far as the rights of the allottees named above are concerned, The Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said District and/or said City (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reduced diversions by said District and/or said City; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said District and/or said City and such users resulting therefrom.

"SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said City and/or said County (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said City and/or said County; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States

without distinction in priority, and to determine the correlative relations between the said City and/or said County and such users resulting therefrom.

"SEC. 10. In no event shall the amounts allotted in this agreement to The Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusion of a supply for both said District and said City, and either or both may use said apportionments as may be agreed by and between said District and said City.

"SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said City and said County, and either or both may use said apportionments as may be agreed by and between said City and said County.

"SEC. 12. The priorities hereinbefore set forth shall be in nowise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties.

"The Secretary reserves the right to, and the District agrees that he may, contract with any of the allottees above named in accordance with the above-stated recommendation, or, in the event that such recommendation as to Palo Verde Irrigation District is superseded by an agreement between all the above allottees or by a final judicial determination, to contract with the Palo Verde Irrigation District in accordance with such agreement or determination; provided, that priorities numbered fourth and fifth shall not thereby be disturbed."

Said water shall be delivered continuously as far as reasonable diligence will permit, but the United States shall not be obligated to deliver water to the City when for any reason such delivery would interfere with the use of Hoover Dam and Boulder Canyon Reservoir for river regulation, improvement of navigation, flood control, and/or satisfaction of perfected rights, in or to the waters of the Colorado River, or its tributaries, in pursuance of Article VIII of the Colorado River Compact, and this contract is made upon the express condition and with the express covenant that the right of the City to waters of the Colorado River, or its tributaries, is subject to and controlled by the Colorado River Compact. The United States reserves the right to discontinue or temporarily reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacements or installation of equipment and/or machinery at Hoover Dam, but so far as feasible the United States will give the City reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents and employees shall not be liable for damages when, for any reason whatsoever, suspensions or reductions in delivery of water occur.

Deliveries hereunder shall be in satisfaction of the allocation to the City and the County of San Diego, and shall be used within the County as the City and the County may agree, or as the State of California may allocate in the event of disagreement between the City and the County.

This contract is for permanent service, but is made subject to the express covenant and condition that in event water is not taken or diverted by the City hereunder within a period of ten (10) years from and after completion of Hoover Dam as announced by the Secretary, it may in such event, upon the written order of the Secretary, and after hearing, become null and void and of no effect.

RECEIPT OF WATER BY CITY

(8) The City shall receive the water to be delivered to it by the United States under the terms hereof at the point of delivery above stated, and shall perform all acts required by law or custom in order to maintain its control over such water and to secure and maintain its lawful and proper diversion from the Colorado River.

MEASUREMENT OF WATER

(9) The water to be delivered hereunder shall be measured by such measuring and controlling devices or such automatic gauges or both, as shall be satisfactory to the Secretary. Said measuring and controlling devices, or automatic gauges, shall be furnished, installed and maintained by and at the expense of the City, but they shall be and remain at all times under the complete control of the United States, whose authorized representatives may at all times have access to them over the lands and rights-of-way of the City.

RECORD OF WATER DIVERTED

(10) The City shall make full and complete written monthly reports as directed by the Secretary, on forms to be supplied by the United States, of all water diverted from the Colorado River. Such reports shall be made by the fifth day of the month immediately succeeding the month in which the water is diverted, and the records and data from which such reports are made shall be accessible to the United States on demand of the Secretary.

CHARGE FOR DELIVERY OF WATER

(11) A charge of twenty-five cents (0.25) per acre-foot shall be made for water delivered to the City hereunder during the Hoover Dam cost repayment period.

MONTHLY PAYMENTS AND PENALTIES

(12) The City shall pay monthly for all water delivered to it hereunder, or diverted by it from the Colorado River, in accordance with the rate herein in Article eleven (11) established. Payments shall

be due on the first of the second month immediately succeeding the month in which water is delivered and/or diverted. If such charges are not paid when due, a penalty of one per centum (1%) of the amount unpaid shall be added thereto, and thereafter an additional penalty of one per centum (1%) of the amount unpaid shall be added on the first day of each calendar month during such delinquency.

REFUSAL OF WATER IN CASE OF DEFAULT

(13) The United States reserves the right to refuse to deliver water to the City in the event of default for a period of more than twelve (12) months in any payment due or to become due the United States under this contract.

INSPECTION BY THE UNITED STATES

(14) The Secretary or his representatives, shall at all times have the right of ingress to and egress from all works of the City for the purpose of inspection, repairs, and maintenance of works of the United States, and for all other proper purposes. The Secretary or his representatives shall also have free access at all reasonable times to the books and records of the City relating to the diversion and distribution of water delivered to it hereunder with the right at any time during office hours to make copies of or from the same.

DISPUTES OR DISAGREEMENTS

(15) Disputes or disagreements as to the interpretation or performance of the provisions of this contract shall be determined either by arbitration or court proceedings, the Secretary of the Interior being authorized to act for the United States in such proceedings. Whenever a controversy arises out of this contract, and the parties hereto agree to submit the matter to arbitration, the City shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within five (5) days after their first meeting, such arbitrators, not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

RULES AND REGULATIONS

(16) There is reserved to the Secretary the right to prescribe and enforce rules and regulations governing the delivery and diversion of water hereunder. Such rules and regulations may be modified, revised and/or extended from time to time after notice to the City and

opportunity for it to be heard, as may be deemed proper, necessary, or desirable by the Secretary to carry out the true intent and meaning of the law and of this contract, or amendments hereof, or to protect the interests of the United States. The City hereby agrees that in the operation and maintenance of its diversion works and aqueduct, all such rules and regulations will be fully adhered to.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

(17) This contract is made upon the express condition and with the express understanding that all rights hereunder shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes", which Compact was approved in Section 13 (a) of the Boulder Canyon Project Act.

PRIORITY OF CLAIMS OF THE UNITED STATES

(18) Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

CONTINGENT UPON APPROPRIATIONS

(19) This contract is subject to appropriations being made by Congress from year to year of moneys sufficient to do the work provided for herein, and to there being sufficient moneys available in the Colorado River Dam Fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient moneys not being so appropriated nor on account of there not being sufficient moneys in the Colorado River Dam Fund to permit of said allotments. This agreement is also subject to the condition that if for any reason construction of Hoover Dam is not prosecuted to completion with reasonable diligence, then and in such event either party hereto may terminate its obligations hereunder upon one (1) year's written notice to the other party hereto.

RIGHTS RESERVED UNDER SECTION 3737 REVISED STATUTES

(20) All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

(21) Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

INTEREST IN CONTRACT NOT TRANSFERABLE

(22) No interest in this agreement is transferable, and no sublease shall be made, by the City without the written consent of the Secretary, and any such attempted transfer or sublease shall cause this contract to become subject to annulment, at the option of the United States.

MEMBER OF CONGRESS CLAUSE

(23) No Member of or Delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR (Signature),
Secretary of the Interior.

Attest:

NORTHCUTT ELY (Signature).
RICHARD J. COFFEY (Signature).
THE CITY OF SAN DIEGO,
By JOHN FORWARD, JR. (Signature),
Mayor.

Approved as to form:

C. L. BYERS (Signature),
City Attorney.

Attest: [SEAL]

ALLEN H. WRIGHT (Signature),
City Clerk.

As evidence of its approval of the foregoing contract between the United States and the City, the County of San Diego has caused the signature of the Chairman of its Board of Supervisors to be affixed thereto.

THE BOARD OF SUPERVISORS OF
SAN DIEGO COUNTY,
By TOM HURLEY (Signature),
Chairman.

Attest:

J. B. McLEES (Signature),
County Clerk.

[SEAL]

Approved as to form, February 7, 1933:

RAY LYMAN WILBUR (Signature),
Secretary of the Interior.

Appendix 1010

**WATER: CALIFORNIA
SAN DIEGO, OCTOBER 17, 1945**

NOy-13300

[CONTRACT]

THIS NEGOTIATED CONTRACT made this 17th day of October, 1945, between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented by the CHIEF OF THE BUREAU OF YARDS AND DOCKS, NAVY DEPARTMENT (hereinafter called the "Contracting Officer") and the CITY OF SAN DIEGO (hereinafter called the "City"), a municipal corporation organized and existing under and by virtue of the laws of the State of California,

Witnesseth:

Whereas it is recognized that the deficiency of the water supply in San Diego County, California, has become of emergency importance to the Government, owing to the large Naval, other military, Federal housing, and other Government installations in the area; and

Whereas, as a result of extended studies by the interested parties, a joint program has been formulated as hereinafter provided which it is anticipated will effectively eliminate such water-supply deficiency; and

Whereas the Contracting Officer has determined that the accomplishment of the provisions of this contract, including the furnishing by the Government of extensive facilities on the terms provided, is necessary in the interest of the national defense;

Now, therefore, it is mutually agreed as follows:

**ARTICLE 1. FACILITIES TO BE FURNISHED BY GOVERNMENT AND LEASE
THEREOF**

(a) The Government, at its own expense, shall diligently prosecute to completion a steel and concrete Aqueduct running from a connection with the Colorado River aqueduct of the Metropolitan Water District of Southern California near the west portal of San Jacinto tunnel in Riverside County, to San Vicente Reservoir, in San Diego County, which undertaken project is hereinafter referred to in its entirety as the "Aqueduct," and includes the entire structure and appurtenances thereto together with those rights in real property acquired by the

A523

Government for its construction or operation. The Aqueduct shall be constructed in accordance with the presently existing Government specifications therefor (such specifications being generally identified as Bureau of Yards and Docks Specifications numbered 16713, 16781, 17270, 16954, 17383, 16998, 16254, and likewise the specifications contained in Bureau of Supplies and Accounts Contract N5sy 3213, and also including such additional specifications as the Contracting Officer may deem desirable for the completion of the work), which specifications are by this reference made a part hereof. The Government may make such changes in such specifications as it may deem proper, provided, however, that no fundamental changes therein will be made without first consulting with the City. The estimated cost of the Aqueduct is \$14,500,000 and the estimated completion date is May 1947, but neither party guarantees such amount or date nor sponsors either of them as a material representation hereunder.

(b) Upon completion of the Aqueduct as determined by the Contracting Officer, the Government shall deliver the possession thereof to the City for use in its water system and upon the following lease basis:

(i) After the date of delivery of possession to it the City shall thereafter repair, maintain, and operate such Aqueduct and shall be responsible for the safekeeping thereof regardless of the cause of loss or damage thereto and for all charges and assessments of whatsoever type or nature thereafter accruing against the same, it being intended that after the date of such delivery of possession under this lease the Government shall be without financial obligation or liability with respect to such property and that such property shall be maintained intact and free of encumbrance. The City shall hold the Government, its officers, agents, and employees, harmless from any claims or liabilities arising out of the City's operations or other activities under this lease and shall not permit of the attachment of any encumbrance whatsoever to such Government property. The Government shall have access to the premises leased hereunder at all reasonable times for inspection or other proper purposes. Should the City fail in any of its undertakings under this paragraph, the Government, at its option and without prejudice to such other rights as it may have, may enter the premises and remedy such default or any part thereof and charge the actual cost thereof to the City plus 15% to cover overhead and general expense, which total amount together with interest at the rate of 4% per annum from the date of expenditure to the date of payment shall be paid to the Government by the City on June 1 immediately succeeding the date when the Government completes or discontinues the remedying of such default or part thereof.

(ii) Title to the Aqueduct shall remain in, and title to all replacements and improvements thereto made during the life of this lease shall vest in, the Government.

(iii) The annual rental under this lease shall be \$500,000. The lease period shall commence to run from the date the Government delivers possession of the Aqueduct to the City. Such annual payment shall be divided into quarterly payments of \$125,000 each, the first of such payments to be made within three months of said date of delivery of the Aqueduct and the remainder quarterly thereafter.

(iv) This lease shall continue until such time as the City has paid to the Government in rentals the full amount of the true cost to the Government, as defined in Article 3, of the Aqueduct. During the term of this lease the City shall have the right and option to purchase said Aqueduct from the Government upon the terms and conditions contained in either of the following subparagraphs (1) and (2), the option in each being deemed independent of the option in the other:

(1) At intervals of five years the City may in writing request the Contracting Officer to name and fix a purchase price of said Aqueduct; and thereafter the City may purchase said Aqueduct for the price so named, and thus terminate the lease; provided that if the City is unable to pay the price so fixed out of the annual revenues of said City for the year in which said option is exercised, then said purchase by said City must be first authorized by a vote of two-thirds of the qualified electors of said City voting at an election held for that purpose. The ratification of said purchase shall be authorized by said electors within one year following the notice by said City that it desires to exercise the option. This right or option on the part of the City to purchase said Aqueduct shall inure to the benefit of any assignee of the City under an assignment pursuant to the provisions of Article 5.

(2) Upon receipt in writing from said City the Contracting Officer shall furnish to said City in writing the true cost to the Government of said Aqueduct. Thereupon the City shall have the right and option to purchase said Aqueduct by paying to said Government said true cost of said Aqueduct, provided that the purchase has been first authorized by a vote of two-thirds of the qualified electors of said City voting at an election held for that purpose, if the City is unable to pay said price out of the annual revenue for said year. In event that said purchase is so authorized by said electors at said election the Government shall convey to said

City all of its right, title, and interest in and to said Aqueduct and appurtenances, upon payment to said Government of the full and true cost of said Aqueduct, minus any rentals theretofore paid by said City under the terms and provisions of this lease-contract.

(v) Notwithstanding any of the foregoing provisions, this lease shall not continue for a period of more than thirty-two (32) years from date of delivery to the City. Should this lease terminate by reason of the expiration of such period, except such termination as may be occasioned by the City exercising the option to purchase, as hereinabove provided, then the Aqueduct, together with all replacements and improvements, shall be redelivered to the Government, free of encumbrance, and in as good condition as when delivered to the City, reasonable wear and tear excepted.

ARTICLE 2. FACILITIES AND SERVICE TO BE FURNISHED BY CITY

(a) The City, at its own expense, shall diligently prosecute to completion that water treatment plant and additions to the water transportation system and connections to the distribution system as contemplated by the City Bond Issue approved at the election held in said City on the 17th day of April 1945.

(b) The City shall diligently pursue and the Council of said City shall forthwith take such legal steps as may be necessary and authorized by law to secure an adequate supply of water from the Metropolitan Water District of Southern California to be supplied through said Aqueduct.

(c) The City shall exert every reasonable effort to supply all Government agencies and establishments within the area with an adequate supply of fresh, clear, and potable water at applicable and nondiscriminatory rates, provided, however, that this agreement shall in no way estop the Government from taking appropriate action with respect to any rates or service which it may deem unreasonable or otherwise improper. This stated obligation of service shall not be limited to any particular source of water.

ARTICLE 3. TRUE COST TO GOVERNMENT OF AQUEDUCT

(a) The true cost to the Government of the Aqueduct is herein defined as the sum of (i) the cost of acquisition of all rights in real property acquired for either the construction or operation of the Aqueduct, including incidental costs such as appraisals, surveys, maps, title evidence, court costs, and the like, (ii) the cost of construction contracts utilized in the accomplishment of the Aqueduct plus the reasonable value of Government-furnished material and equipment furnished with respect thereto, and (iii) those costs incurred in the

field for Government or other employees (exclusive of naval officers) and equipment in connection with the work on the Aqueduct (excluding that required in the preparation of presently existing specifications) which the Contracting Officer finds to be in excess of those costs which would have been incident to the ordinary maintenance of Government establishments in the absence of such work.

(b) It is anticipated that the City and the Contracting Officer will be able to agree upon all items of such true cost. To the extent agreement is reached, such agreement shall, in the absence of fraud, supersede for the items covered the application of the above-stated definition of true cost. To the extent that agreement is not reached, the determination of whether disputed items are a part of true cost within said definition shall be deemed a question of fact within the meaning of Article 9 hereof.

ARTICLE 4. RIGHT OF REENTRY UPON DEFAULT

Should the City, after the delivery to it of possession of the Aqueduct as hereinabove provided, default or continue in default in any of the rental payments to be made by it to the Government or in any of its other undertakings hereunder, whether included in the lease arrangement or otherwise, and remain in such default after sixty (60) days from written notice to it from the Contracting Officer to remedy such default, then the Government at its option and without prejudice to such other rights as it may have, may reenter and take exclusive possession of such Aqueduct, with or without process of law, and free and clear of any obligation in respect thereto to the City or anyone claiming through the City. Rental payments made by the City prior to the date of such reentry shall be retained by the Government and any rental payments accrued but unpaid on such date (and for this purpose rent shall be deemed to accrue pro rata from date to day) shall be forthwith paid to the Government, all such payments being deemed to be compensation for the use of the Aqueduct during the period of the City's possession.

ARTICLE 5. ASSIGNMENT

Neither this contract, nor any interest therein, nor any claim arising thereunder, shall be transferred by the City to any party or parties without the written approval thereto of the Government; provided, however, that the Government will consent to the assignment of the City's rights and interests herein to either the Metropolitan Water District of Southern California and/or the San Diego County Water Authority, upon such terms and conditions as may then be deemed reasonable by the Contracting Officer for the purpose of preserving the intent of this agreement and the protection of the Government's interests therein.

ARTICLE 6. FAILURE TO INSIST ON COMPLIANCE—REMEDIES NOT
EXCLUSIVE

Failure of the Government in any one or more instances to insist upon strict performance of any of the terms of this contract or to exercise any provided right or option herein conferred, shall not be construed as a waiver or relinquishment for the future of any such terms, options, or rights. Nothing contained in this contract shall be construed as in any manner abridging, limiting, or depriving the United States of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

ARTICLE 7. COVENANT AGAINST CONTINGENT FEES

The City warrants that it has not employed any person to solicit or secure this contract upon any agreement for a commission, percentage, brokerage, or contingent fee. Breach of this warranty shall give the Government the right to annul the contract, or, in its discretion, to deduct from the contract price or consideration the amount of such commission, percentage, brokerage, or contingent fees.

ARTICLE 8. OFFICIALS NOT TO BENEFIT

No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 9. DISPUTES

Except as otherwise specifically provided in this contract, all disputes concerning questions of fact arising under this contract shall be decided by the Contracting Officer, subject to written appeal by the City within 30 days to the Secretary of the Navy or his duly authorized representative, whose decision shall be final and conclusive. Pending decision, the City shall diligently proceed with performance.

ARTICLE 10. NONDISCRIMINATION IN EMPLOYMENT

The City in performing work under this contract shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The City shall include an identical provision in all of its subcontracts. For the purposes of this article, subcontracts shall include all purchase orders and agreements to perform all or any part of the work, or to make or furnish

any article required for the performance of this contract, except purchase orders or agreements for the furnishing of standard commercial articles or raw materials.

ARTICLE 11. LABOR PROVISIONS

In the event the City accomplishes any of its undertakings hereunder by private contract, such contract or contracts shall contain appropriate provisions to assure compliance with the following acts to the extent the same are applicable:

Davis Bacon Act (40 U. S. C. 276 a as amended);
 Copeland Act (40 U. S. C. 276 b and 276 c); and
 The Eight Hour Law (40 U. S. C. 321, 324-6, as in part modified by Section 303 of Pub. Act. No. 781, 76th Congress, approved Sept. 9, 1940).

ARTICLE 12. CONTRACTING OFFICER

The designation "Contracting Officer" means the Chief of the Bureau of Yards and Docks or any one authorized to act for him.

This negotiated contract is made pursuant to the provisions of the First War Powers Act, 1941, the Second War Powers Act, 1942, and the Act of July 2, 1940 (54 Stat. 712).

In witness whereof the parties hereto have executed this contract the day and year first above written.

UNITED STATES OF AMERICA,

By /s/ B. MOREELL,

Chief of the Bureau of Yards and Docks, Navy Department.

THE CITY OF SAN DIEGO,

By /s/ F. A. RHODES,

City Manager.

Witnesses:

/s/ KIRBY SMITH.

/s/ FRED A. HEILBRON.

I hereby approve the form and legality of the foregoing Contract, this 17th day of October 1945.

/s/ J. F. DuPAUL,

City Attorney.

NAVDOCKS

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Appendix 1011

**WATER: CALIFORNIA
SAN DIEGO, SEPTEMBER 23, 1946**

NOy-13300

SUPPLEMENTAL AGREEMENT NO. 1

**BETWEEN UNITED STATES OF AMERICA, THE CITY OF SAN DIEGO AND
SAN DIEGO COUNTY WATER AUTHORITY**

THIS SUPPLEMENTAL AGREEMENT No. 1 entered into as of the 23d day of September 1946, between the UNITED STATES OF AMERICA, hereinafter called the "Government," represented by the Chief of the Bureau of Yards and Docks, Navy Department; THE CITY OF SAN DIEGO, a municipal corporation, organized and existing under and by virtue of the laws of the State of California, hereinafter called the "City"; and the SAN DIEGO COUNTY WATER AUTHORITY, a public corporation, organized and existing under and by virtue of the laws of the State of California, hereinafter called the "Authority",

Witnesseth:

Whereas The Government and the City, under date of October 17, 1945, entered into Contract NOy-13300 (hereinafter called the "Contract") wherein the Government undertook to construct, and the City undertook to lease, operate and maintain, an aqueduct from a connection with the Colorado River Aqueduct of the Metropolitan Water District of Southern California, near the West Portal of the San Jacinto Tunnel in Riverside County, to San Vicente Reservoir in San Diego County, and wherein certain options to purchase said aqueduct are granted to City; and

Whereas there is now pending between the City and the Government a proposal for the amendment of the Contract to provide for the retention of title by The Metropolitan Water District of Southern California to certain connection facilities; and

Whereas as a step in the annexation of the corporate area of the Authority (of which the corporate area of the City is a part) to the Metropolitan Water District of Southern California, as a means of securing a supply of water for the Authority, it is necessary or desirable to transfer the said Contract from the City to the Authority; and

Whereas the legal characteristics of the Authority differ in some particulars from the legal characteristics of the City, and some of the

obligations of the City under the said contract cannot be performed physically by the Authority, but the City, as a part of the Authority, will continue to be benefited by the said Contract;

Now, therefore, in consideration of the premises, it is agreed as follows:

1. Contingent upon the annexation of the Authority to the Metropolitan Water District of Southern California, the said Contract, subject to the following qualifications and amendments, is hereby assigned by the City to the Authority and the Authority hereby accepts and assumes the same and the Government accepts the Authority as Obligor in said Contract in lieu of the City;

Provided that this agreement shall be of no force or effect until and unless:

(a) A majority of the qualified electors of the City voting on the proposition shall authorize the transfer and assignment to the District by the City of its rights and obligations under the Water Delivery Contract between the Government and the City, dated February 15, 1933, relating to the waters of the Colorado River;

(b) A majority of the qualified electors of the City voting on the proposition shall authorize the transfer and assignment to the Authority of the City's rights and obligations under the Contract dated October 17, 1945 (NOy-13300) granting the City a lease of the aqueduct being constructed by the United States Navy from San Jacinto Tunnel to San Vicente Reservoir, except the City's obligation under Article 2 (a) of said Contract to construct a water treatment plant and other works as contemplated by the City bond issue approved April 17, 1945, and the obligation under Article 2 (c) of said Contract that the City supply all Government agencies within the area with an adequate supply of water at nondiscriminatory rates, and on condition that if the Authority shall cease to be a portion of the corporate area of the Metropolitan Water District of Southern California, the said Lease-Contract shall revert to the City, subject to all modifications, defaults, or acts of the Authority, affecting the said Lease-Contract;

(c) A majority of the qualified electors of the Authority voting on the proposition shall authorize the acceptance of the rights and the assumption by the Authority of the obligations transferred to the Authority by the assignment of the Contract dated October 17, 1945 (NOy-13300) in accordance with this agreement;

(d) The corporate area of the Authority shall, prior to December 31, 1946, completely be annexed to and become a portion of the corporate area of The Metropolitan Water District of Southern California; and

Provided further, that the Authority shall be bound by and shall take subject to all modifications, defaults, and acts affecting the Contract entered into, suffered or committed by the City before this agreement becomes of force and effect.

2. Article 1, subdivision (b), paragraph iv, subdivisions (1) and (2) are hereby amended to read as follows:

“(1) At intervals of five years the City may in writing request the Contracting Officer to name and fix a purchase price of said Aqueduct, and thereafter the City may purchase said Aqueduct for the price so named, and thus terminate the lease. This right or option on the part of the City to purchase said Aqueduct shall inure to the benefit of any assignee of the City under an assignment pursuant to the provisions of Article 5.

“(2) Upon request in writing from said City the Contracting Officer shall furnish to said City in writing the true cost to the Government of said Aqueduct. Thereupon the City shall have the right and option to purchase said Aqueduct by paying to said Government said true cost of said Aqueduct, and upon payment to the said Government of the full and true cost of said Aqueduct, minus any rentals therefor paid by the said City under the terms and provisions of this Lease Contract, the Government shall convey to said City all of its right, title, and interest in and to the said Aqueduct and its appurtenances. This right or option on the part of the City to purchase said Aqueduct shall inure to the benefit of any assignee of the City under an assignment pursuant to the provisions of Article 5.”

3. Said Contract is hereby amended by adding to Article 1, subdivision (b), paragraph iv, an additional subdivision to be designated “(3)”, and to read as follows:

“(3) Upon the completion of payment of rentals by the City or its assignee to the Government in an amount equal to the true cost of the said Aqueduct as defined in Article 3 of this Contract, the Government shall convey to the City, or its assignee, all of its right, title, and interest, in and to the said Aqueduct and its appurtenances.”

4. The obligations of subdivisions (a) and (c) of Article 2 shall remain with, and be performed by, the City.

5. In addition to the reasons specified heretofore, this supplemental contract shall be void and of no force or effect in the event the corporate area of the Authority shall cease to be a portion of the corporate area of The Metropolitan Water District of Southern California, in which event said Contract shall be revived and reinstated and shall become severally operative with the City as party thereto;

Provided, however, that the City shall receive credit for any and all payments made to the Government while this Agreement is in full force and effect, and that the City shall be bound by and shall succeed subject to all modifications, defaults, or acts affecting the Contract theretofore entered into, suffered or committed by the Authority.

6. Except as herein specifically provided, said Contract, as so amended and assigned, shall be and remain in full force and effect.

A534

APPENDIX 1011

In witness whereof, the parties hereto have executed this instrument the day and year first above written.

THE UNITED STATES OF AMERICA,
By R. H. MEADE (CEC), USN
(For Chief of the Bureau of Yards and Docks,
Navy Department.)
THE CITY OF SAN DIEGO,
By F. A. RHODES, *City Manager*.

Attest:

FRED W. SICK, *City Clerk*.
SAN DIEGO COUNTY WATER AUTHORITY,
By J. BURKHOLDER, *General Manager*.

Attest:

ELEANOR LONGFELLOW, *Executive Secretary*.

I hereby approve the form and legality of the within Supplemental Agreement this 20th day of September 1946.

J. F. DUPAUL, *City Attorney*.

Appendix 1012

WATER: CALIFORNIA

**METROPOLITAN WATER DISTRICT AND SAN
DIEGO COUNTY WATER AUTHORITY,
OCTOBER 4, 1946**

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ARIZONA-CALIFORNIA-NEVADA

CONTRACT MERGING RIGHTS OF THE CITY OF SAN DIEGO AND THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA UNDER CONTRACTS WITH THE UNITED STATES DATED FEBRUARY 15, 1933, AND APRIL 24, 1930 (AMENDED SEPTEMBER 28, 1931), RESPECTIVELY

1. THIS CONTRACT, made this 4th day of October 1946, pursuant to the Act of Congress, approved June 17, 1902 (32 Stat. 388), and Acts amendatory thereof or supplementary thereto, all of which Acts are commonly known and referred to as the Reclamation Law and particularly pursuant to the Act of Congress, approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, between THE UNITED STATES OF AMERICA (hereinafter referred to as the "United States"), acting for this purpose by J. A. Krug, Secretary of the Interior (hereinafter referred to as the "Secretary"), THE CITY OF SAN DIEGO, a municipal corporation (hereinafter referred to as "San Diego"), the SAN DIEGO COUNTY WATER AUTHORITY, a municipal corporation (hereinafter referred to as the "Authority"), and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation (hereinafter referred to as the "District");

Witnesseth that:

2. Whereas, under date of August 18, 1931, the Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, The Metropolitan Water District of Southern California, City of Los Angeles, The City of San Diego and County of San Diego entered into an agreement fixing their respective priorities in waters of the Colorado River available for use in California under the Colorado River Compact and the Boulder Canyon Project Act,

which said contract is hereinafter referred to as the "Seven-Party Priority Agreement"; and

3. Whereas, under date of April 24, 1930, the United States and the District entered into a water delivery contract, which contract, as amended by supplementary contract between said parties dated September 28, 1931, provides for delivery by the United States to the District of waters of the Colorado River in accordance with said schedule of priorities as fixed in the Seven-Party Priority Agreement; said Contract, as amended by said Supplementary contract of September 28, 1931, being herein referred to as the "District's Water Delivery Contract"; and

4. Whereas, under date of February 15, 1933, the United States and San Diego entered into a water delivery contract approved by the County of San Diego, which contract provides for the delivery by the United States to San Diego of waters of the Colorado River, in accordance with said schedule of priorities as fixed in the Seven-Party Priority Agreement, said contract being for the benefit of San Diego and the County of San Diego, and being hereinafter referred to as the "San Diego Water Delivery Contract"; and

5. Whereas the priorities so agreed upon, and set out in said Seven-Party Priority Agreement and said water delivery contracts, are as follows, to-wit:

"SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said district as it now exists and upon lands between said district and the Colorado River, aggregating (within and without said district) a gross area of 104,500 acres, such waters as may be required by said lands.

"SEC. 2. A second priority to Yuma Project of United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

"SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

"SEC. 4. A fourth priority to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

"SEC. 5. A fifth priority (a) to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use by themselves and/or others, on the Coastal Plain

of Southern California, 550,000 acre-feet of water per annum and (b) to The City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the 'Lower Palo Verde Mesa,' adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

"SEC. 7. A seventh priority of all remaining water available for use within California for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation";

and

6. Whereas the Authority was created pursuant to the provisions of the "County Water Authority Act" of the State of California (Stats. 1943, p. 2090) and includes the corporate area of San Diego, together with other portions of the County of San Diego, and was created to the end that San Diego and other parts of the said county may participate in the benefit of Colorado River water as contemplated by the terms of said contract between the United States and San Diego, dated February 15, 1933; and

7. Whereas it is provided in the said County Water Authority Act that each public agency whose corporate area shall be a part of the Authority (San Diego, by definition, being considered a public agency for the purposes of said Act) shall have a preferential right to purchase from the Authority a percentage of the water supply of the Authority, determined as therein set out; and

8. Whereas the act under which the District was incorporated provides that each city whose corporate area shall be a part thereof (the Authority, by definition, being considered a city for the purposes of said act) shall have a preferential right to purchase from the District a percentage of the water supply of the District, determined as therein set out; and

9. Whereas it is proposed to submit to the electors of the Authority the proposition of annexing the corporate area of the Authority to the District, and, in the event that such corporate area of the Authority shall be so annexed to and become a part of the District, it would be against the public interest that any part of the enlarged District should participate in the water supply administered by the District, in any manner or under any schedule of priority differing from that generally applicable in other parts of the District, and the public interest will be best served, in the event of such annexation, by merging the contract, rights and certain priorities as herein pro-

vided, and, so far as the parties hereto are concerned, treating such priorities as a single priority, to be vested in, and administered by, the District; and

10. Whereas in the event of annexation of the corporate area of the Authority to the District, under the terms of the Metropolitan Water District Act, the Authority will have a right in the aggregate water supply of the District, and San Diego, whose corporate area is a part of the Authority, under the terms of the County Water Authority Act, will have a right in the water available to the Authority; and

11. Whereas the right to participate in the use of the waters of the Colorado River, which San Diego will enjoy by reason of its corporate area being a part of the Authority and the corporate area of the Authority being a part of the District, will be of great value to San Diego, and the interests of San Diego will be protected and advanced by the execution of this contract;

Now, therefore, in consideration of the premises, it is agreed that:

12. Under the conditions set out in Article 14 hereof and not otherwise, the right to storage and delivery of Colorado River water now vested in San Diego for the benefit of San Diego and the County of San Diego and evidenced by said San Diego Water Delivery Contract, shall be and is hereby assigned and transferred to and vested in the District and shall be and is hereby merged with and added to the rights of the District under the District's Water Delivery Contract, and the rights and obligations now vested in and imposed on San Diego as evidenced by said San Diego Water Delivery Contract shall be and are hereby accepted and assumed by said District and such rights and obligations shall be administered and observed by the District and considered a part of the water supply and a part of the rights and obligations of the District for all purposes and particularly for the purposes of Section 5½ of the Metropolitan Water District Act, without reference to priority as between the Authority and any other part or parts of the District, provided that as between the District (including the Authority) and the United States and other parties to the Seven-Party Priority Agreement, nothing herein shall be construed as increasing the amount of water available to the District and/or the Authority under the fourth priority set out in the recitals hereof, or otherwise prejudicing the respective rights of other parties to the Seven-Party Priority Agreement in the water of the Colorado River. The point of delivery of all water delivered to the District under its outstanding water delivery contract and hereunder, shall be at the District's intake above Parker Dam and the United States hereby agrees that the diversion point of water heretofore agreed to be delivered to San Diego under said water delivery contract of February 15, 1933, is hereby transferred from

the point on the Colorado River immediately above the Imperial Dam to the District's intake at a point on the Colorado River immediately above Parker Dam.

13. In the event that the corporate area of the Authority shall at any time cease to be a part of the District, the said contract between the United States and San Diego dated February 15, 1933, shall be revived and reinstated, and shall thereupon become severally operative; provided, that the right of the Secretary to cancel such contract for the nonuse of water thereunder, shall not be exercised within ten years from the date when the corporate area of the Authority shall cease to be a part of the District.

14. This contract shall be of no force or effect until and unless:

(a) The corporate area of the Authority is annexed to the corporate area of the District prior to December 31, 1946, and at a time when the corporate area of San Diego is a part of the corporate area of the Authority;

(b) A majority of the qualified electors of San Diego voting on the proposition shall authorize the transfer and assignment to the District by San Diego of San Diego's rights and obligations under the Water Delivery Contract between the United States and the City of San Diego dated February 15, 1933, relating to the waters of the Colorado River;

(c) A majority of the qualified electors of San Diego voting on the proposition shall authorize the transfer and assignment to the Authority of San Diego's rights and obligations under the contract dated October 17, 1945 (NOy-13300), granting San Diego a lease of the aqueduct being constructed by the United States Navy from San Jacinto Tunnel to San Vicente Reservoir, except San Diego's obligations under Article 2 (a) of said contract to construct a water treatment plant and other works as contemplated by the San Diego bond issue approved April 17, 1945, and the obligation under Article 2 (c) of said contract that San Diego supply all Government agencies within the area with an adequate supply of water at nondiscriminatory rates, and on condition that if the Authority shall cease to be a portion of the corporate area of The Metropolitan Water District of Southern California, the said Lease-Contract shall revert to San Diego, subject to all modifications, defaults or acts of the Authority, affecting the said Lease Contract;

(d) A majority of the qualified electors of the Authority voting on the proposition shall authorize the acceptance of the rights and the assumption by the Authority of the obligations transferred to the Authority by the assignment of the contract dated October 17, 1945 (NOy-13300).

15. This contract is made upon the express condition, and with the express understanding, that all rights hereunder shall be subject to and controlled by, the Colorado River Compact, being the Compact signed at Santa Fe, New Mexico, November 24, 1922, which compact was approved in Section 13 (a) of the Boulder Canyon Project Act.

16. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

17. Except as expressly modified by the terms hereof, outstanding contracts between the United States and the respective parties hereto shall remain in full force and effect.

18. This contract shall be known as the "1946 Merger Contract."

In witness whereof, the parties hereto have executed this contract the day and year first above written.

THE UNITED STATES OF AMERICA,
By WARNER W. GARDNER,
Acting Secretary of the Interior.

THE CITY OF SAN DIEGO,
By F. A. RHODES,
City Manager.

Attest:
[SEAL] FRED W. SICK, *City Clerk.*
SAN DIEGO COUNTY WATER AUTHORITY,
By J. L. BURKHOLDER,
General Manager.

Attest:
[SEAL] W. H. JENNINGS, *Secretary.*
THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA,
By JULIAN HINDS,
General Manager and Chief Engineer.

CCC

[SEAL]

Attest:
A. L. GRAM, *Executive Secretary.*

Approved as to form:

JAMES H. HOWARD,
General Counsel.

WATER: CALIF.—1946: METROPOLITAN AND SAN DIEGO A541

As evidence of its approval of the foregoing contract between the United States, The City of San Diego, the San Diego County Water Authority, and The Metropolitan Water District of Southern California, the County of San Diego has caused the signature of the Chairman of Its Board of Supervisors to be affixed thereto.

BOARD OF SUPERVISORS OF THE COUNTY
OF SAN DIEGO.

By DAN ROSSI, *Chairman pro tem.*

Attest:

[SEAL]

J. B. McLEES, *County Clerk.*

By M. NASLAND, *Deputy.*

I hereby approve the form and legality of the within 1946 Merger Contract, this 9th day of October 1946.

J. F. DuPAUL,
City Attorney, The City of San Diego.

Appendix 1013

**WATER: CALIFORNIA
SAN DIEGO, OCTOBER 29, 1946**

NAVY DEPARTMENT
BUREAU OF YARDS AND DOCKS

SUPPLEMENTAL AGREEMENT NO. 2

**MODIFICATION OF CONTRACT NOY-13300 WITH THE CITY OF SAN
DIEGO, CALIFORNIA**

Whereas a negotiated contract dated October 17, 1945, between the United States of America (hereinafter called the Government) represented by the Chief of the Bureau of Yards and Docks, Navy Department, Washington, D. C., and The City of San Diego, California (hereinafter called the City) provides for the construction by the Government of a steel and concrete aqueduct running from a connection with the Colorado River Aqueduct of The Metropolitan Water District of Southern California near the west portal of the San Jacinto Tunnel, Riverside County, to San Vicente Reservoir, San Diego County, and further provides for the delivery of possession of said aqueduct to the City under certain lease conditions as specified in said contract; and

Whereas this contract further provides, in Article 1, Section (a) that the Aqueduct project shall include the entire structure and appurtenances thereto, together with the rights in real property acquired by the Government for its construction or operation, and also provides, in Article 1, Section (b) (ii) that title to the Aqueduct shall remain in, and title to all replacements and improvements thereto made during the life of the lease shall vest in, the Government, and finally provides for the acquisition by the City of title to said Aqueduct as so defined under the provisions set out in Article 1, Section (b) (iv); and

Whereas a Stipulation for Judgment as to Parcels 1-A and 1-B only has been entered into by the Government and The Metropolitan Water District of Southern California in that condemnation action entitled, "United States of America, Plaintiff, vs. 78 Parcels of Land in the County of Riverside, State of California; The Metropolitan Water District of Southern California, a municipal corporation, et al., Defendants, No. 4880-WM-Civil," in the District Court

of the United States in and for the Southern District of California, Central Division, and said Stipulation and Final Judgment and Decree thereon were filed in said action on July 3, 1946; and

Whereas by said Stipulation for Judgment and said Final Judgment and Decree in Condemnation it is adjudged that title to the transition and diversion structures to be constructed by the Government at the west portal of the San Jacinto Tunnel of The Metropolitan Water District of Southern California, pursuant to the provisions of the temporary easement therein described and defined as Parcel 1-B, will not vest in the Government but will vest in The Metropolitan Water District of Southern California; and

Whereas the City by Resolution No. 83328 of its council on May 30, 1946, has concurred in this Stipulation for Judgment and Final Judgment and Decree in Condemnation and approves this vesting of title to said transition and diversion structures in The Metropolitan Water District of Southern California;

Now, therefore, it is hereby mutually agreed between the Government and the City that the aforesaid contract be modified by adding to Article 1, Section (b) a new subsection (vi) as follows:

“(vi) For the purpose of determining the true cost and/or purchase price the Aqueduct shall include the transition and diversion structures constructed by the Government at the west portal of the San Jacinto Tunnel of The Metropolitan Water District of Southern California, upon land of said District, pursuant to the provisions of the temporary easement described and designated as Parcel 1-B in the condemnation action entitled, ‘United States of America, Plaintiff, vs. 78 Parcels of Land in the County of Riverside, State of California; The Metropolitan Water District of Southern California, a municipal corporation, et al., Defendants, No. 4880-WM-Civil,’ in the District Court of the United States in and for the Southern District of California, Central Division; but for the purpose of delivering possession to the City, of retention of title in the Government and of conveyance of title to the City, the Aqueduct shall not include the said transition and diversion structures, and title to the said transition and diversion structures shall vest, be, and remain, in the said District.”

In witness whereof the parties hereto have executed this contract this 29th day of October 1946.

UNITED STATES OF AMERICA,
By R. H. MEADE (CEC), USN,
(For the Chief of the Bureau of
Yards and Docks, acting under
the direction of the Secretary
of the Navy.)

D. W. P.
THE CITY OF SAN DIEGO,
By F. A. RHODES, *City Manager*.

Attest:

[SEAL]

Approved as to form:

FRED W. SICK, *City Clerk*.

J. F. DUPAUL, *City Attorney*.

The foregoing Modification of Contract NOy-13300 is approved.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By J. M. GAYLORD, *Chief Electrical Engineer*.
C. C. C.

Attest:

[SEAL]

Approved as to form:

A. L. GRAM, *Executive Secretary*.

JAMES H. HOWARD, *General Counsel*.

Appendix 1014

WATER: CALIFORNIA

**METROPOLITAN WATER DISTRICT AND CITY OF
SAN DIEGO, MARCH 14, 1947**

THIS AGREEMENT, made this 14th day of March, 1947, between the CITY OF SAN DIEGO, a municipal corporation, and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation of the State of California,

Witnesseth that:

1. Whereas the City of San Diego, under date of April 15, 1926, filed an application with the Division of Water Resources, Department of Public Works of the State of California, seeking a permit to appropriate from the Colorado River 112,000 acre-feet annually of the waters of said river for use in the City of San Diego, which application is now pending before the Division of Water Resources and is designated Application No. 4997; and

2. Whereas, under date of August 18, 1931, the Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, The Metropolitan Water District of Southern California, the City of Los Angeles, the City of San Diego and County of San Diego entered into an agreement fixing their respective priorities in the waters of the Colorado River available for use in California under the Colorado River Compact and the Boulder Canyon Project Act, which contract is commonly referred to as the "Seven-Party Priority Agreement"; and

3. Whereas, under date of February 15, 1933, the United States and San Diego entered into a water-delivery contract approved by the County of San Diego, providing for the delivery by the United States to the City of San Diego of certain waters of the Colorado River in accordance with the schedule of priorities fixed in said Seven-Party Priority Agreement, said contract being for the benefit of the City of San Diego and the County of San Diego and commonly referred to as the "San Diego Water Delivery Contract"; and

4. Whereas, under date of October 4, 1946, a contract was entered into between the United States of America, the City of San Diego, the San Diego County Water Authority, a municipal corporation of the State of California, and The Metropolitan Water District of Southern California, providing for the merger of all the rights of the City of San Diego to the storage and delivery of Colorado River

water under the "San Diego Water Delivery Contract" with the rights of The Metropolitan Water District of Southern California to the storage and delivery of Colorado River water under a water-delivery contract between the United States of America and The Metropolitan Water District of Southern California, dated April 24, 1930, as amended by a Supplementary Contract dated September 28, 1931, and further providing that the diversion point of water heretofore agreed to be delivered to the City of San Diego under said water-delivery contract of February 15, 1933, should be changed from a point on the Colorado River immediately above Imperial Dam to The Metropolitan Water District of Southern California's intake at a point on the Colorado River immediately above Parker Dam, said contract being contingent upon annexation of San Diego County Water Authority to The Metropolitan Water District of Southern California prior to January 1, 1947; and

5. Whereas San Diego County Water Authority, pursuant to the will of a majority of the qualified electors of said County Water Authority voting thereon at a special election held for that purpose on November 5, 1946, has become annexed to and is now a part of The Metropolitan Water District of Southern California, such annexation proceedings having been completed on the 17th day of December 1946:

Now, therefore, in consideration of the premises and in furtherance of the mutual covenants and agreements contained in that certain contract merging the rights of the City of San Diego and The Metropolitan Water District of Southern California, dated October 4, 1946, the City of San Diego does hereby grant and convey to The Metropolitan Water District of Southern California all of its right and interest in and to the storage and delivery of Colorado River water as evidenced by said water delivery contract of February 15, 1933, together with all of its right and interest in and to the use of the waters of the Colorado River under any act of appropriation heretofore made, and does hereby assign and transfer to The Metropolitan Water District of Southern California any and all rights it may have acquired, or may in the future acquire, under and by virtue of that certain application to appropriate water from the Colorado River heretofore referred to and designated Application No. 4997.

In witness whereof the parties hereto have executed this contract the day and year first above written.

CITY OF SAN DIEGO,
By (s) F. A. RHODES, *City Manager.*

Attest:
[SEAL]

(s) FRED W. SICK, *City Clerk.*
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By (s) JULIAN HINDS,
General Manager and Chief Engineer.
JHH

Attest
[SEAL]

(s) A. L. GRAM, *Executive Secretary.*
Approved January 27, 1947.

COUNTY OF SAN DIEGO,
By (s) DE GRAFF AUSTIN,
Chairman, Board of Supervisors.

Attest:
[SEAL]

J. B. McLEES,
*County Clerk and ex officio Clerk
of the Board of Supervisors.*
By (s) M. NASLAND, *Deputy.*
SAN DIEGO COUNTY WATER AUTHORITY,
By (s) J. L. BURKHOLDER,
General Manager and Chief Engineer.

Attest:

(s) ELEANOR LONGFELLOW,
Executive Secretary.

Approved as to form and execution:

(s) JAMES H. HOWARD,
General Counsel.
DMK

Appendix 1015

WATER: ARIZONA

GENERAL REGULATIONS, FEBRUARY 7, 1933

BOULDER CANYON PROJECT

REGULATIONS: DELIVERY OF WATER IN ARIZONA

I

These regulations are promulgated to further the peaceful enjoyment by Arizona, California, and Nevada of the waters of the Colorado River. They state the form of a water delivery contract which the United States will enter into with the State of Arizona, subject to certain conditions stated below.

II

The authorization for a contract provided in these regulations shall remain in force only for so long a period as the State of Arizona, and claimants to the use of water therein, do not interfere, by litigation or otherwise, with diversions of other holders, present and future, of water contracts with the United States and with diversion works constructed by or for them or the United States. In the event of such interference these regulations and the authorization herein contained shall thereupon become void.

III

The United States, subject to the foregoing conditions, will enter into a contract with the State of Arizona in substantially the form stated in Exhibit A, hereto annexed as a part hereof.

(Signed) **RAY LYMAN WILBUR,**
Secretary of the Interior.

FEBRUARY 7, 1933.

A551

(Exhibit A; part of regulations of February 7, 1933)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

CONTRACT FOR DELIVERY OF WATER

This contract, made this ---- day of -----, 1933, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof and supplemental thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 2, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, between the United States of America, hereinafter referred to as the United States, acting for this purpose by Ray Lyman Wilbur, Secretary of the Interior, hereinafter styled the Secretary, and the State of Arizona, acting for this purpose by -----:

Witnesseth:

EXPLANATORY RECITALS

2. Whereas, pursuant to the direction of the said Boulder Canyon Project Act, the Secretary has caused to be let a contract for the construction of a dam, known and referred to hereinafter as Hoover Dam, in the main stream of the Colorado River at Black Canyon, and said dam will create at the date of completion a storage reservoir having a maximum water-surface elevation at about one thousand, two hundred and twenty-nine (1,229) feet above sea level (U. S. Geological Survey datum) and a capacity of about 30,500,000 acre-feet; and

3. Whereas the Secretary is required by the said Boulder Canyon Project Act to use said dam and the reservoir created thereby, first for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic use, and the satisfaction of perfected rights in pursuance of Article VIII, of the Colorado River Compact, and third, for power, and

4. Whereas said Boulder Canyon Project Act authorizes the Secretary, under such general regulations as he may prescribe, to contract for the storage of water in said reservoir and for delivery thereof at such points on the river as may be agreed upon, and provides further that no person shall have or be entitled to have the use for any purpose of the water stored as aforesaid, except by contract made as therein stated; and

5. Whereas the Secretary has heretofore promulgated regulations dated April 23, 1930, amended September 28, 1931, authorizing the

execution of certain other water delivery contracts, and it is the desire of the parties to this agreement to contract for the storage of waters for use on lands in Arizona, and to assure the peaceful and uninterrupted performance of all such contracts, including this; and

6. Whereas by direction of Congress, water has been reserved and appropriated for lands within the Colorado River Indian Reservation in Arizona, unaffected by the Colorado River Compact by virtue of Article VII thereof; and

7. Whereas the United States and the State of Arizona, contemplating the future construction of other reclamation projects, and desiring to avoid claims by foreign water users to waters stored by Hoover Dam to the detriment of said projects, desire to provide for the storage of certain quantities of water for the benefit of lands in Arizona without prejudice to whatever right the parties may have hereafter to contract as to additional quantities of water; and

8. Whereas the diversion works in the Colorado River contemplated for certain of the contractors under said regulations of April 23, 1930, amended September 28, 1931, particularly the proposed Imperial Dam, and the proposed dam for the Metropolitan Water District of Southern California near Parker, will be of service for delivery of waters covered by this contract, and it is essential to the purpose of this contract that the building of said works, when approved by the United States, shall not be interfered with;

9. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to-wit:

DELIVERY OF WATER BY THE UNITED STATES

10. From storage available in the reservoir created by Hoover Dam, the United States will deliver under this contract each year at points of diversion hereinafter referred to on the Colorado River so much available water as may be necessary to enable the beneficial consumptive use in Arizona of not to exceed two million eight hundred thousand (2,800,000) acre-feet annually by all diversions affected from the Colorado River and its tributaries below Lee Ferry (but in addition to all uses from waters of the Gila River and its tributaries), subject to the following provisions:

(a) This contract is without prejudice to the claims of the State of Arizona and States in the Upper Basin as to their respective rights in and to waters of the Colorado River, and relates only to water physically available for delivery in the Lower Basin under the terms hereof.

(b) The United States does not undertake by this contract to deliver water above Hoover Dam; but the obligation to deliver water below Hoover Dam shall be diminished to the extent that consump-

tive uses in Arizona effected by diversions from the Colorado River and its tributaries below Lee Ferry diminish the inflow to the reservoir.

(c) It is recognized by the parties hereto that differences of opinion may exist between the State of Arizona and other contractors as to what part of the water contracted for by each falls within Article III (a) of the Colorado River compact, what part within Article III (b) thereof, what part is surplus water under said compact, what part is unaffected by said compact, and what part is affected by various provisions of section 4 (a) of the Boulder Canyon Project Act. Accordingly, while the United States undertakes to supply water from the regulated discharge of Hoover Dam waters in quantities stated by this contract as well as contracts heretofore or hereafter made pursuant to regulations of April 23, 1930, amended September 28, 1931, this contract is without prejudice to relative claims of priorities as between the State of Arizona and other contractors with the United States, and shall not otherwise impair any contract heretofore authorized by said regulations.

(d) This contract is without prejudice to the right of the United States to make further disposition of water available for use in the Lower Colorado River Basin not heretofore allocated by regulations nor herein contracted for, or to the respective claims of the States of Arizona, New Mexico, Utah, California, and Nevada, and of Mexico, to such additional water.

(e) The water provided for in this contract shall be delivered continuously, so far as reasonable diligence will permit, to the extent such water is beneficially used for irrigation and domestic purposes. The United States reserves the right to discontinue or temporarily reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacement or installation of equipment and/or machinery at Hoover Dam, but so far as feasible will give reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents, and employees shall not be liable for damages when for any reason whatsoever suspensions or reductions in delivery of water occur.

SUBORDINATE CONTRACTS AUTHORIZED

11. Deliveries of water subject to the terms of this contract may be made for lands within any Indian Reservation in Arizona, and to any individual, irrigation district, corporation, or any political subdivision of the State of Arizona, which may qualify under the Reclamation Law or other Federal statute. Contracts with such water users for such deliveries, subject to the terms of this contract, may be made by the Secretary in his discretion. Such contracts and deliveries made thereunder shall be deemed as made in discharge, pro tanto, of the obligations of this contract.

POINTS OF DIVERSION: MEASUREMENT OF WATER

12. The water to be delivered under this contract shall be measured at the points of diversion, or elsewhere as the Secretary may direct, by measuring and controlling devices or automatic gauges approved by the Secretary, which, however, shall be furnished, installed and maintained by the State of Arizona, or the users of water. Said measuring and controlling devices or automatic gauges shall be subject to the inspection of the United States, whose authorized representatives may at all times have access to them, and any deficiencies or inaccuracies found shall be promptly corrected. The United States shall be under no obligation to deliver any water which may be diverted at points at which such devices are not maintained, but in the event that diversions are made at points where measuring and controlling devices or automatic gauges are not maintained in accordance with this contract, the Secretary shall estimate the quantity of the diversions and his determination shall be final.

RECORDS OF WATER DELIVERIES

13. The State of Arizona shall cause to be made by water users or otherwise monthly reports on forms to be supplied by the United States of all water diverted from the Colorado River. Such reports shall be made by the 5th day of the month immediately succeeding the month in which the water is delivered.

NO CHARGES FOR DELIVERY OF WATER

14. No charge shall be made for water or for the use, storage, or delivery of water for irrigation, or water for potable purposes, in Arizona.

NO ARIZONA DIVERSIONS TO BE MADE EXCEPT PURSUANT HERETO:
DIVERSIONS IN OTHER STATES

15. It is the object of this contract to assure to those (including the State of Arizona) who have contracted or may hereafter contract with the United States for delivery of waters stored by Hoover Dam, the quiet performance of their respective contracts. It is accordingly agreed that—

(a) The State of Arizona will hereafter grant no permits for, nor otherwise authorize, uses of the waters of the Colorado River and its tributaries (other than the Gila River and its tributaries), except subject to the terms of this contract.

(b) The State of Arizona and its permittees will not interfere by litigation or otherwise, with deliveries of water under any contract between the United States and water users in the State of Nevada, or

any contract made pursuant to regulations dated April 23, 1930, amended September 28, 1931, nor with the construction of diversion works by or for the holder thereof, nor with diversions or other uses affected by such works; unless and until such contractor interferes, by litigation or otherwise, with the enjoyment of this contract. But in the event of such interference by any other such contractor with the enjoyment of this contract, the State may, at its election, either rely on this contract, or assert all rights which the State or any water user therein would have had against such party if this contract had not been made.

(c) Breach by the State of any of the provisions of this article shall entitle the United States at its option to cancel this contract and any or all subordinate contracts referred to in article 11.

DURATION OF CONTRACT

16. This contract is for permanent service, subject to the provisions contained in the preceding article.

DISPUTES AND DISAGREEMENTS

17. Whenever a controversy arises out of this contract, and if the parties hereto then agree to submit the matter to arbitration, the State of Arizona shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators within fifteen (15) days after their first meeting, but in the event of their failure to name all or any of the three arbitrators within thirty (30) days after their first meeting, such arbitrators, not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of the five shall be a valid and binding award.

RULES AND REGULATIONS

18. The Secretary may prescribe and enforce rules and regulations governing the delivery and diversion of water hereunder, but such rules and regulations shall be promulgated, modified, revised and/or extended from time to time only after notice to the State of Arizona and opportunity for it to be heard.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

19. As required by section 13 (c) of the Boulder Canyon Project Act, this contract is made upon the express condition and with the express understanding that all rights hereunder shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922,

pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact, or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes," as approved by the Boulder Canyon Project Act, but is without prejudice to the respective contentions of the State of Arizona and of the parties to said compact, as to interpretation thereof.

EFFECTIVE DATE OF CONTRACT

20. This contract shall take effect when an act of the Legislature of Arizona ratifying it shall have become effective, but within two years of the date hereof.

INTEREST IN CONTRACT NOT TRANSFERABLE

21. No interest in or under this contract shall be transferable by either party without the written consent of the other.

MEMBER OF CONGRESS CLAUSE

22. No Member of or Delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be considered to extend to this contract if made with a corporation for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR,
Secretary of the Interior.

THE STATE OF ARIZONA,
By _____.

Attest:
_____.

Approved as to form, February 7, 1933:

(Signed) RAY LYMAN WILBUR,
Secretary of the Interior.

The foregoing contract was ratified by act of the Legislature of Arizona which became effective -----, 193--, true copy of which is hereto annexed.

Appendix 1016

WATER: ARIZONA
CONTRACT OF FEBRUARY 9, 1944 (EFFECTIVE
FEBRUARY 24, 1944)

(Act of February 24, 1944; Ch. 4, Seventeenth Legislature; Session
Laws of Arizona, 1944, pp. 419-427)

CHAPTER 4

(House Bill No. 2)

*An Act ratifying the contract between the United States and the State of
Arizona for storage and delivery of water from Lake Mead, and declar-
ing an emergency*

Be it enacted by the Legislature of the State of Arizona:

SECTION 1. RATIFICATION. There is hereby unconditionally rati-
fied, approved, and confirmed, that certain contract for the storage
and delivery of water from Lake Mead executed on behalf of the
United States by the Honorable Harold L. Ickes, secretary of the
Interior, and on behalf of the State of Arizona by its Colorado river
commission, bearing date the 9th day of February 1944, as follows:

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

CONTRACT FOR DELIVERY OF WATER

THIS CONTRACT made this 9th day of February 1944 pursuant to
the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts
amendatory thereof or supplemental thereto, all of which acts are
commonly known and referred to as the Reclamation Law, and par-
ticularly pursuant to the Act of Congress approved December 21,
1928 (45 Stat. 1057), designated the Boulder Canyon Project Act,
and acts amendatory thereof or supplementary thereto, between THE
UNITED STATES OF AMERICA, hereinafter referred to as "United
States," acting for this purpose by Harold L. Ickes, Secretary of the
Interior, hereinafter referred to as the "Secretary," and the STATE OF
ARIZONA, hereinafter referred to as "Arizona," acting for this purpose

by the Colorado River Commission of Arizona, pursuant to Chapter 46 of the 1939 Session Laws of Arizona,

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas for the purpose of controlling floods, improving navigation, regulating the flow of the Colorado River, providing for storage and for the delivery of stored waters for the reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary acting under and in pursuance of the provisions of the Colorado River Compact and Boulder Canyon Project Act, and acts amendatory thereof or supplementary thereto, has constructed and is now operating and maintaining in the main stream of the Colorado River at Black Canyon that certain structure known as and designated Boulder Dam and incidental works, creating thereby a reservoir designated Lake Mead of a capacity of about thirty-two million (32,000,000) acre-feet; and

3. Whereas said Boulder Canyon Project Act provides that the Secretary, under such general rules and regulations as he may prescribe, may contract for the storage of water in the reservoir created by Boulder Dam, and for the delivery of such water at such points on the river as may be agreed upon, for irrigation and domestic uses, and provides further that no person shall have or be entitled to have the use for any purpose of the water stored, as aforesaid, except by contract made as stated in said Act; and

4. Whereas it is the desire of the parties to this contract to contract for the storage of water and the delivery thereof for irrigation of lands and domestic uses within Arizona; and

5. Whereas nothing in this contract shall be construed as affecting the obligations of the United States to Indian tribes:

6. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF WATER

7. (a) Subject to the availability thereof for use in Arizona under the provisions of the Colorado River Compact and the Boulder Canyon Project Act, the United States shall deliver and Arizona, or agencies or water users therein, will accept under this contract each calendar year from storage in Lake Mead, at a point or points of diversion on the Colorado River approved by the Secretary, so much water as may be necessary for the beneficial consumptive use for irrigation and domestic uses in Arizona of a maximum of 2,800,000 acre-feet.

(b) The United States also shall deliver from storage in Lake Mead for use in Arizona, at a point or points of diversion on the Colorado River approved by the Secretary, for the uses set forth in subdivision (a) of this Article, one-half of any excess or surplus waters unapportioned by the Colorado River Compact to the extent such water is available for use in Arizona under said compact and said act, less such excess or surplus water unapportioned by said compact as may be used in Nevada, New Mexico, and Utah in accordance with the rights of said states as stated in subdivisions (f) and (g) of this Article.

(c) This contract is subject to the condition that Boulder Dam and Lake Mead shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights in pursuance of Article VIII of the Colorado River Compact; and third, for power. This contract is made upon the express condition and with the express covenant that the United States and Arizona, and agencies and water users therein, shall observe and be subject to and controlled by said Colorado River Compact and the Boulder Canyon Project Act in the construction, management, and operation of Boulder Dam, Lake Mead, canals and other works, and the storage, diversion, delivery, and use of water for the generation of power, irrigation, and other uses.

(d) The obligation to deliver water at or below Boulder Dam shall be diminished to the extent that consumptive uses now or hereafter existing in Arizona above Lake Mead diminish the flow into Lake Mead, and such obligation shall be subject to such reduction on account of evaporation, reservoir and river losses, as may be required to render this contract in conformity with said compact and said act.

(e) This contract is for permanent service, subject to the conditions stated in subdivision (c) of this Article, but as to the one-half of the waters of the Colorado River system unapportioned by paragraphs (a), (b), and (c) of Article III of the Colorado River Compact, such water is subject to further equitable apportionment at any time after October 1, 1963, as provided in Article III (f) and Article III (g) of the Colorado River Compact.

(f) Arizona recognizes the right of the United States and the State of Nevada to contract for the delivery from storage in Lake Mead for annual beneficial consumptive use within Nevada for agricultural and domestic uses of 300,000 acre-feet of the water apportioned to the Lower Basin by the Colorado River Compact, and in addition thereto to make contract for like use of $\frac{1}{25}$ (one twenty-fifth) of any excess or surplus waters available in the Lower Basin and unapportioned by the Colorado River Compact, which waters are subject to further equitable apportionment after October 1, 1963, as provided in Article III (f) and Article III (g) of the Colorado River Compact.

(g) Arizona recognizes the rights of New Mexico and Utah to equitable shares of the water apportioned by the Colorado River Compact to the Lower Basin and also water unapportioned by such compact, and nothing contained in this contract shall prejudice such rights.

(h) Arizona recognizes the right of the United States and agencies of the State of California to contract for storage and delivery of water from Lake Mead for beneficial consumptive use in California, provided that the aggregate of all such deliveries and uses in California from the Colorado River shall not exceed the limitation of such uses in that State required by the provisions of the Boulder Canyon Project Act and agreed to by the State of California by an act of its Legislature (Chapter 16, Statutes of California of 1929) upon which limitation the State of Arizona expressly relies.

(i) Nothing in this contract shall preclude the parties hereto from contracting for storage and delivery above Lake Mead of water herein contracted for, when and if authorized by law.

(j) As far as reasonable diligence will permit, the water provided for in this contract shall be delivered as ordered and as reasonably

required for domestic and irrigation uses within Arizona. The United States reserves the right to discontinue or temporarily reduce the amount of water to be delivered, for the purpose of investigation and inspection, maintenance, repairs, replacements, or installation of equipment or machinery at Boulder Dam, or other dams heretofore or hereafter to be constructed, but so far as feasible will give reasonable notice in advance of such temporary discontinuance or reduction.

(k) The United States, its officers, agents, and employees shall not be liable for damages when for any reason whatsoever suspensions or reductions in the delivery of water occur.

(l) Deliveries of water hereunder shall be made for use within Arizona to such individuals, irrigation districts, corporations or political subdivisions therein of Arizona as may contract therefor with the Secretary, and as may qualify under the Reclamation Law or other federal statutes or to lands of the United States within Arizona. All consumptive uses of water by users in Arizona, of water diverted from Lake Mead or from the main stream of the Colorado River below Boulder Dam, whether made under this contract or not, shall be deemed, when made, a discharge pro tanto of the obligation of this contract. Present perfected rights to the beneficial use of waters of the Colorado River system are unimpaired by this contract.

(m) Rights-of-way across public lands necessary or convenient for canals to facilitate the full utilization in Arizona of the water herein agreed to be delivered will be granted by the Secretary subject to applicable federal statutes.

POINTS OF DIVERSION: MEASUREMENTS OF WATER

8. The water to be delivered under this contract shall be measured at the points of diversion, or elsewhere as the Secretary may designate (with suitable adjustment for losses between said points of diversion and measurement), by measuring and controlling devices or automatic gauges approved by the Secretary, which devices, however, shall be furnished, installed, and maintained by Arizona, or the users of water therein, in manner satisfactory to the Secretary; said measuring and controlling devices or automatic gauges shall be subject to the inspection of the United States, whose authorized representatives may at all times have access to them, and any deficiencies found shall be promptly corrected by the users thereof. The United States shall be under obligation to deliver water only at diversion points where measuring and controlling devices or automatic gauges are maintained, in accordance with this contract, but in the event diversions are made at points where such devices are not maintained, the Secretary shall estimate the quantity of such diversions and his determination thereof shall be final.

CHARGES FOR STORAGE AND DELIVERY OF WATER

9. No charge shall be made for the storage or delivery of water at diversion points as herein provided necessary to supply present perfected rights in Arizona. A charge of 50¢ per acre-foot shall be made for all water actually diverted directly from Lake Mead during the Boulder Dam cost repayment period, which said charge shall be paid by the users of such water, subject to reduction by the Secretary in

the amount of the charge if it is concluded by him at any time during said cost-repayment period that such charge is too high. After expiration of the cost-repayment period, charges shall be on such basis as may hereafter be prescribed by Congress. Charges for the storage or delivery of water diverted at a point or points below Boulder Dam, for users, other than those specified above, shall be as agreed upon between the Secretary and such users at the time of execution of contracts therefor, and shall be paid by such users; provided such charges shall, in no event, exceed 25¢ per acre-foot.

RESERVATIONS

10. Neither Article 7, nor any other provision of this contract, shall impair the right of Arizona and other states and the users of water therein to maintain, prosecute or defend any action respecting, and is without prejudice to, any of the respective contentions of said states and water users as to (1) the intent, effect, meaning, and interpretation of said compact and said act; (2) what part, if any, of the water used or contracted for by any of them falls within Article III (a) of the Colorado River Compact; (3) what part, if any, is within Article III (b) thereof; (4) what part, if any, is excess or surplus waters unapportioned by said Compact; and (5) what limitations on use, rights of use, and relative priorities exist as to the waters of the Colorado River system; provided, however, that by these reservations there is no intent to disturb the apportionment made by Article III (a) of the Colorado River Compact between the Upper Basin and the Lower Basin.

DISPUTES AND DISAGREEMENTS

11. Whenever a controversy arises out of this contract, and if the parties hereto then agree to submit the matter to arbitration, Arizona shall name one arbitrator and the Secretary shall name one arbitrator and the two arbitrators thus chosen shall meet within ten days after their selection and shall elect one other arbitrator within fifteen days after their first meeting, but in the event of their failure to name the third arbitrator within thirty days after their first meeting, such arbitrator not so selected shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Tenth Circuit. The decision of any two of the three arbitrators thus chosen shall be a valid and binding award.

RULES AND REGULATIONS

12. The Secretary may prescribe and enforce rules and regulations governing the delivery and diversion of waters hereunder, but such rules and regulations shall be promulgated, modified, revised or extended from time to time only after notice to the State of Arizona and opportunity is given to it to be heard. Arizona agrees for itself, its agencies and water users that in the operation and maintenance of the works for diversion and use of the water to be delivered hereunder, all such rules and regulations will be fully adhered to.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

13. This contract is made upon the express condition and with the express covenant that all rights of Arizona, its agencies and water users, to waters of the Colorado River and its tributaries, and the use of the same, shall be subject to and controlled by the Colorado River Compact signed at Santa Fe, New Mexico, November 24, 1922, pursuant to the Act of Congress approved August 19, 1921 (42 Stat. 171), as approved by the Boulder Canyon Project Act.

EFFECTIVE DATE OF CONTRACT

14. This contract shall be of no effect unless it is unconditionally ratified by an Act of the Legislature of Arizona, within three years from the date hereof, and further, unless within three years from the date hereof the Colorado River Compact is unconditionally ratified by Arizona. When both ratifications are effective, this contract shall be effective.

INTEREST IN CONTRACT NOT TRANSFERABLE

15. No interest in or under this contract, except as provided by Article 7 (1), shall be transferable by either party without the written consent of the other.

APPROPRIATION CLAUSE

16. The performance of this contract by the United States is contingent upon Congress making the necessary appropriations for expenditures for the completion and the operation and maintenance of any dams, power plants or other works necessary to the carrying out of this contract, or upon the necessary allotments being made therefor by any authorized federal agency. No liability shall accrue against the United States, its officers, agents, or employees by reason of the failure of Congress to make any such appropriations or of any federal agency to make such allotments.

MEMBER-OF-CONGRESS CLAUSE

17. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

DEFINITIONS

18. Wherever terms used herein are defined in Article II of the Colorado River Compact or in Section 12 of the Boulder Canyon Project Act, such definitions shall apply in construing this contract.

19. In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

By (s) THE UNITED STATES OF AMERICA,
HAROLD L. ICKES,
Secretary of the Interior.

STATE OF ARIZONA, acting by and
through its COLORADO RIVER
COMMISSION,

By (s) HENRY S. WRIGHT, *Chairman.*
By (s) NELLIE T. BUSH, *Secretary.*

Approved this 11th day of February 1944:¹

(s) SIDNEY P. OSBORN,
Governor of the State of Arizona.

SEC. 2. EMERGENCY. To preserve the public peace, health and safety it is necessary that this Act become immediately operative. It is therefore declared to be an emergency measure, to take effect as provided by law.

Approved by the Governor: February 24, 1944.

Filed in the Office of the Secretary of State: February 24, 1944.

¹ On copies of this contract furnished by the Department of the Interior, this date appears "7th day of February 1944."

Appendix 1017

WATER: ARIZONA

**DECISION OF THE SECRETARY OF THE INTERIOR,
FEBRUARY 9, 1944**

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
INFORMATION SERVICE

For Immediate Release: Thursday, February 10, 1944.

Secretary of the Interior Harold L. Ickes announced today he had signed, on behalf of the United States, a contract to deliver to the State of Arizona annually 2,800,000 acre-feet of Colorado River water from storage in the Bureau of Reclamation's Boulder Dam reservoir, subject to its availability for use in Arizona under the provisions of the Colorado River Compact and the Boulder Canyon Project Act.

Commissioner of Reclamation Harry W. Bashore said the contract would become effective when ratified by the Arizona legislature and when this body unconditionally ratifies the Colorado River Compact. The legislature on March 25, 1943, voted to ratify the Compact, provided a contract for the delivery of water from Lake Mead was executed between the United States and Arizona.

The Secretary signed the contract after considering fully the objections presented by the State of California in a hearing on February 2 and representations made by the State of Arizona in reply. The contract had previously been approved by the Committee of Fourteen, which is composed of two representatives of each of the seven Colorado River Basin states. All members of the Committee except those from California approved the agreement which the Secretary has now signed.

In announcing his decision, Secretary Ickes issued the following memorandum:

"MEMORANDUM re hearing February 2 on California's objections to the proposed contract between the United States and Arizona for the delivery of water from Lake Mead

"There has been submitted to me for approval and execution a proposed contract between the United States and the State of Arizona for the delivery of water from Lake Mead for use in Arizona. Section

5 of the Boulder Canyon Project Act authorizes me to contract for the storage and delivery of water impounded by Boulder Dam. Under subdivision (a) of Article 7 of the proposed contract the United States agrees to deliver annually from storage in Lake Mead for use in Arizona a maximum of 2,800,000 acre-feet of water, subject to its availability for use in Arizona under the provisions of the Colorado River Compact and the Boulder Canyon Project Act, and under subdivision (b) of Article 7 the United States agrees to deliver one-half of any excess or surplus water unapportioned by the compact to the extent such water is available for use in Arizona under the compact and act. The contract is conditioned upon the unconditional ratification of the compact by Arizona.

"The proposed contract was drafted by the Committee of Fourteen after the Arizona legislature last Spring passed an act contingently ratifying the compact—the contingency being the execution and ratification by the legislature of a contract for the delivery of water from Lake Mead. Representatives of the Bureau of Reclamation worked closely with the Committee and made a number of modifications which were accepted by the Committee and Arizona. Bureau representatives under my instructions have taken the position throughout the negotiations that any contract proposed should not commit the Department as to any controversial issue regarding the amounts of water available to Arizona, or to any compact state, under the compact and the act. The proposed contract has been approved by the representatives of each of the Colorado River states, except California.

"I have considered carefully the objections made by California in its printed brief and at the hearing before me on February 2. California is fearful that subdivisions (a) and (b) of Article 7 construed together create an inference that the maximum of 2,800,000 acre-feet which the United States agrees to deliver under subdivision (a) is water apportioned to the Lower Basin under Article III (a) of the compact and that Arizona could contend, to California's prejudice, that this constituted an administrative determination that Arizona was entitled by this contract to 2,800,000 acre-feet of III (a) water. I am convinced that California's fears in this respect are unfounded for at least two reasons. First, I wish to make it clear, and to emphasize, that the delivery of water under both subdivision (a) and subdivision (b) of Article 7 is expressly 'subject to its availability under the Colorado River Compact and the Boulder Canyon Project Act.' The proposed contract does not attempt to obligate the United States to deliver any water to Arizona which is not available to Arizona under the terms of the compact and act. Secondly, Article 10 was purposely designed to prevent Arizona, or any other state, from contending that the proposed contract, or any provision of the proposed contract, resolves any issue on the amounts of waters which are apportioned or unapportioned by the compact and the amounts of apportioned or unapportioned water available to the respective states under the compact and the act. It expressly reserves for future judicial determination any issue involving the intent, effect, meaning and interpretation of the compact and act. The language of Article 10 is plain and unequivocal and adequately reserves all questions of interpretation of the compact and the act.

"It is my opinion that I have authority under Section 5 of the act to execute such a contract as is proposed to be made with Arizona. The Department has made contracts with California and Nevada for the delivery of waters from Lake Mead subject to its availability under the compact and act. Now that Arizona has agreed to ratify the compact, it is my opinion that Arizona is entitled to be accorded the same consideration that the Department has accorded to California and Nevada. Accordingly, I have decided to approve and execute the proposed contract with Arizona.

"(Sgd.) HAROLD L. ICKES,
Secretary of the Interior."

"FEBRUARY 9, 1944."

California and Arizona have been at odds for more than 20 years over the division of the waters of the Colorado River system. The fundamental controversy between the two states concerns the amount of water to which each state is entitled under the Compact and the Boulder Canyon Project Act.

The dispute dates back to 1922 when six of the seven states in the Colorado River Basin agreed to the Colorado River Compact which apportioned the waters from the main river and its tributaries to the Upper and Lower Basins. Arizona was the lone objector. Subsequently the legislatures of all states, except Arizona, ratified the Compact.

In 1928 the Congress passed the Boulder Canyon Project Act which provided that the Act would not become effective until the California legislature agreed to limit its use to 4,400,000 acre-feet of water apportioned in Article III (a) of the Compact, plus one-half of the excess or surplus unapportioned water. California passed such a limitation act in 1929.

Appendix 1018

WATER: NEVADA
CONTRACT OF MARCH 30, 1942

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

CONTRACT FOR DELIVERY OF WATER

1. THIS CONTRACT, made this 30th day of March, nineteen hundred forty-two, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, and acts amendatory thereof or supplementary thereto, between THE UNITED STATES OF AMERICA (hereinafter referred to as "United States"), acting for this purpose by Abe Fortas, Acting Secretary of the Interior (hereinafter referred to as the "Secretary"), and the STATE OF NEVADA, a body politic and corporate, and its Colorado River Commission (said Commission acting in the name of the State, but as principal in its own behalf as well as in behalf of the State; the term State as used in this contract being deemed to be both the State of Nevada and its Colorado River Commission), acting in pursuance of an act of the Legislature of the State of Nevada, entitled "An Act creating a commission to be known as the Colorado river commission of Nevada, defining its powers and duties, and making an appropriation for the expenses thereof, and repealing all acts and parts of acts in conflict with this act," approved March 20, 1935 (Chapter 71, Stats. of Nevada, 1935);

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas for the purpose of controlling floods, improving navigation, regulating the flow of the Colorado River, providing for storage and for the delivery of stored waters for the reclamation of public

lands and other beneficial uses exclusively within the United States, the Secretary, acting under and in pursuance of the provisions of the Colorado River Compact and the Boulder Canyon Project Act, and acts amendatory thereof or supplementary thereto, has constructed and is now operating and maintaining in the main stream of the Colorado River at Black Canyon that certain structure known as and designated Boulder Dam and incidental works, creating thereby a reservoir designated Lake Mead; and

3. Whereas the State is desirous of entering into a contract for the delivery to it of water from Lake Mead:

4. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF WATER BY THE UNITED STATES

5. (a) Subject to the availability thereof for use in Nevada under the provisions of the Colorado River Compact and the Boulder Canyon Project Act, the United States shall, from storage in Lake Mead, deliver to the State each year at a point or points to be selected by the State and approved by the Secretary, so much water as may be necessary to supply the State a total quantity not to exceed One Hundred Thousand (100,000) acre-feet each calendar year. The right of the State to contract for the delivery to it from storage in Lake Mead of additional water is not limited by this contract. Said water may be used only within the State of Nevada, exclusively for irrigation, household, stock, municipal, mining, milling, industrial, and other like purposes, but shall not be used for the generation of electric power.

(b) Water agreed to be delivered to the State hereunder shall be delivered continuously as far as reasonable diligence will permit, but the United States shall not be obligated to deliver water to the State when for any reason, as conclusively but not arbitrarily determined by the Secretary, such delivery would interfere with the use of Boulder Dam or Lake Mead for river regulation, improvement of navigation, flood control, and/or satisfaction of perfected rights, in or to the waters of the Colorado River, or its tributaries, in pursuance of Article VIII of the Colorado River Compact.

(c) The United States reserves the right, for the purpose of investigation, inspection, maintenance, repairs and replacement or installation of equipment or machinery at Boulder Dam, to discontinue temporarily or reduce the amount of water to be delivered hereunder, but so far as feasible the United States will give the State reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents, and employees shall not be liable for damages when, for any reason whatsoever, suspensions or reductions in delivery of water occur.

(d) This contract is for permanent service, and is made subject to the express condition that the State, upon request of the Secretary, shall submit in writing prior to January 1st of any year, an estimate of the amount of water to be required under this contract for the succeeding calendar year.

RECEIPT OF WATER BY THE STATE

6. The State shall receive the water to be diverted by or delivered to it by the United States under the terms hereof at the point or points of delivery to be hereafter designated as stated in the next preceding article hereof, and shall perform all acts required by law or custom in order to maintain control over such water and to secure and maintain its lawful use and proper diversion from Lake Mead. The diversion and conveyance of such water to places of use shall be without expense to the United States.

MEASUREMENT OF WATER

7. The water to be delivered to the State hereunder shall be measured at the point or points of diversion from Lake Mead, or at such point or points in any works used by the State to convey water from Lake Mead to its place or places of use as shall be satisfactory to the Secretary, and by such measuring and controlling devices or such automatic gauges or otherwise as shall be satisfactory to the Secretary. Said measuring and controlling devices, or automatic gauges, shall be furnished, installed, and maintained in manner satisfactory to the Secretary, by and at the expense of the State, but they shall be and remain at all times under the complete control of the United States. The State's authorized representative shall be allowed access at all times to said measuring and controlling devices or automatic gauges.

RECORD OF WATER DIVERTED

8. The State shall make full and complete written monthly reports as directed by the Secretary on forms to be supplied by the United States of all water delivered to or diverted by the State from Lake Mead. Such reports shall be made by the fifth day of the month immediately succeeding the month in which the water is diverted.

CHARGE FOR DELIVERY OF WATER

9. A charge of fifty cents (\$0.50) per acre-foot shall be made for the diversion by or delivery of water to the State hereunder during the Boulder Dam cost-repayment period, subject to reduction by the Secretary in the amount of the charge if studies show to his satisfaction

that the charge is too high. Thereafter, charges shall be on such basis as may hereafter be prescribed by the Congress. Charges shall be made against the State only for the number of acre-feet of water actually delivered to or diverted by it from Lake Mead.

BILLING AND PAYMENTS

10. The State shall pay monthly for all water delivered to it hereunder, or diverted by it from Lake Mead, in accordance with the charge in Article nine (9) hereof established. The United States will submit bills to the State by the tenth day of each month immediately following the month during which the water is delivered or diverted and payments shall be due on the first day of the month immediately succeeding. If such charges are not paid when due, an interest charge of one per centum (1%) of the amount unpaid shall be added thereto as liquidated damages and, thereafter, as further liquidated damages, an additional interest charge of one per centum (1%) of the principal sum unpaid shall be added on the first day of each succeeding calendar month until the amount due, including such interest, is paid in full.

REFUSAL OF WATER IN CASE OF DEFAULT

11. The United States reserves the right to refuse to deliver water to the State, or to permit water to be diverted by the State from Lake Mead, in the event of default for a period of more than twelve (12) months in any payment due or to become due to the United States under this contract.

INSPECTION BY THE UNITED STATES

12. The Secretary or his representatives shall at all times have the right of ingress to and egress from all works of the State for the purpose of inspection, repairs, and maintenance of works of the United States, and for all other proper purposes. In each contract made by the State for the redelivery of any part of the water agreed to be delivered to the State hereunder, it shall be provided, for the use and benefit of the United States, that the authorized representatives of the United States shall at all times have access to measuring and controlling devices, or automatic gauges, over the lands and rights of way of the contractee. The Secretary or his representatives shall also have free access at all reasonable times to the books and records of the State relating to the diversion and distribution of water delivered to or diverted by the State from Lake Mead with the right at any time during office hours to make copies of or from the same.

RULES AND REGULATIONS

13. There is reserved to the Secretary the right to prescribe and enforce rules and regulations governing the delivery and diversion of

water hereunder. Such rules and regulations may be modified, revised, and/or extended from time to time after notice to the State and opportunity for it to be heard, as may be deemed proper, necessary, or desirable by the Secretary to carry out the true intent and meaning of the law and of this contract, or amendments hereof, or to protect the interests of the United States. The State hereby agrees that in the operation and maintenance of its diversion works and conduits, all such rules and regulations will be fully adhered to.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

14. This contract is made upon the express condition and with the express understanding that all rights hereunder shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to an Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes", which compact was approved in section 13 (a) of the Boulder Canyon Project Act.

PRIORITY OF CLAIMS OF THE UNITED STATES

15. Claims of the United States arising out of this contract shall have priority over all others, secured or unsecured.

CONTRACT CONTINGENT UPON APPROPRIATIONS

16. This contract is subject to appropriations being made by Congress from time to time of money sufficient to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof, and to there being sufficient money available in the Colorado River Dam Fund for such purposes. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient money not being so appropriated, or on account of there not being sufficient money in the Colorado River Dam Fund for such purposes.

EFFECT OF WAIVER OF BREACH OF CONTRACT

17. All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States. The Waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any provision hereof, or of any other subsequent breach of any provision hereof.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

18. Nothing contained in this contract shall be construed as in any manner abridging, limiting, or depriving the United States or the State of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have.

TRANSFER OF INTEREST IN CONTRACT

19. No voluntary transfer of this contract, or of the rights of the State hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the State, whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all the conditions of the Boulder Canyon Project Act, and also subject to all the provisions and conditions of this contract to the same extent as though such successor or assign were the original contractor hereunder; provided, that the execution of a mortgage or trust deed, or judicial or trustee's sale made thereunder, shall not be deemed a voluntary transfer within the meaning of this Article.

NOTICES

20. (a) Any notice, demand, or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Director of Power, United States Bureau of Reclamation, Boulder City, Nevada, except where, by the terms hereof, the same is to be given or made to or upon the Secretary, in which event it shall be delivered, or mailed postage prepaid, to the Secretary, at Washington, D. C.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the State shall be delivered, or mailed postage prepaid, to the Secretary of the Colorado River Commission of Nevada, Carson City, Nevada.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

OFFICIALS NOT TO BENEFIT

21. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

UNCONTROLLABLE FORCES

22. Neither party shall be considered to be in default in respect to any obligation hereunder, if prevented from fulfilling such obligation by reason of uncontrollable forces, the term "uncontrollable forces" being deemed, for the purposes of this contract, to mean any cause beyond the control of the party affected, including but not limited to inadequacy of water, failure of facilities, flood, earthquake, storm, lightning, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority, which by exercise of due diligence and foresight, such party could not reasonably have been expected to avoid. Either party rendered unable to fulfill any obligation by reason of uncontrollable forces shall exercise due diligence to remove such inability with all reasonable dispatch.

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By ABE FORTAS,
Acting Secretary of the Interior.

STATE OF NEVADA, acting by and through
its Colorado River Commission,
By E. P. CARVILLE, *Chairman.*

Attest:

ALFRED MERRITT SMITH, *Secretary.*
By E. P. CARVILLE, *Chairman.*
COLORADO RIVER COMMISSION OF NEVADA,
[SEAL]

Attest:

ALFRED MERRITT SMITH, *Secretary.*

Ratified and approved this 21st day of April 1943.

E. P. CARVILLE,
Governor of the State of Nevada.
[GREAT SEAL OF THE STATE OF NEVADA]

Attest:

MALCOLM McEACHIN,
Secretary of State.

Approved as to form:

ALAN BIBLE,
Attorney General of Nevada.

[Resolution and certificate omitted.]

Appendix 1019

WATER: NEVADA
CONTRACT OF JANUARY 3, 1944

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT
ARIZONA-CALIFORNIA-NEVADA

SUPPLEMENTAL CONTRACT FOR DELIVERY OF WATER

1. THIS SUPPLEMENTAL CONTRACT made this 3rd day of January nineteen hundred forty-four, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, and acts amendatory thereof or supplementary thereto, between THE UNITED STATES OF AMERICA (hereinafter referred to as "United States"), acting for this purpose by Harold L. Ickes, Secretary of the Interior (hereinafter styled "Secretary"), and STATE OF NEVADA, a body politic and corporate, and its Colorado River Commission (said Commission acting in the name of the State, but as principal in its own behalf as well as in behalf of the State; the term State as used in this supplemental contract being deemed to be both the State of Nevada and its Colorado River Commission), acting in pursuance of an act of the Legislature of the State of Nevada, entitled "An Act creating a commission to be known as the Colorado river commission of Nevada, defining its powers and duties, and making an appropriation for the expenses thereof, and repealing all acts and parts of acts in conflict with this act," approved March 20, 1935 (Chapter 71, Stats. of Nevada, 1935);

Witnesseth:

EXPLANATORY RECITALS

2. Whereas, under date of March 30, 1942, the parties hereto entered into a contract providing, among other things, for the delivery of water to the State each year, from storage in Lake Mead, subject to the availability thereof for use in Nevada under the provisions of

the Colorado River Compact and the Boulder Canyon Project Act, so much water as may be necessary to supply the State a total quantity not to exceed One Hundred Thousand (100,000) acre-feet each calendar year, and it is now desired to amend said contract so as to provide for the delivery each calendar year of not to exceed an additional 200,000 acre-feet of water to the State;

3. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF WATER BY THE UNITED STATES

4. Article 5 (a) of the aforesaid contract of date March 30, 1942, is hereby amended to read as follows:

"Subject to the availability thereof for use in Nevada under the provisions of the Colorado River Compact and the Boulder Canyon Project Act, the United States shall, from storage in Lake Mead, deliver to the State each year at a point or points to be selected by the State and approved by the Secretary, so much water, including all other waters diverted for use within the State of Nevada from the Colorado River system, as may be necessary to supply the State a total quantity not to exceed Three Hundred Thousand (300,000) acre-feet each calendar year. Said water may be used only within the State of Nevada, exclusively for irrigation, household, stock, municipal, mining, milling, industrial, and other like purposes, but shall not be used for the generation of electric power."

MODIFICATION OF PRIOR CONTRACT

5. Except as expressly herein amended, the aforesaid contract of date March 30, 1942, shall be and remain in full force and effect.

EFFECTIVE DATE OF SUPPLEMENTAL CONTRACT

6. This supplemental contract shall be of full force and effect immediately upon its execution for and on behalf of the United States.

OFFICIALS NOT TO BENEFIT

7. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this supplemental contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By /s/ HAROLD L. ICKES,
Secretary of the Interior.

STATE OF NEVADA, acting by and through its
Colorado River Commission,
By /s/ E. P. CARVILLE, *Chairman.*

Attest:
/s/ ALFRED MERRITT SMITH, *Secretary.*

COLORADO RIVER COMMISSION OF NEVADA,
By /s/ E. P. CARVILLE, *Chairman.*

Attest:
/s/ ALFRED MERRITT SMITH, *Secretary.*

Ratified and approved this 3rd day of January 1944:

/s/ E. P. CARVILLE,
Governor of the State of Nevada.

Attest:
/s/ MALCOLM McEACHIN,
Secretary of State.

Approved as to form:
/s/ ALAN BIBLE,
Attorney General of Nevada.

Part XI

THE ALL-AMERICAN CANAL DOCUMENTS

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Appendix 1101

**ALL-AMERICAN CANAL:
EXTRACTS FROM THE MEXICAN CONCESSION
FOR THE ALAMO CANAL**

CONTRACT OF MAY 17, 1904, BETWEEN THE GOVERNMENT OF MEXICO
AND SOCIEDAD DE IRRIGACION Y TERRENOS DE LA BAJA CALIFORNIA,
S. A.

(Comprising 32 articles)

Contract entered into between the Citizen General D. Manuel Gonzales Cosio, secretary of state and of development, in representation of the executive government, and Lic. Ignacio Sepulveda, as representative of the Sociedad de Irrigacion y Terrenos de la Baja California, S. A., to carry the waters of the Colorado River through Mexican territory and for the use of said waters:

ARTICLE 1. The Sociedad de Irrigacion y Terrenos de la Baja California, S. A., is authorized to carry through the canal which it has built in Mexican territory, and through other canals that it may build, if convenient, water to an amount of two hundred and eighty-four cubic meters per second from the waters taken from the Colorado River and territory of the United States by the California Development Company and which waters this company has ceded to the Sociedad de Irrigacion y Terrenos de la Baja California, S. A. It is also authorized to carry to the lands of the United States the water with the exception of that mentioned in the following article:

ART. 2. From the water mentioned in the foregoing article, enough shall be used to irrigate the lands susceptible of irrigation in Lower California, with the water carried through the canal or canals, without in any case the amount of water used exceeding one-half of the volume of water passing through said canals.

Appendix 1102

**ALL-AMERICAN CANAL:
INJUNCTION OF AUGUST 1, 1916, AS MODIFIED
AUGUST 3, 1916, AGAINST CONSTRUCTION OF
IMPERIAL IRRIGATION DISTRICT'S DIVERSION
WEIR**

In the Superior Court of Yuma County, Arizona

No. 2429

YUMA COUNTY WATER USERS' ASSOCIATION, PLAINTIFFS,

vs.

IMPERIAL IRRIGATION DISTRICT ET AL., DEFENDANTS

MODIFIED RESTRAINING ORDER

In the above-entitled action, the parties hereto having agreed to the same, the temporary restraining order heretofore issued is hereby modified and made to read as follows:

On reading the verified amended complaint herein and the stipulation of the parties herein, it is hereby ordered as follows: Upon the defendants giving bond in the sum of \$100,000 for the faithful observance hereof.

That the defendants are permitted to construct their proposed dam or weir, but in the construction of the same they are hereby commanded, enjoined, and restrained from using any rock in the construction of the said weir, except such rock as may be loaded upon the cars with the steam shovel now in use by said defendants, or another of similar size, and from using any rock larger in size than one-half of one cubic yard; and they are further commanded to commence the removal of any piles or trestle placed by them in the said river not later than October 1, 1916, and thereafter to remove the same with diligence, and in all events to remove the same not later than November 1, 1916, and also thereafter to remove the other obstructions placed by the defendants in the said river at the time and in the manner directed by the project engineer of the Yuma project of the United States Reclamation Service, and in any event, shall remove the same prior to January 1, 1917.

Done in open court this 3d day of August 1916.

FRANK BAXTER,
Judge of said Court.

A587

Appendix 1103

ALL-AMERICAN CANAL:

**EXTRACT FROM LAGUNA DAM CONTRACT OF
OCTOBER 23, 1918: UNITED STATES AND IM-
PERIAL IRRIGATION DISTRICT**

9. For the right to use the Laguna Dam, the main canal, and appurtenant structures, and divert water, as herein provided, the district agrees to pay to the United States the sum of \$1,600,000 in twenty installments, the first of which shall become due and payable December 31, 1919, and subsequent installments annually thereafter. The first four installments shall each be 2 percent, the next two installments each 4 percent, and the next fourteen each 6 percent of the total amount. Upon failure of the district to make any such payment at the time and in the amount specified, then all rights under this contract shall be at an end, and all payments theretofore made shall become forfeited to the United States as liquidated damages; and as a further consideration for entering into this contract on the part of the United States, the district hereby releases and relinquishes any and all claims whatsoever for said moneys or any portion thereof so forfeited and paid as liquidated damages: *Provided*, That the Secretary of the Interior may in his discretion extend the time for any such payment upon the payment of 7 percent interest in advance.¹

¹ All other articles of this contract were cancelled, but this article was preserved by the contract between the same parties dated December 1, 1932 (Appendix 1106 herein).

Appendix 1104

**ALL-AMERICAN CANAL:
ACT AUTHORIZING EXPENDITURES FOR DIS-
TRIBUTION WORKS, ALL-AMERICAN CANAL**

(Act of June 26, 1947, Public Law 121, 80th Cong., 1st sess.)

[PUBLIC LAW 121—80TH CONGRESS]

[CHAPTER 153—1ST SESSION]

[H. R. 3348]

AN ACT To declare the policy of the United States with respect to the allocation of costs of construction of the Coachella Division of the All-American Canal irrigation project, California

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the language in the appropriation Act of July 1, 1946, of the Department of the Interior for the fiscal year ending June 30, 1947 (Public Law 478, Seventy-ninth Congress), for the Bureau of Reclamation under the caption:

“Boulder Canyon project (All-American Canal): For continuation of construction of a diversion dam, and main canal (and appurtenant structures including distribution and drainage systems) located entirely within the United States connecting the diversion dam with the Imperial and Coachella Valleys in California;”;

is hereby revised to read:

“Boulder Canyon project (All-American Canal): For continuation of construction of a diversion dam, and main canal (and appurtenant structures) located entirely within the United States connecting the diversion dam with the Imperial and Coachella Valleys in California, and distribution and drainage systems;”;

and this revision shall apply with equal force to all prior appropriation Acts for the Department of the Interior and to the Act for the fiscal year 1948 in which this same language appears for the Bureau of Reclamation.

Approved June 26, 1947.

A591

Appendix 1105

**ALL-AMERICAN CANAL:
REVENUES FROM MEXICO**

(Provisions of the Interior Department Appropriation Act for the fiscal year 1949; act of June 28, 1948; Public Law 841, 80th Cong., 2d Sess.)

Boulder Canyon project (All-American Canal): For continuation of construction of a diversion dam, main canal (and appurtenant structures) located entirely within the United States connecting the diversion dam with the Imperial and Coachella Valleys in California, and distribution and drainage systems; to acquire by proceedings in eminent domain, or otherwise, all lands, rights-of-way, and other property necessary for such purposes; and for incidental operations as authorized by the Boulder Canyon Project Act, approved December 21, 1928 (43 U. S. C., ch. 12A); to be immediately available, and to remain available until advanced to the Colorado River dam fund, \$4,000,000: *Provided*, That amounts heretofore or hereafter received from the Republic of Mexico for temporary water service by means of such works shall be applied against construction costs, including incidental operations, and shall be available for payment of the cost of such operations.

A593

Appendix 1106

**ALL-AMERICAN CANAL:
IMPERIAL IRRIGATION DISTRICT,
DECEMBER 1, 1932**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

**BOULDER CANYON PROJECT
ALL-AMERICAN CANAL**

**CONTRACT FOR CONSTRUCTION OF DIVERSION DAM, MAIN CANAL,
AND APPURTENANT STRUCTURES AND FOR DELIVERY OF WATER**

ARTICLE 1. THIS CONTRACT, made this 1st day of December nineteen hundred thirty-two, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Ray Lyman Wilbur, Secretary of the Interior, hereinafter styled the Secretary, and IMPERIAL IRRIGATION DISTRICT, an irrigation district created, organized and existing under and by virtue of the laws of the State of California, with its principal place of business at El Centro, Imperial County, California, hereinafter referred to as the District;

Witnesseth:

EXPLANATORY RECITALS

ART. 2. Whereas, for the purpose of controlling the floods, improving navigation, and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters for reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, subject to the terms of the Colorado River Compact, is authorized to construct, operate, and maintain a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water, and a main canal and appurtenant structures located entirely

within the United States connecting the Laguna Dam, or other suitable diversion dam, which the Secretary is also authorized to construct if deemed necessary or advisable by him upon engineering or economic considerations, with the Imperial and Coachella Valleys in California, the expenditures for said main canal and appurtenant structures to be reimbursable as provided in the reclamation law; and

ART. 3. Whereas, after full consideration of the advantages of both the Black Canyon and Boulder Canyon dam sites, the Secretary has determined upon Black Canyon as the site of the aforesaid dam, hereinafter styled the Hoover Dam, creating thereby a reservoir to be hereinafter styled the Boulder Canyon Reservoir; and

ART. 4. Whereas there are included within the boundaries of the District areas of private and public lands, and additional private and public lands will by appropriate proceedings be included within the District, and the District is desirous of entering into a contract for the construction of a suitable diversion dam and main canal and appurtenant structures, hereinafter respectively styled Imperial Dam and All-American Canal, located entirely within the United States connecting with the Imperial and Coachella Valleys, and for the delivery to the District of stored water from Boulder Canyon Reservoir; and

ART. 5. Whereas the Secretary has determined, upon engineering and economic considerations, that it is advisable to provide for the construction of such diversion dam and main canal and appurtenant structures, and has determined that the revenues provided for by this contract are adequate in his judgment to insure payment of all expenses of construction, operation, and maintenance of the said diversion dam, main canal, and appurtenant structures in the manner provided in the reclamation law;

ART. 6. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

CONSTRUCTION BY UNITED STATES

ART. 7. The United States will construct the Imperial Dam in the main stream of the Colorado River at the approximate location indicated on the map marked Exhibit A attached hereto and by this reference made a part hereof, and will also construct the All-American Canal and appurtenant structures to the Imperial and Coachella Valleys, the approximate location of said canal to be as shown on the aforesaid Exhibit A. Said canal shall be constructed to a designed capacity of fifteen thousand (15,000) cubic feet of water per second from and including the diversion and desilting works at said dam to Syphon Drop; thirteen thousand (13,000) cubic feet of water per second from Syphon Drop to Pilot Knob, and ten thousand (10,000) cubic feet of water per second westerly from Pilot Knob to Engineer

Station nineteen hundred and seven as said Engineer Station is indicated on said Exhibit A. Other portions of said canal shall be constructed with such capacities as the Secretary may conclusively determine to be necessary or advisable upon engineering or economic considerations to accomplish the ends contemplated by this contract; provided, however, that changes in capacities, locations, lengths and alignments, may be made during the progress of the work as may, in the opinion of the Secretary, whose opinion shall be final and binding upon the parties hereto, be expedient, economical, necessary or advisable, except the capacities above indicated from and including the diversion and desilting works at Imperial Dam to Engineer Station nineteen hundred and seven as hereinabove in this article referred to, which capacities may be changed only by mutual agreement between the Secretary and the District. The ultimate cost to the District of the aforesaid works shall in no event exceed the aggregate sum of thirty-eight million, five hundred thousand dollars (\$38,500,000). Such cost shall include all expenses of whatsoever kind heretofore or hereafter incurred by the United States from the Reclamation Fund or the Colorado River Dam Fund in connection with, growing out of, or resulting from the construction of said diversion dam, main canal and appurtenant structures, including but not limited to the cost of labor, materials, equipment, engineering, legal work, superintendence, administration, overhead, any and all costs arising from operation and maintenance of said dam, main canal and appurtenant structures prior to the time that said costs are assumed by the District, damage of all kinds and character and rights-of-way as hereinafter provided. The District hereby agrees to repay to the United States expenditures incurred on account of any and all damages due to the existence, operation or maintenance of the diversion dam and main canal, the incurrence of which increases expenditures by the United States beyond said sum of \$38,500,000. The United States will invoke all legal and valid reservations of rights-of-way under acts of Congress, or otherwise reserved or held by it, without cost to the District, except that the United States reserves the right where rights-of-way are thus acquired to reimburse the owners of such lands for the value of improvements which may be destroyed, and the District agrees that the United States may include such disbursements in the cost of the work to be performed hereunder. If rights-of-way are required over an existing project of the Bureau of Reclamation, such sum or sums as may be necessary to reimburse the United States on account of the construction charges allocated to irrigable areas absorbed in such rights-of-way shall also be considered as a part of and be included with other costs of the work to be performed hereunder. The District agrees to convey to the United States without cost, unencumbered fee simple title to any and all lands now owned by it, which, in the

opinion of the Secretary may be required for right-of-way purposes for the aforesaid diversion dam, main canal and appurtenant structures. Where rights-of-way within the State of California are required for the construction of works herein provided for, and such rights-of-way are not reserved to the United States under acts of Congress, or otherwise, or the lands over which such rights-of-way are required are not then owned by the District, the District agrees that it will, upon request of the Secretary, acquire title to such lands, and in turn convey unencumbered fee simple title thereto to the United States at the actual cost thereof to the District, subject to the approval of such cost by the Secretary.

ASSUMPTION OF OPERATION AND MAINTENANCE BY DISTRICT

ART. 8. Upon sixty (60) days' written notice from the Secretary of the completion of construction of the aforesaid diversion dam, main canal and appurtenant structures, or of any major unit thereof, useful to the District, as determined by the Secretary, whose determination thereof shall be final and binding upon the parties hereto, the District shall assume the care, operation, and maintenance of said diversion dam, main canal and appurtenant structures or major units thereof, including Laguna Dam, and thereafter the District shall at its own cost and without expense to the United States care for, operate, and maintain the same in such manner that such works shall remain in as good and efficient condition and of equal capacity for the diversion, transportation and distribution of water as when received from the United States, reasonable wear and damage by the elements excepted. Operation and maintenance of Imperial Dam by the District is a part of the obligation undertaken under this contract by the District for the transportation and delivery of water to public and Indian lands of the United States, and shall not interfere with the control of such dam by the United States. The United States may, from time to time, in the discretion of the Secretary, resume operation and maintenance of said dam upon not less than 60 days' written notice and require reassumption thereof by the District on like notice. During such times, after completion, as the dam is operated and maintained by the United States, the District shall on March 1 of each year advance to the United States the estimated cost of operation and maintenance for the following twelve months, upon estimates furnished therefor on or before September 1st next preceding. After the care, operation and maintenance of the aforesaid works have been assumed by the District, the District shall save the United States, its officers, agents and employees harmless as to any and all injury and damage to persons and property which may arise out of the care, operation and maintenance thereof. In the event the United States fails to complete the works herein contemplated and the District

fails to elect to make use of the works theretofore partially or wholly constructed, the District shall be fully relieved of any and all responsibility for any further operation and maintenance of the works theretofore taken over by the District for that purpose and thereupon the District shall no longer be responsible for said maintenance or operation or damage to person or property which may arise therefrom.

KEEPING DIVERSION DAM, MAIN CANAL AND APPURTENANT STRUCTURES
IN REPAIR

ART. 9. Except in case of emergency no substantial change in any of the works to be constructed by the United States and transferred to the District under the provisions hereof shall be made by the District without first having had and obtained the written consent of the Secretary and the Secretary's opinion as to whether any change in any such works is or is not substantial shall be conclusive and binding upon the parties hereto. The District shall promptly make any and all repairs to and replacements of all works constructed hereunder or transferred to it under the terms and conditions hereof, which, in the opinion of the Secretary, are deemed necessary for the proper operation and maintenance of such works. In case of neglect or failure of the District to make such repairs, the United States may, at its option, after reasonable notice to the District, cause such repairs to be made and charge the actual cost thereof, plus fifteen per centum (15%) to cover overhead and general expense, to the District. On or before September first of each calendar year the United States shall give written notice to the District of the amount expended by the United States for repairs under this article during the twelve-month period immediately preceding. Such cost, plus overhead and general expense as stated above, shall be repaid by the District on March first immediately succeeding.

AGREEMENT BY DISTRICT TO PAY FOR WORKS CONSTRUCTED BY THE
UNITED STATES

ART. 10. (a) The District agrees to pay the United States the actual cost, not exceeding thirty-eight million five hundred thousand dollars (\$38,500,000), incurred by the United States on account of the aforesaid works, subject, however, to the provisions of Article seven (7) hereof; provided, that should Congress fail to make necessary appropriations to complete the work herein provided for, then the Secretary may, at such reasonable time as he may consider advisable, after Congress shall have failed for five consecutive years to make the necessary appropriations which shall have been annually requested by the Secretary, give the District notice of the termination of work by the United States and furnish a statement of the amount

actually expended by the United States thereon. Upon the receipt of such notice by the District the District shall be given two years from and after such receipt of notice to elect whether it will utilize said works theretofore constructed, or some particular part thereof. Such election on the part of the District shall be expressed by resolution of the Board of Directors submitted to the electorate of the District for approval or rejection in the manner provided by law for submission of contracts with the United States. If the District elects not to utilize, or fails within said two-year period to elect to utilize said works or some portion thereof, then the District shall have no further rights therein and no obligations therefor. If the District elects to utilize said works or a portion thereof, then the reasonable value to the District of the works so utilized not exceeding the actual cost thereof to the United States shall be paid by the District under the terms of this contract; the first payment to be due and payable on the first day of March following the first day of September next succeeding the final determination of the reasonable value to the District of such works, in case no further work is done by the District. Should the District elect to complete the work contemplated by this contract, or some portion thereof, the first payment shall be due and payable on the first day of March following the first day of September next succeeding the date of final completion of the work by the District as determined by the Secretary. In determining the value of such works to the District there shall be taken into account, among other things, the method of financing required and cost of money, so that in no event shall all of the works contemplated by this contract cost the District more than they would have cost the District had they all been constructed by the United States under the terms of this contract. In the event of failure of the parties to agree as to the reasonable value to the District of the works which the District elects to use, the same shall be determined as provided in Article twenty-seven (27) hereof.

(b) The District as a whole is obligated to pay to the United States the full amount herein agreed upon regardless of the default or failure of any tract in the District, or of any landowner in the District, in the payment of the assessments levied by the District against such tract or landowner, and the District shall, when necessary, levy and collect appropriate assessments to make up for the default or delinquency of any tract of land or of any landowner in the payment of assessments, so that in any event, and regardless of any defaults or delinquencies in the payment of any assessment or assessments, the amounts due or to become due the United States shall be paid to the United States by the District when due.

(c) The District shall be divided into units by the Board of Directors of the District. Said units shall be named, commencing with Imperial

Unit, which unit shall comprise the lands of the District as of July 1, 1931. Each of the other units shall be as determined by the Board of Directors of the District and shall be described by legal description of the lands embraced therein or by designation of exterior boundaries or otherwise suitable for identification. Additional lands may be added to any unit herein or hereafter designated.

(d) The lands within each unit as hereinabove provided for will be benefited by the works to be constructed under this contract in the proportion that the area within such unit bears to the total area of the District and the costs of the said works, construction and otherwise, shall be apportioned to and paid by the lands within each unit in that proportion. In levying assessments or other charges to meet the cost of the said works, the Board of Directors of the District shall take into consideration payments to be made under this contract, with proper allowance for existing and anticipated delinquencies and redemptions, in order to provide sufficient funds to meet such payments as same become due and said board shall also take into account all sums expended or to be expended under the contract of October 23, 1918, for the right to connect with the Laguna Dam, the cost of all surveys and investigations and other expenditures properly chargeable as a part of the cost of the said works but which are not included as a part of the construction cost thereof reimbursable to the United States under this contract. While the cost of the said works and other expenditures above-mentioned shall be apportioned to the various units according to their respective areas, it is understood that the assessments or other charges to be imposed upon the lands within each respective unit shall be on an ad valorem or other basis as now or may hereafter be provided by law for assessment or imposition of other charges upon lands within irrigation districts. Rates of assessment or schedule in the various units from year to year or from time to time may be different or unequal as between the various units.

If the amount collected from the lands in any unit in any year shall be less than the amount apportioned to such unit for that year for such purpose, the deficit shall nevertheless be charged to that unit and any fund or funds of the District from which money may be taken to make up such deficit in order to provide for the payment in full of the obligations of the District, shall be entitled to reimbursement for such money from subsequent collections of unpaid assessments or charges in said unit or from the amounts received for the redemption of lands sold for delinquent assessments or charges or from subsequent or additional levies made on the lands within that unit to provide for such reimbursement.

(e) In the event lands now or hereafter within Coachella Valley County Water District, a county water district organized and existing under the laws of the State of California, are included within Imperial

Irrigation District, the said Coachella Valley County Water District shall have the privilege, at its option, if, as, and when authorized to do so by law, to pay to Imperial Irrigation District the total amount of any annual and/or special assessments levied by the last named District upon said lands or any installment of such assessments or any of the several individual assessments or installments thereof, in any case as the same become due and payable. The regular and lawful proceedings, rights and remedies of the last named District shall be in no manner impaired or affected by the provisions of this sub-article. The agreement in this subarticle contained is made expressly for the benefit of said Coachella Valley County Water District.

(f) If for any reason only a part of the works herein contemplated is constructed either by the United States or by the District, then the Board of Directors of the District shall, after public hearing, determine whether or not all of the lands in the District are benefited by the works constructed. If the Board shall find and declare that any certain lands within the District are not benefited by such construction, then no assessments shall thereafter be levied upon such lands for the purpose of meeting the obligations under this contract; and, for the purpose of this subarticle, no land shall be regarded as benefited by the construction of such works until the works contemplated by this contract as indicated on said Exhibit A from which water would reasonably be obtained for such lands shall have been constructed.

(g) The District shall have the right to refuse water service to any lands within the District which may at any time be delinquent in the payment of any assessment levied for the purpose of carrying out the provisions of this contract.

CHANGES IN DISTRICT BOUNDARIES

ART. 11. After the date of this contract no change shall be made in the boundaries of the District and the Board of Directors shall make no order changing the boundaries of the District, unless and until the Secretary shall assent to such change in writing, and such assent shall have been filed with the Board of Directors of the District; provided, however, that such assent is hereby given for the inclusion of all of the lands indicated on Exhibit A referred to in Article 34 hereof.

TERMS OF PAYMENT

ART. 12. The amount herein agreed to be paid to the United States shall be due and payable in not more than forty (40) annual installments commencing with the calendar year next succeeding the year when notice of completion of all work provided for herein is given to the District or under the provisions of Article 10 (a) hereof upon termination of work through failure of Congress to make necessary

appropriations therefor. The first five of such annual installments shall each be one per centum (1%) of the amount herein agreed to be paid to the United States; the next ten of such installments shall each be two per centum (2%) of the amount herein agreed to be paid to the United States, and the remainder of such annual installments shall each be three per centum (3%) of the amount herein agreed to be paid to the United States. The sums payable annually as set forth above shall be divided into two equal semiannual payments, payable on March first and September first of each year; provided, however, that if notice of the completion of work is given to the District subsequent to September first of any year the first semiannual installment of charges hereunder shall be due and payable on March first of the second succeeding year.

OPERATION AND MAINTENANCE COSTS

ART. 13. Each agency other than the District for which capacity is provided in the works to be constructed hereunder shall bear such proportionate part of the cost of operation and maintenance (including repairs and replacements) of the component parts thereof and of the Laguna Dam as may be determined by the Secretary to be equitable and just, but not less than an amount in proportion to the total amount as are the relative capacities provided in each component part for such agency and for all other agencies, including the District. Each agency shall advance to the District, on or before January first of each year, its proportionate share of the estimated cost for that year of operation and maintenance in accordance with a notice to be issued by the District, provided that payment shall in no event be due until thirty days after receipt of notice. Prior to March 1st of each year the District shall provide each agency with a statement showing in detail the costs for the previous year for operation and maintenance of the works on account of which such agency has made advances. Differences between actual costs and estimated costs shall be adjusted in next succeeding notices. Upon request of any agency both the advance notice of estimated costs and the subsequent statement of actual costs for each year shall be reviewed by the Secretary and his determination of proper charges shall be final. Such review shall not change the due date for advance payments as herein provided, and the cost of such review shall be borne equally by the requesting agency and the District. The District may, at its option, withhold the delivery of water from any agency until its proportionate share of the costs of operation and maintenance have been advanced or paid, as in this article provided.

POWER POSSIBILITIES

ART. 14. As one of the considerations for the partial termination of the contract of October 23, 1918, as provided for in Article sixteen (16) hereof, the power possibilities on the All-American Canal down to and including Syphon Drop with water carried for the benefit of the Yuma Project as provided for in Article fifteen (15) hereof, are hereby reserved to the United States. Subject to the foregoing provisions of this Article and the participation by other agencies as provided for in Article twenty-one (21) hereof, the District shall have the privilege at any time of utilizing by contract or otherwise such power possibilities as may exist upon said canal. The net proceeds as hereinafter defined in Article thirty-two (32) hereof and as determined by the Secretary for each calendar year from any such power development shall be paid into the Colorado River Dam Fund on March first of the next succeeding calendar year and be credited to the District on this contract until the District shall have paid thereby and/or otherwise an amount of money equivalent to that herein agreed to be paid to the United States. Thereafter such net power proceeds shall belong to the District. It is agreed that in the event the net power proceeds in any calendar year, creditable to the District, shall exceed the annual installment of charges payable under this contract during the then current calendar year, the excess of such net power proceeds shall be credited on the next succeeding unpaid installment to become due from the District under this contract.

DIVERSION AND DELIVERY OF WATER FOR YUMA PROJECT

ART. 15. As a further consideration for the partial termination of the contract of October 23, 1918, as provided in Article sixteen (16) hereof, the District hereby agrees to divert at the Imperial Dam, and to transport and deliver at Syphon Drop and/or such intermediate points as may be designated by the Secretary, the available water to which the Yuma Project (situated entirely within the United States and not exceeding in area 120,000 acres plus lands lying between the project levees and the Colorado River as such levees are located in 1931) is entitled, not exceeding two thousand (2,000) second-feet of water in the aggregate, or such part thereof as the Secretary may direct, for the use and benefit of said project, including the development of power at Syphon Drop, such water to be diverted, transported and delivered continuously insofar as reasonable diligence will permit, provided, however, that water shall not be diverted, transported or delivered for the Yuma Project when the Secretary notifies the District that said project for any reason may not be entitled thereto; provided, further, that the District shall divert, transport and deliver such water in excess of requirements for irriga-

tion or potable purposes, as determined by the Secretary, on the Yuma Project as so limited, only when such water is not required by the District for irrigation or potable purposes. The diversion, transportation and delivery of water for the Yuma Project as aforesaid shall be without expense to the United States or its successors in control of said project, as to capital investment required to provide facilities for such diversion and transportation of water, except such checks, turnouts and other structures required for delivery from said canal.

CONTRACT OF OCTOBER 23, 1918

ART. 16. That certain contract between the United States of America and the District, bearing date of October 23, 1918, providing for a connection with Laguna Dam, is hereby terminated, except as to the provisions of Article nine (9) thereof, and as one of the considerations for the partial termination of said contract by the United States, the District hereby promises and agrees to make full payment to the United States of all unpaid installments of charges as provided in Article nine (9) of said agreement, anything in said contract to the contrary notwithstanding. As an additional consideration for the partial termination of said contract of October 23, 1918, the District hereby promises and agrees to furnish to the United States or its successors in interest in the control, operation, and maintenance of the Yuma Project, from any power development on the All-American Canal at or near Pilot Knob, up to but not to exceed four thousand horsepower of electrical energy for use by the agency in charge of project operations for irrigation and drainage pumping purposes and necessary incidental use on said Yuma Project, such power to be furnished at cost (including overhead and general expense) plus ten per cent; provided, however, that the District shall not be required to furnish such power at or near Pilot Knob except at such times as all power feasible of development at Syphon Drop or developed elsewhere within a radius of 40 miles from the city of Yuma for the benefit of the Yuma project is being used for Project operations as in this article specified.

DELIVERY OF WATER BY UNITED STATES

ART. 17. The United States shall, from storage available in the reservoir created by Hoover Dam, deliver to the District each year at a point in the Colorado River immediately above Imperial Dam, so much water as may be necessary to supply the District a total quantity, including all other waters diverted for use within the District from the Colorado River, in the amounts and with priorities in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, as follows (subject to

availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act):

The waters of the Colorado River available for use within the State of California under the Colorado River Compact and the Boulder Canyon Project Act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said District as it now exists and upon lands between said District and the Colorado River, aggregating (within and without said District) a gross area of 104,500 acres, such waters as may be required by said lands.

SEC. 2. A second priority to Yuma Project of the United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

SEC. 3. A third priority (a) to Imperial Irrigation District, and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the "Lower Palo Verde Mesa," adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in Sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in Sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

SEC. 4. A fourth priority to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

SEC. 5. A fifth priority (e) to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the "Lower Palo Verde Mesa," adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation.

SEC. 8. So far as the rights of the allottees named above are concerned, the Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon

Reservoir accumulated to the individual credit of said District and/or said City (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reduced diversions by said District and/or said City; provided, that accumulations shall be subject to such conditions as to accumulation, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said District and/or said City and such users resulting therefrom.

SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said City and/or said County (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said City and/or said County; provided, that accumulations shall be subject to such conditions as to accumulations, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between the said City and/or said County and such users resulting therefrom.

SEC. 10. In no event shall the amounts allotted in this agreement to the Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusion of a supply for both said District and said City, and either or both may use said apportionments as may be agreed by and between said District and said City.

SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said City and said County, and either or both may use said apportionments as may be agreed by and between said City and said County.

SEC. 12. The priorities hereinbefore set forth shall be in no wise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties.

The Secretary reserves the right to, and the District agrees that he may, contract with any of the allottees above named in accordance with the above stated recommendation, or, in the event that such recommendation as to Palo Verde Irrigation District is superseded by an agreement between all the above allottees or by a final judicial determination, to contract with the Palo Verde Irrigation District in accordance with such agreement or determination; *Provided*, that priorities numbered fourth and fifth shall not thereby be disturbed.

As far as reasonable diligence will permit said water shall be delivered as ordered by the District, and as reasonably required for potable and irrigation purposes within the boundaries of the District

in the Imperial and Coachella Valleys in California. This contract is for permanent water services but is subject to the condition that Hoover Dam and Boulder Canyon Reservoir shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights in pursuance of Article VIII of the Colorado River Compact; and third, for power. This contract is made upon the express condition and with the express covenant that the District and the United States shall observe and be subject to, and controlled by said Colorado River Compact in the construction, management and operation of Hoover Dam, Imperial Dam, All-American Canal, and other works and the storage, diversion, delivery and use of water for the generation of power, irrigation, and other purposes. The United States reserves the right to temporarily discontinue or reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacements or installation of equipment and/or machinery at Hoover Dam, but as far as feasible the United States will give the District reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents and employees shall not be liable for damages when, for any reason whatsoever, suspension or reductions in delivery of water occur. This contract is without prejudice to any other or additional rights which the District may now have not inconsistent with the foregoing provisions of this article, or may hereafter acquire in or to the waters of the Colorado River. Nothing in this contract shall be construed to prevent the District from diverting water to the full capacity of the All-American Canal if and when water over and above the quantity apportioned to it hereunder is available, and no power development at Imperial and/or Laguna Dam shall be permitted to interfere with such diversion by the District, but, except as provided in Article twenty-one (21), water shall not be diverted, transported or carried by or through the works to be constructed hereunder for any agency other than the District, except by written consent of the Secretary.

MEASUREMENT OF WATER

ART. 18. The water which the District receives under the apportionment as provided in Article seventeen (17) hereof shall be measured at such point or points on the canal as may be designated by the Secretary. Measuring and controlling devices shall be furnished and installed by the United States as a part of the work provided for herein, but shall be operated and maintained by and at the expense of the District. They shall be and remain at all times under the complete control of the United States, whose authorized representatives may at all times have access to them over the lands and rights-of-way of the District.

RECORD OF WATER DIVERTED

ART. 19. The District shall make full and complete written reports as directed by the Secretary, on forms to be supplied by the United States, of all water diverted from the Colorado River, and the disposition thereof. The records and data from which such reports are made shall be accessible to the United States on demand of the Secretary.

REFUSAL OF WATER IN CASE OF DEFAULT

ART. 20. The United States reserves the right to refuse to deliver water to the District in the event of default for a period of more than twelve (12) months in any payment due the United States under this contract, or, in the discretion of the Secretary to reduce deliveries in such proportion as the amount in default by the District bears to the total amount due. It is understood, however, that the provisions of this article shall not relieve the District of its obligation to divert, transport and deliver water for the use and benefit of the Yuma Project as herein elsewhere provided, nor shall it relieve the District of its obligation hereunder to divert, transport and deliver water for the use and benefit of other agencies with whom the United States may contract for the diversion, transportation and delivery of water through or by the works to be constructed under the terms hereof. The United States further reserves the right to forthwith assume control of all or any part of the works to be constructed hereunder and to care for, operate and maintain the same, so long as the Secretary deems necessary or advisable, if, in his opinion, which shall be final and binding upon the parties hereto, the District does not carry out the terms and conditions of this contract to their full extent and meaning. In such event, the District's pro rata share of the actual cost of such care, operation and maintenance by the United States shall be repaid to the United States, plus fifteen per centum (15%) to cover overhead and general expense, on March first of each year immediately succeeding the calendar year during which the works to be constructed hereunder are operated and maintained by the United States. Nothing herein contained shall relieve the District of the obligation to pay in any event all installments and penalties provided in this contract.

USE OF WORKS BY THE UNITED STATES AND OTHERS

ART. 21. The United States also reserves the right to, and the District agrees that it may, at any time prior to the transfer of constructed works to the District for operation and maintenance, increase the capacity of the said works and contract for such increased capacity with other agencies for the delivery of water for use in the United

States; provided, however, that such other agencies shall not thereby be entitled to participate in power development on said All-American Canal, except at points where and to the extent that the water diverted and/or carried for them contributes to the development of power. In the event other agencies thus contract with the United States, each of such agencies shall assume such proportion of the total cost of said works to be used jointly by such agency and the District, including Laguna Dam, as the Secretary may determine to be equitable and just but not less than the proportion that the capacity provided for such agency in such works bears to the total capacity thereof (except in that part thereof above Syphon Drop including Laguna Dam, in which part the proportion which such other agency shall assume shall be not less than the proportion that the capacity provided for such agency therein bears to the total capacity thereof less the capacity to be provided hereunder without cost to and for the Yuma Project) and the District's financial obligations under this contract shall be adjusted accordingly. In no event shall construction costs chargeable to the District be increased by reason of additional capacity being provided for any such agency or agencies or contract or contracts having been made with same. Any such agency thus contracting shall also be required to reimburse the District in such amounts and at such times as the Secretary may determine to be equitable and just for payments theretofore made by the District for the right to use Laguna Dam.

TITLE TO REMAIN IN THE UNITED STATES

ART. 22. Title to the aforesaid Imperial Dam and All-American Canal to be constructed by the United States under the terms and conditions hereof, shall be and remain in the United States notwithstanding transfer of the care, operation, and maintenance thereof to the District; provided, however, that the Secretary may, in his discretion, when repayments to the United States of all moneys advanced shall have been made, transfer the title to said main canal and appurtenant structures, except the diversion dam and the main canal and appurtenant structures down to and including Syphon Drop, to the District or other agencies of the United States having a beneficial interest therein in proportion to their respective capital investments under such form or organization as may be acceptable to him.

ASSESSMENT OF PUBLIC LAND

ART. 23. The following lands are hereby designated as subject to the provisions of the act of August 11, 1916 (39 Stat. 506), and the act of May 15, 1922 (42 Stat. 541):

(a) All unentered public lands and entered lands for which no final certificate has been issued, situate within the District at the date

hereof; and when included within the District, unentered public lands and entered lands for which no final certificate has been issued, hereafter to be included within the District pursuant to this contract, all described in a statement marked "Exhibit B" attached hereto and by reference thereto made a part hereof; and

(b) Unentered public lands and entered lands for which no final certificate has been issued not so described but hereafter annexed to the District, upon the Secretary's consenting, in the case of such lands hereafter annexed to the District, to assessment hereunder of such added lands, which consent will be requested by resolution of the Board of Directors of the District and will be manifested by letter filed with the District, a copy of such letter to be filed also with the General Land Office, and a copy with the proper local Land Office.

Within a reasonable time, to be determined by the Secretary, from the date water is available for and can be delivered to any public lands within the boundaries of the District, such lands shall be opened to entry.

RULES AND REGULATIONS

ART. 24. There is reserved to the Secretary the right to prescribe and enforce rules and regulations not inconsistent with this contract, governing the diversion and delivery of water hereunder to the District and to other contractors. Such rules and regulations may be modified, revised and/or extended from time to time after notice to the District and opportunity for it to be heard, as may be deemed proper, necessary or desirable by the Secretary to carry out the true intent and meaning of the law and of this contract, or amendments thereof, or to protect the interests of the United States. The District hereby agrees that in the operation and maintenance of the Imperial Dam and All-American Canal, all such rules and regulations will be fully adhered to.

INSPECTION BY THE UNITED STATES

ART. 25. The Secretary may cause to be made from time to time a reasonable inspection of the works constructed by the United States under the terms hereof to the end that he may ascertain whether the terms of this contract are being satisfactorily executed by the District. The actual expense of such inspection in any calendar year, as found by the Secretary, shall be paid by the District to the United States on March first of each year immediately following the year in which such inspection is made, and upon statement to be furnished by the Secretary. The Secretary or his representative shall at all times have the right of ingress to and egress from all works of the District for the purpose of inspection, repairs, and maintenance of works of the United States, and for all other purposes.

ACCESS TO BOOKS AND RECORDS

ART. 26. The officials or designated representatives of the District shall have full and free access to the books and records of the United States, so far as they relate to the matters covered by this contract, with the right at any time during office hours to make copies of and from the same; and the Secretary shall have the same right in respect of the books and records of the District.

DISPUTES OR DISAGREEMENTS

ART. 27. Disputes or disagreements as to the interpretation or performance of the provisions of this contract, except as otherwise provided herein, shall be determined either by arbitration or court proceedings, the Secretary being authorized to act for the United States in such proceedings. Whenever a controversy arises out of this contract, and the parties hereto agree to submit the matter to arbitration, the District shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within thirty (30) days after their first meeting, such arbitrators not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

INTEREST AND PENALTIES

ART. 28. No interest shall be charged on any installments of charges due from the District hereunder except that on all such installments or any part thereof, which may remain unpaid by the District to the United States after the same become due, there shall be added to the amount unpaid a penalty of one-half of one per centum ($\frac{1}{2}\%$) and a like penalty of one-half of one per centum ($\frac{1}{2}\%$) of the amount unpaid shall be added on the first day of each month thereafter so long as such default shall continue.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

ART. 29. This contract is made upon the express condition and with the express understanding that all rights based upon this contract shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment

of the waters of the Colorado River, and for other purposes," which compact was approved by the Boulder Canyon Project Act.

APPLICATION OF RECLAMATION LAW

ART. 30. Except as provided by the Boulder Canyon Project Act, the reclamation law shall govern the construction, operation, and maintenance of the works to be constructed hereunder.

CONTRACT TO BE AUTHORIZED BY ELECTION AND CONFIRMED BY COURT

ART. 31. The execution of this contract by the District shall be authorized by the qualified electors of the District at an election held for that purpose. Thereafter, without delay, the District shall prosecute to judgment proceedings in court for a judicial confirmation of the authorization and validity of this contract. The United States shall not be in any manner bound under the terms and conditions of this contract unless and until a confirmatory final judgment in such proceedings shall have been rendered, including final decision, or pending appellate action if ground for appeal be laid. The District shall without delay and at its own cost and expense furnish the United States for its files, copies of all proceedings relating to the election upon this contract and the confirmation proceedings in connection therewith, which said copies shall be properly certified by the Clerk of the Court in which confirmatory judgment is obtained.

METHOD OF DETERMINING NET POWER PROCEEDS

ART. 32. In determining the net proceeds for each calendar year from any power development on the All-American Canal, to be paid into the Colorado River Dam Fund as provided in Article fourteen (14) hereof, there shall be taken into consideration all items of cost of production of power, including but not necessarily limited to amortization of and interest on capital investment in power development, replacements, improvements, and operation and maintenance, if any. Any other proper factor of cost not here expressly enumerated may be taken into account in determining the net proceeds.

CONTINGENT UPON APPROPRIATIONS

ART. 33. This contract is subject to appropriations being made by Congress from year to year of moneys sufficient to do the work provided for herein, and to there being sufficient moneys available in the Colorado River Dam Fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient moneys not being so appropriated nor on account of there

not being sufficient moneys in the Colorado River Dam Fund to permit of said allotments. If more than three years elapse after this contract becomes effective and before appropriations are available to permit the United States to make expenditures hereunder, the District may, at its option, upon giving sixty (60) days' written notice to the Secretary, cancel this contract. Such option shall be expressed by vote of the electors of the District with the same formalities as required for the authorization of contracts with the United States.

INCLUSION OF LANDS

ART. 34. (a) In this article where the words "area to be included" are used such words shall be understood to mean those certain areas shown on Exhibit A and bounded by the lines indicated thereon as "Boundary of Additional Areas in Proposed Enlarged Imperial Irrigation District."

(b) The District agrees to change its boundaries within a reasonable time after the execution of this contract, in the manner provided by law, so as to include within the District the public lands of the United States in Imperial County lying south of the northerly boundary line of Township eleven (11) South of the San Bernardino Base Line, and within the area to be included.

(c) The District further agrees to change its boundaries, if lawful petition or petitions therefor be presented to its Board of Directors prior to the first day of January 1940, so as to include within the District any privately owned and/or entered lands for which final certificate has not been issued, in Imperial County, lying south of the northerly boundary line of Township eleven (11) South of the San Bernardino Base Line, and within the area to be included.

(d) The District further agrees to change its boundaries, in the manner provided by law, so as to include within the District the lands lying north of the northerly boundary line of Township eleven (11) South of the San Bernardino Base Line, and within the area to be included, if lawful petition or petitions sufficient in all respects for such inclusion be presented to its Board of Directors at any time prior to the expiration of thirty days from and after the date on which a confirmatory judgment, as required by Article 31 hereof, declaring this contract in all respects valid and duly authorized, shall have become final; provided, however, that the District shall not change its boundaries so as to include any of said lands lying north of the northerly boundary line of said Township eleven (11) South, unless the said petition or petitions so filed shall be sufficient to lawfully include in the aggregate not less than ninety per centum (90%) (the areas to be approved by the Secretary) of the said lands, exclusive of the Dos Palmas area and exclusive of Indian lands and public lands

of the United States. Within a reasonable time after the inclusion of such lands pursuant to said petition or petitions the District further agrees to change its boundaries, in the manner provided by law, so as to also include within the District the public lands of the United States within the area to be included and lying north of the northerly boundary line of said Township eleven (11) South.

(e) Whenever any of the lands within the area to be included are included within the District the inclusion thereof shall be made upon conditions substantially as hereinafter contained (filling blank spaces with appropriate unit names as may be required and other proper designations), and the Secretary, on behalf of the United States, hereby consents to such inclusion and conditions, which conditions are as follows:

CONDITION No. 1

DEFINITIONS

In the following conditions, the word "District" shall mean Imperial Irrigation District; the word "Board" shall mean the Board of Directors of Imperial Irrigation District; the words "All-American Canal Contract" shall mean that certain contract between the United States of America by Ray Lyman Wilbur, Secretary of the Interior, and Imperial Irrigation District, dated _____,

(date of this contract)

and entitled "Contract for construction of diversion dam, main canal and appurtenant structures and for Delivery of Water," authorized by the electors of Imperial Irrigation District at an election held _____;

(date of this contract authorized)

and the words "distribution system" shall mean the secondary main canal and lateral system or systems, including all canals, pipe lines, structures, pumping plants, machinery and incidental works necessary or convenient under the rules and regulations of Imperial Irrigation District for delivery of water for irrigation and domestic purposes from the All-American Canal, as the same is shown on Exhibit "A" attached to and made a part of said All-American Canal Contract, to lands in _____ Unit as such unit is hereinafter defined.

(Name)

CONDITION No. 2

DIVISION INTO UNITS

For the purposes of these conditions and in compliance with the terms of the All-American Canal Contract, the District shall be divided into units, commencing with Imperial Unit, which unit shall comprise the lands within the District as of July 1, 1931, and such other lands as may at any time or from time to time be added thereto in the discretion of the Board.

----- Unit shall comprise -----
(name)

(here shall follow description or other designation of the unit involved as provided by Article 10 (c) of the All-American Canal Contract)

CONDITION No. 3

ALL-AMERICAN CANAL CONTRACT

The lands within Unit shall be, in all respects, bound by
 (name)
 all of the terms and conditions of the All-American Canal Contract and particu-
 larly by Article 10 thereof, and shall pay, as a unit obligation, the several amounts
 and in the manner and at the times provided for in said contract, as the Board
 may determine; provided, that said lands in Unit shall
 (name)
 pay to the District, as a unit obligation, that proportion of the total sum paid by
 the District to the United States under that certain contract of October 23, 1918,
 between the United States and the District for the right to connect with Laguna
 Dam, prior to the payment of the first installment on said contract of October 23,
 1918, for which said land shall be assessed, that the total area of
 (name)
 Unit bears to the total area of the District at the date notice of completion of all
 work provided for in the All-American Canal Contract shall be given, pursuant to
 Article 12 thereof, to the District. Said sum shall be divided into ten annual
 installments, as nearly equal as may be practicable, and paid, commencing with
 the calendar year next succeeding the calendar year when such notice of comple-
 tion shall be so given.

CONDITION No. 4

DISTRIBUTION SYSTEM

The lands within Unit shall pay, as a unit obligation, the
 (name)
 total capital cost of any distribution system which may be constructed by or
 under authority of the District, to serve the lands within said
 (name)
 Unit or any part thereof. When said distribution system, or any part thereof, is
 constructed, or an obligation therefor is incurred, said lands shall pay annually,
 such sum or sums as may be necessary to meet the then current obligation therefor,
 whether for principal or interest or both, or otherwise. Said distribution system
 shall at all times be and remain the exclusive property of the District unless the
 District shall provide otherwise, in the discretion of the Board. When funds for
 the construction of said distribution system are made available, the District shall
 construct or authorize the same to be constructed, as the Board may determine.

CONDITION No. 5

PUMPING COSTS

The Board shall provide by rule for the payment by the lands served of the cost
 of power required to pump water to or for the use of such lands.

CONDITION No. 6

CHARGES TO BE PART OF ASSESSMENT

Any and all charges against or upon the lands within
 (name)
 Unit provided for by the foregoing conditions unless otherwise collected from the
 lands within Unit shall be a part of, but in addition to,
 (name)
 the annual assessment upon the said lands for other District purposes and payable
 in installments accordingly, and shall constitute an additional annual charge upon

the land, and the Board shall levy such assessment upon the said lands upon an ad valorem or other basis as now or hereafter provided by law, in an amount or in amounts sufficient to raise the several sums provided for from the said lands within ----- Unit; provided, that for the protection of the in-

(name)

terests and security of the United States, pending completion of construction of the All-American Canal to such extent that water is available in said canal for use in ----- Unit, the annual assessment upon the lands within said

(name)

unit for District purposes shall be limited to raise only the just proportion chargeable to said unit for expenditures connected with or applying to the All-American Canal and/or arising from expenditures made in or on behalf of said unit.

(f) In the event petition or petitions for inclusion, pursuant to this article, of any privately owned lands or entered lands for which no final certificate has at the time been issued, lying south of the northerly boundary line of Township eleven (11) South of the San Bernardino Base Line, and within the area to be included, be presented subsequent to the expiration of thirty days from and after the date on which a confirmatory judgment, as required by Article 31 hereof, declaring this contract in all respects valid and duly authorized, shall have become final, then the District may in the discretion of the Board of Directors require as a condition precedent to the granting of said petition or petitions and in addition to the other conditions above named, that the petitioners shall pay to the District such respective sums as nearly as the same can be estimated (the amounts to be determined by the Board) as the holders of title or evidence of title to the several parcels of land involved in said petition or petitions and their grantors would have been required to pay to the District as assessments had such lands been included within the District at the expiration of said 30-day period, or such portion of said sum as the Board of Directors may at the time determine. The provisions of this sub-article shall also apply to all lands lying north of the northerly boundary line of said Township eleven (11) South, and within the area to be included, provided the ninety per centum (90%) petition required by sub-article (d) of this article is filed prior to the expiration of said 30-day period.

(g) In the event the petition or petitions for inclusion of the said lands lying north of the northerly boundary line of said Township eleven (11) South of the San Bernardino Base Line, as in sub-article (d) above provided are not made and filed with the Board of Directors of the District prior to the expiration of thirty days from and after the date on which a confirmatory judgment, as required by Article 31 hereof, declaring this contract in all respects valid and duly authorized, shall have become final, as hereinabove provided, then said lands shall not thereafter be included within the District under the provisions of this contract and the works referred to in this contract north of the northerly boundary line of said Township eleven (11) South of the San Bernardino Base Line shall not be constructed under this con-

tract and the District shall be relieved from all responsibility therefor, anything in this contract to the contrary notwithstanding, and the capacities in the works to be constructed under this contract, shall be reduced accordingly.

(h) Nothing contained in this contract shall impair any right or remedy of any person entitled to object or protest against the inclusion within the District of any particular tract or tracts of land, or the conditions imposed by the Board of Directors of the District on the inclusion of any particular tract or tracts, nor impair the power of the Board to hear and determine any such objections or protests, but if in the opinion of the Secretary such determination by the Board substantially impairs the interests of, or security otherwise available to, the United States, under this contract, then and in such event the United States shall be under no obligation to proceed further under this contract. In the event any petition or petitions be filed for the inclusion within the District of any lands within the area to be included and, after the conditions set out in sub-article (e) of this article, or conditions less burdensome, are imposed thereon, a sufficient majority statement or statements in writing be filed objecting to the inclusion of such lands with the conditions imposed thereon, so that the Board of Directors is required to dismiss such petition or petitions, then it shall be regarded as if such petition or petitions had not been filed.

PRIORITY OF CLAIMS OF THE UNITED STATES

ART. 35. Claims of the United States arising out of this contract shall have priority over all others, secured and unsecured.

RIGHTS RESERVED UNDER SECTION 3737 REVISED STATUTES

ART. 36. All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

ART. 37. Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States or the District of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any other provision hereof or of a subsequent breach of such provision.

INTEREST IN CONTRACT NOT TRANSFERABLE

ART. 38. No interest in this contract is transferable by the District to any other party, and any such attempted transfer shall cause this contract to become subject to annulment at the option of the United States.

MEMBER OF CONGRESS CLAUSE

ART. 39. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR,
Secretary of the Interior.

Attest:

NORTHCUTT ELY,
ELWOOD MEAD.

IMPERIAL IRRIGATION DISTRICT,
By JOHN L. DuBOIS,
President.

Attest:

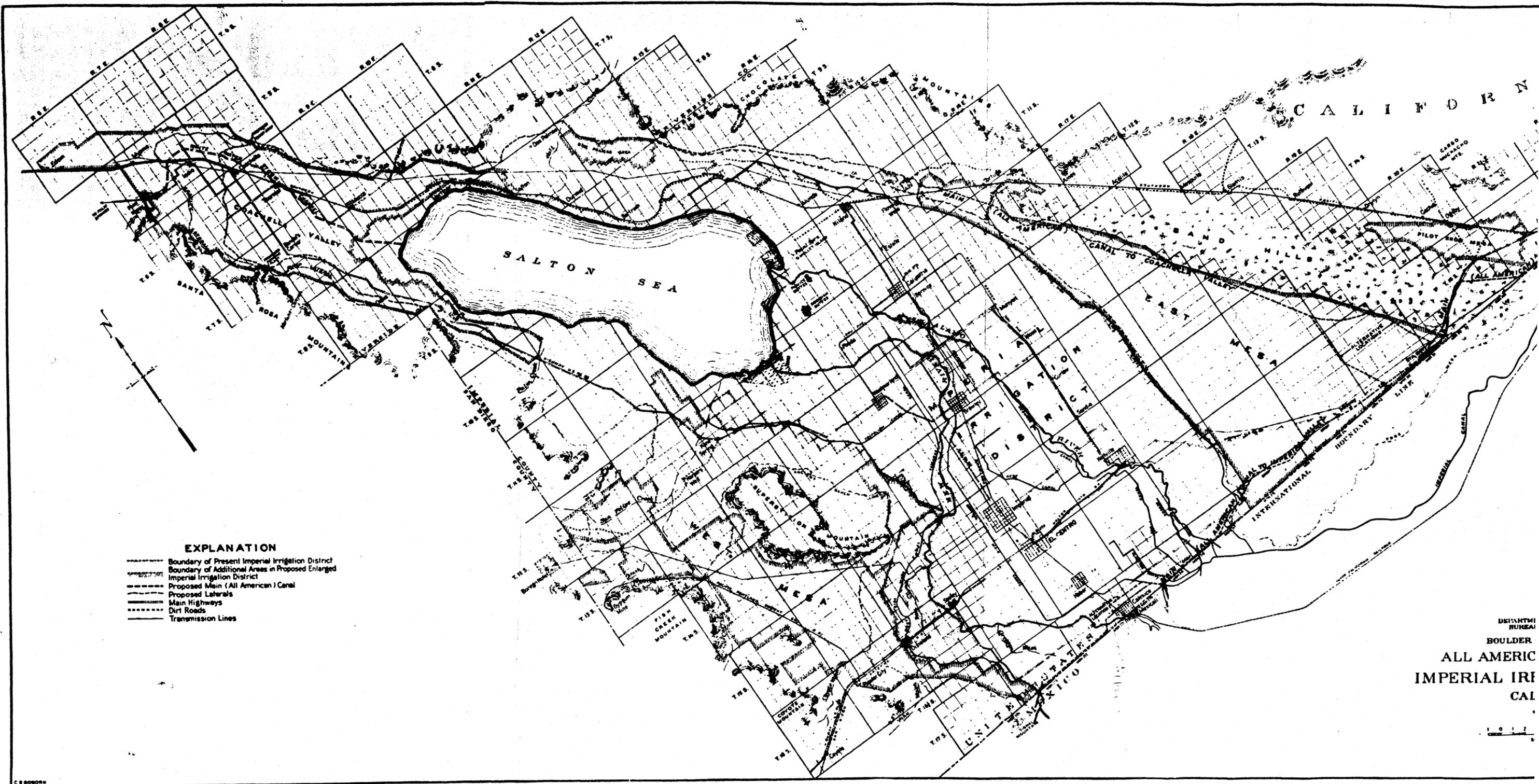
[SEAL]

F. H. McIVER, *Secretary.*

EXHIBIT B

UNENTERED PUBLIC LANDS AND ENTERED LANDS FOR WHICH NO FINAL
CERTIFICATE HAS BEEN ISSUED

(Omitted because of limitations of space. Comprises legal descriptions of lands of these categories shown on map, Exhibit A, annexed.)

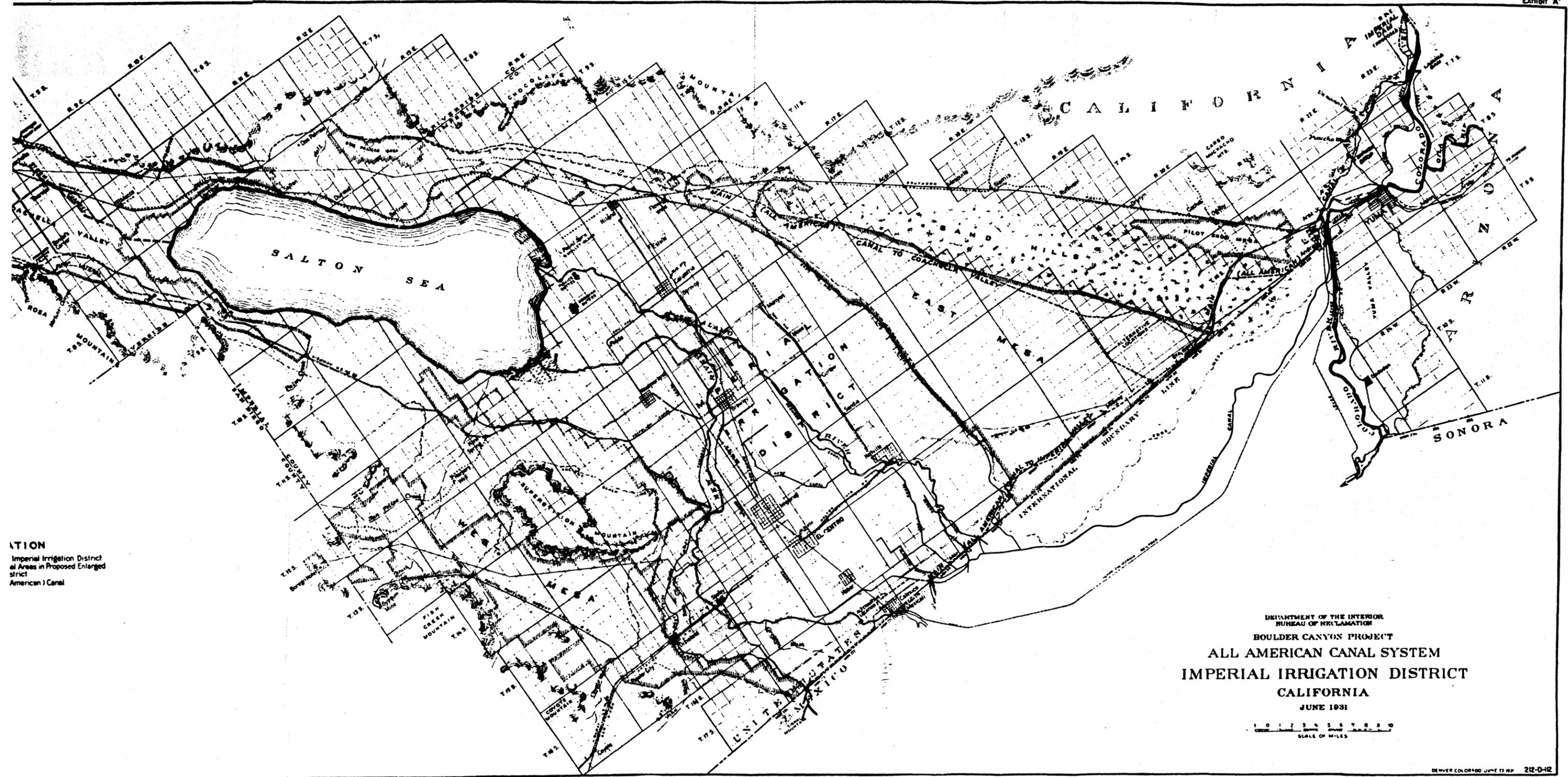


EXPLANATION

- Boundary of Present Imperial Irrigation District
- Boundary of Additional Areas in Proposed Enlarged Imperial Irrigation District
- Proposed Main (All American) Canal
- Proposed Laterals
- Main Highways
- Dirt Roads
- Transmission Lines

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 BOULDER, COLORADO
 ALL AMERICAN
 IMPERIAL IRRIGATION DISTRICT
 CALIFORNIA

1912



NOTATION
 Imperial Irrigation District
 Areas in Proposed Enlarged District
 American Canal

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 BOULDER CANYON PROJECT
 ALL AMERICAN CANAL SYSTEM
 IMPERIAL IRRIGATION DISTRICT
 CALIFORNIA
 JUNE 1931

1 0 1 2 3 4 5 6 7 8 9 0
 SCALE OF MILES

Appendix 1107

ALL-AMERICAN CANAL:

**AGREEMENT OF COMPROMISE, FEBRUARY 14,
1934, BETWEEN IMPERIAL IRRIGATION DIS-
TRICT AND COACHELLA VALLEY COUNTY
WATER DISTRICT**

AGREEMENT OF COMPROMISE

SECTION 1. THIS AGREEMENT, made the 14th day of February 1934, by and between IMPERIAL IRRIGATION DISTRICT, an irrigation district organized and existing under and by virtue of the California Irrigation District Act of the State of California and acts amendatory thereof or supplementary thereto, with its principal office at El Centro, Imperial County, California, said District being hereinafter sometimes styled "Imperial District," and COACHELLA VALLEY COUNTY WATER DISTRICT, a County Water District organized and existing under and by virtue of the County Water District Act of the State of California and acts amendatory thereof or supplementary thereto, and having its office at Coachella, Riverside County, California, said District being hereinafter sometimes styled "Coachella District,"

Witnesseth:

RECITALS

SEC. 2. That, whereas, pursuant to the terms of the Boulder Canyon Project Act, approved December 21, 1928 (45 Stat. 1057) the Secretary of the Interior is authorized to construct a main canal and appurtenant structures located entirely within the United States, connecting Laguna Dam or other suitable diversion dam, which said Secretary is authorized to construct, with Imperial and Coachella Valleys in California; and

SEC. 3. Whereas the Secretary of the Interior has determined upon engineering and economic considerations to construct a new diversion dam on the Colorado River approximately four and one-half miles above Laguna Dam, which new diversion dam has heretofore been and is designated Imperial Dam; and

SEC. 4. Whereas, pursuant to the Boulder Canyon Project Act, a contract, dated December 1, 1932, hereinafter styled "Imperial Contract," has heretofore been executed between the United States and

Imperial District for the construction of said Imperial Dam, main canal and appurtenant structures, which said main canal and appurtenant structures are hereinafter styled "All-American Canal," and for the repayment of the cost thereof as provided by law; and

SEC. 5. Whereas, by said Imperial Contract, certain lands in Coachella Valley, and within Coachella District and lands adjacent to said District may, by petition, be included within the boundaries of Imperial District, and if said lands are not so included, then the works and capacity to serve said lands shall not be constructed under said contract; and

SEC. 6. Whereas said Coachella District through its Board of Directors has determined that said lands will not become a part of Imperial District pursuant to said contract, and that Coachella District desires to obtain a contract, hereinafter styled "Coachella Contract," with the United States, separately from Imperial District, for capacity in said Imperial Dam and All-American Canal to be provided for the benefit of said Coachella District, in addition to the capacity therein provided for Imperial District, and to pay the proper cost of such capacity; and

SEC. 7. Whereas under date of August 18, 1931, an agreement was made between certain interested agencies in California, including the parties to this agreement, for the apportionment of the Colorado River water available for use within the State of California under the Colorado River Compact and the Boulder Canyon Project Act, a portion of which agreement is set out in Article 17 of said Imperial Contract as being a recommendation of the Chief of the Division of Water Resources of the State of California; and

SEC. 8. Whereas water for irrigation and domestic uses in the areas to be served under or from the All-American Canal in Imperial and Coachella Valleys will be supplied pursuant to the third and sixth priorities of said recommendation of the Chief of the Division of Water Resources of the State of California; and

SEC. 9. Whereas Imperial District has certain prior rights to the use of the waters of the Colorado River, and the extent of said rights is in dispute as between the parties hereto, and each of said parties makes certain claims as to the use of said waters; and

SEC. 10. Whereas the parties hereto, upon their respective contracts with the United States becoming effective and said All-American Canal being constructed, will respectively have certain power possibilities on the All-American Canal, which it is desired to have developed, operated and controlled as a unified project; and

SEC. 11. Whereas controversy has arisen and now exists between the parties hereto as to the extent and relation of their respective present and future rights to water and power on and from said All-

American Canal, which controversy it is desired to have compromised and settled by this agreement;

Now, therefore, in consideration of the premises and the mutual obligations and covenants of the parties hereto and as a compromise and settlement of their said respective rights, privileges and claims respecting the matters herein contained, it is agreed:

COACHELLA CONTRACT

SEC. 12. Coachella District will forthwith apply to the proper governmental authorities for a contract between itself and the United States for the construction by the United States of the portion of the Imperial Dam and All-American Canal which will serve said District, and for the payment of its proper proportion of construction and other costs and for delivery of water; said contract to be in harmony with the provisions of the Imperial Contract and this agreement. The draft of said proposed Coachella Contract attached hereto and marked "Annex A" has been examined by Imperial District and the substance of said draft is approved by the parties hereto. Imperial District agrees that said draft, or such other draft as may be acceptable to the United States and in harmony with the provisions of the Imperial Contract and of this agreement, may be executed between the Coachella District and the United States. Imperial District will actively assist Coachella District in obtaining execution of such contract by the United States.

VALIDATION ACTION

SEC. 13. That forthwith upon the execution of this agreement Coachella District will cause to be dismissed on behalf of itself and A. B. Cliff, John H. Colbert, R. C. Egnew, J. C. Jones, and Washington McIntyre, with the stipulation that remittitur issue forthwith and that each party pay his or its own costs their appeal now pending in the Supreme Court of California, in that certain action entitled: "In the Matter of the validation of a Contract Dated Dec. 1, 1932, Entitled 'Contract for Construction of Diversion Dam, Main Canal, and Appurtenant Structures, and for Delivery of Water,' between the United States of America and Imperial Irrigation District. *John L. Dubois et al., Plaintiffs and Respondents, vs. All Persons, Defendants; Coachella Valley County Water District et al., Defendants and Appellants,*" being L. A. No. 14487, and this agreement shall not become effective for any purpose unless and until said appeal is so dismissed on behalf of all of said parties within ten (10) days from the execution hereof. Coachella District will actively assist in bringing said action to an early and final conclusion to the end that the present judgment be sustained.

GENERAL PROVISIONS

SEC. 14. The provisions of this agreement hereinafter set forth shall be effective and binding upon the parties hereto only in the event that the Coachella Contract above-mentioned is executed by and between the United States and said Coachella District prior to the transfer of constructed works to Imperial District for operation and maintenance, as provided by said Imperial Contract, and such Coachella Contract prior to such transfer or thereafter becomes binding upon the parties thereto, pursuant to law. After this agreement becomes effective, it, together with the lease herein provided for, shall terminate in the event Coachella District shall be relieved of all obligations under the Coachella Contract, by reason of failure of the United States to complete the works to be constructed thereunder.

WATER

SEC. 15. As a full and complete compromise and settlement of the controversy existing between the parties hereto as to the extent and priority of their respective rights and claims to the use of the waters of the Colorado River, it is agreed, as between said parties, that—

Imperial Irrigation District shall have the prior right for irrigation and potable purposes only, and exclusively for use in the Imperial Service Area, as hereinafter defined, or hereunder modified, to all waters apportioned to said Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys as provided in the third and sixth priorities set out in the recommendation of the Chief of the Division of Water Resources of the State of California, as contained in Article 17 of the Imperial Contract. Subject to said prior right of Imperial Irrigation District, Coachella Valley County Water District shall have the next right, for irrigation and potable purposes only and exclusively for use in the Coachella Service Area, as hereinafter defined, or hereunder modified, to all waters so apportioned to said Imperial Irrigation District and other lands under or that will be served from the All-American Canal in the Imperial and Coachella Valleys, as provided in said third and sixth priorities. The use of water for generation of electric energy shall be, in all respects, secondary and subservient to all requirements of said two districts for irrigation and potable purposes as above limited.

As hereinabove used the term "Imperial Service Area" shall comprise all lands within the boundaries of Imperial Irrigation District as said District was constituted on June 23, 1931, and all lands in Imperial and San Diego Counties, California, shown on map marked Exhibit "A," attached to said Imperial contract, and included within hatched border lines indicated on said map by legend as "Boundary

of Additional Areas in Proposed Enlarged Imperial Irrigation District," other than (a) such of said lands as are labeled "Dos Palmas Area" and (b) such of said lands as lie West of Salton Sea and North of the Northerly boundary line of Township 11, South of the San Bernardino Base Line. The term "Coachella Service Area" shall comprise all lands described on statements hereto attached and marked "Exhibits" "B," "C," "D" and "E," respectively, being approximately, but not exactly, the lands within said hatched border lines shown on said Exhibit "A," other than those included in said Imperial Service Area. Upon application of either district and with the written consent of the Secretary of the Interior, the boundaries of the service area which such district is entitled hereunder to serve may at any time or from time to time be changed, but may not be so changed as, in the aggregate, to add more than 5,000 acres to, nor to subtract more than 5,000 acres from, such service area, as herein defined, without the written consent of the district entitled hereunder to serve the other service area. Coachella District shall not participate in any revenues received by Imperial District for diverting, carrying and delivering at or near Pilot Knob, water for irrigation or domestic use for any person or agency other than the parties hereto, and Coachella District shall perform no such service at or near Pilot Knob.

APPLICATIONS TO APPROPRIATE WATER

SEC. 16. The parties hereto agree that their respective applications to appropriate water from the Colorado River for irrigation and domestic purposes heretofore filed with the Division of Water Resources of the State of California be deemed amended to conform with the foregoing provisions of this agreement and stipulate that permits be issued to them, respectively, in accordance herewith and agree to file with said Division all necessary papers and stipulations to that end. Except as between the parties hereto the provisions of this agreement shall not affect nor impair any rights of either party to the waters of the Colorado River.

LEASE OF POWER RIGHTS

SEC. 17. As a compromise and settlement of the controversy existing between the parties hereto as to all power possibilities, power rights, power resources and power privileges upon the whole of said All-American Canal in both Imperial and Riverside Counties, now or hereafter held, owned, or possessed by said parties, or either of them, including all those at or near Pilot Knob, which said power possibilities, power rights, power resources and power privileges are hereinafter styled "power rights," and to combine and coordinate all of said power rights as a unified project so as to produce the maximum

benefits to the parties hereto and to the United States, it is agreed that the parties hereto will, within a reasonable time after the execution of said Coachella Contract, execute a good and sufficient lease agreement, wherein Coachella District shall demise to Imperial District all of said power rights which the Coachella District may now have or hereafter obtain. Said lease, among other reasonable provisions, shall provide:

(a) That the term of said lease shall commence with the date thereof and terminate on January 1, 2033; provided, that should the term herein or in said lease fixed exceed that permitted by law at the date of said lease, then said term shall be deemed reduced to the longest period permitted by law;

(b) That said lease shall vest in Imperial District the entire and exclusive operation, management, development and control of all said power rights and the use, sale and control of power produced therefrom;

(c) That subject to the conditions hereinafter contained, Imperial District shall pay, on March first of each year, as rental for said demised power rights, eight per cent of the net proceeds, as defined in subsection (f) hereof, received by Imperial District during the preceding calendar year from all said power rights held, owned or possessed by both parties hereto and from all power works and power facilities by or in connection with which Imperial District utilizes said power rights;

(d) That said rentals shall be paid by Imperial District to the United States and credited on the Coachella Contract until Coachella District's obligations to the United States under said contract are fully paid, and thereafter Imperial District shall pay said rentals to Coachella District;

(e) That no rentals shall be due or payable unless and until capacity in the All-American Canal shall have been provided for Coachella District down to Pilot Knob;

(f) That in determining said net proceeds, as between the parties hereto, there shall be taken into consideration all items of cost of production and disposal of power, including, but not necessarily limited to amortization of and interest on capital investment for power purposes, improvements, operation and maintenance, and depreciation, and any other proper factor of cost not herein expressly enumerated;

(g) That the determination of said net proceeds for the purpose of ascertaining rentals payable under said lease shall be made without reference to the fact that as to Imperial District said rentals will constitute a part of the cost of doing business;

(h) That on March first of each year Imperial District shall furnish to Coachella District a statement of account showing the computation of said rental;

(i) That Coachella District shall not be required to contribute in any manner to the cost of construction, operation or maintenance of any power works or facilities on or in connection with the All-American Canal, except indirectly, as said items may be taken into consideration in determining rentals to be paid under said lease;

(j) That said lease shall terminate upon Coachella District being relieved of obligations as provided in Section 14 hereof and/or at the option of Coachella District, in the event of default in any payment of rentals by Imperial District for a period of two years;

(k) That any overdue rental shall bear interest at the rate of one-half of one per cent per month until paid;

(l) That when Imperial District is ready to undertake construction of facilities to serve electrical energy (herein designed "power") in Coachella Valley, Coachella District shall obtain for Imperial District signed contracts or applications for power as provided in Section 18 hereof, and be otherwise subject to the provisions of said Section 18;

(m) That when Imperial District is ready to serve power from the All-American Canal in Coachella Valley, then, if and while said lease is in effect, Imperial District will furnish such power in Coachella District at the rates and upon the conditions provided in Section 19 hereof;

(n) That Coachella District shall, by its officials or designated representatives, have the right of ingress to and egress from all power works and facilities of Imperial District for the purpose of inspection thereof, and full and free access to and the right during office hours to inspect and copy all books and records of Imperial District relating to its power operations;

(o) That the interest of Imperial District under said lease shall not, nor shall any part thereof nor interest therein, be assigned, nor shall Imperial District sublet any part of nor interest in said demised power rights without the written consent of Coachella District;

(p) That at the termination of said lease the rights and privileges of the parties thereto shall be segregated and/or adjusted as may be equitable and just, having in view the business, interests and investments of the parties and their respective legal and equitable rights in said power rights, works and facilities on or in connection with the All-American Canal;

(q) That in the event the parties cannot agree upon such segregation or adjustment, then the same shall be made by a board of arbitration, consisting of five persons, one to be selected by Imperial District, one by Coachella District, and three by the Secretary of the Interior and the decision of said board of arbitration shall be final and binding upon the parties to said lease;

(r) That nothing contained in said lease shall be construed as in any manner abridging, limiting, or depriving either of the parties thereto of any means of enforcing any remedy, either at law or in equity, for the breach of any of the provisions of said lease which it would otherwise have;

(s) That the waiver of a breach of any of the provisions of said lease shall not be deemed to be a waiver of any other provision thereof or of a subsequent breach of such provision.

POWER CONTRACTS

SEC. 18. When the lease provided for in Section 17 hereof has been executed and Imperial District is ready to undertake construction of facilities to serve electrical energy (herein styled "power") in Coachella Valley it shall notify Coachella District of said fact in writing and it shall thereupon be the duty of Coachella District to obtain for Imperial District, within six months after service of such notice, contracts or applications for power signed by consumers using at the time of service of such notice not less than eighty percent of the power load then being consumed in the Coachella Service Area. Such contracts or applications shall be in such form and substance as reasonably required by Imperial District and shall among other things bind the consumer to take from Imperial District all power that he may require in Coachella District for a period of three years. In the event of disagreement between the parties as to whether or not Coachella District has complied with the foregoing provisions of this section on its part to be complied with, then the Secretary of the Interior may, at the written request of either party, determine said fact and notify the parties hereto of such determination in writing, and such determination shall be final and binding upon the parties hereto. Notwithstanding anything herein or in said lease contained, there shall be no obligation on the part of the Imperial District for rentals under said lease during the time, if any, after said six months period that said signed contracts or applications for said eighty percent of power load have not been so delivered.

POWER RATES

SEC. 19. When the lease provided for in Section 17 hereof has been executed and Imperial District is ready to serve power from the All-American Canal in Coachella Valley then, and while said lease remains in effect, Imperial District will furnish such power in Coachella District upon the following terms:

A. To Coachella District, for use by itself for project purposes within said Coachella Service Area as such project purposes are

hereinafter defined, at rates in no case exceeding the cost of power delivered in Coachella Valley, plus fifteen percent, and in no event at rates higher than are charged by Imperial District to itself for like uses with such additional charges as may be necessary to offset difference in costs of transmitting power as between Imperial and Coachella Valleys. Subject to the foregoing provisions, Coachella District agrees that, for a period of five years from and after the service of the notice provided for in Section 18 hereof said Coachella District will purchase from Imperial District and pay for all power Coachella District may require for project purposes within the Coachella Service Area, and for which Imperial District has sufficient facilities and is prepared to serve. Imperial District shall not be required to furnish power to Coachella District for project purposes at points where Imperial District does not then have sufficient facilities for such power service.

“Project Purposes” as used in this section shall be understood to mean construction, operation, and maintenance of Coachella District’s irrigation and drainage system within the Coachella Service Area, where such construction, operation, or maintenance is of a general public nature and not individual or private in character.

B. To all consumers within Coachella District, other than to Coachella District for project purposes, at no higher rates than those charged, and under the same conditions and regulations as those prescribed, by Imperial District for like service to consumers within Imperial District with such additional charges as may be necessary to offset difference in costs of transmitting power as between Imperial and Coachella Valleys. In no event shall such rates to such consumers exceed seventy-five percent of the rates paid for like service by individual consumers in Coachella District on January 1, 1934, based upon the purchasing power of the dollar on said date. Imperial District shall make such further reduction in rates to such consumers as may be necessary to meet competitive rates for like service of any public utility, at the time authorized by the Railroad Commission of the State of California, or other authority succeeding to its functions, and able to serve such consumers, but in no event shall Imperial District be required to charge rates that will return less than the cost of service.

POWER PERMITS

SEC. 20. The parties hereto agree to cooperate to the end that all necessary and proper permits and licenses to appropriate water for power purposes and construct power facilities may be obtained from the Division of Water Resources of the State of California and/or Federal Power Commission as may be authorized by law and hereby

stipulate that such permits and licenses issue to the parties hereto, as follows, to wit:

1. To Imperial District, as to all such permits and licenses on the portion of the All-American Canal shown on said Exhibit "A" and marked "Main (All American) Canal to Imperial Valley" lying west of the southerly end of the "Main (All American) Canal to Coachella Valley" as same is shown on said Exhibit "A";

2. To Coachella District, as to all such permits and licenses on the portion of the All-American Canal shown on said Exhibit "A" and marked "Main (All American) Canal to Coachella Valley" lying North of the Northerly boundary line of Township 11, South of the San Bernardino Base Line;

3. To Imperial District and Coachella District, as their respective privileges to utilize power possibilities may appear from their said contracts with the United States, as to all such privileges on all portions of the Imperial Dam and All-American Canal, including Pilot Knob, not hereinabove specified.

**AGREEMENT VOID IF CERTAIN LANDS INCLUDED IN IMPERIAL
DISTRICT**

SEC. 21. In the event lawful petition or petitions sufficient in all respects for inclusion within Imperial District of ninety percent (90%) of the lands shown on said Exhibit "A" lying north of the northerly boundary line of Township Eleven (11), South of the San Bernardino Base Line and bounded by the lines indicated on said Exhibit "A" as "Boundary of Additional Areas in Proposed Enlarged Imperial Irrigation District," exclusive of the Dos Palmas Area and exclusive of Indian lands and public lands of the United States, shall be filed pursuant to and within the time limited by said Imperial Contract, and said lands shall be thereafter included within said Imperial District pursuant to such petition or petitions, then, as of the date of such inclusion, this agreement shall terminate and be at an end.

REMEDIES UNDER AGREEMENT NOT EXCLUSIVE

SEC. 22. Nothing contained in this agreement shall be construed as in any manner abridging, limiting, or depriving either of the parties hereto of any means of enforcing any remedy, either at law or in equity, for the breach of any of the provisions hereof which it would otherwise have. The waiver of a breach of any of the provisions of this agreement shall not be deemed to be a waiver of any other provision hereof or of a subsequent breach of such provision.

SEC. 23. This agreement shall not be interpreted nor construed so as to amend, modify, or change said Imperial Contract in any particular, and no provision hereof in conflict with said Imperial Con-

tract shall be of any force or effect. As to any provisions hereof in which the United States is interested this agreement shall be deemed to be made expressly for the benefit of the United States, as well as of the parties hereto.

SEC. 24. This agreement shall inure to and be binding upon the parties hereto, their and each of their respective successors and assigns.

In witness whereof said parties have executed this agreement in triplicate original by their respective officers, thereunto duly authorized by resolutions of their respective Boards of Directors, the day and year first above written.

[SEAL] IMPERIAL IRRIGATION DISTRICT,
By (Signed) EVAN T. HEWES, *Its President.*

Attest:

(Signed) W. W. GOODSON,
Its Secretary.

[SEAL] COACHELLA VALLEY COUNTY WATER DISTRICT,
By (Signed) HARRY W. FORBES, *Its President.*

Attest:

(Signed) HELEN F. RUNYEN,
Its Secretary.

(The following exhibits, annexed to the foregoing "Agreement of Compromise," are omitted here because of limitations of space:

Annex A: Draft of proposed "Contract for Construction of Capacity in Diversion Dam, Main Canal, and Appurtenant Structures and for Delivery of Water" between the United States and Coachella Valley County Water District.

Exhibit B: "Description of lands within Coachella Valley County Water District and its improvement district No. 1 and within the Coachella service area."

Exhibit C: "Description of lands outside Coachella Valley County Water District and within the Coachella service area, designated the Salton area."

Exhibit D: "Description of lands outside Coachella Valley County Water District and within the Coachella service area, designated the Dos Palmas area."

Exhibit E: "Description of lands outside Coachella Valley County Water District and within the Coachella service area, designated the Fish Springs area.")

Appendix 1108

**ALL-AMERICAN CANAL:
CONTRACT OF COACHELLA VALLEY COUNTY
WATER DISTRICT, OCTOBER 15, 1934**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ALL-AMERICAN CANAL

COACHELLA VALLEY COUNTY WATER DISTRICT

**CONTRACT FOR CONSTRUCTION OF CAPACITY IN DIVERSION DAM,
MAIN CANAL AND APPURTENANT STRUCTURES AND FOR DELIVERY
OF WATER**

ARTICLE 1. THIS CONTRACT, made this 15th day of October, nineteen hundred thirty-four, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, and the Act of Congress approved June 16, 1933 (48 Stat. 195), designated the National Industrial Recovery Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Harold L. Ickes, Federal Emergency Administrator of Public Works and Secretary of the Interior, hereinafter styled the Secretary, and COACHELLA VALLEY COUNTY WATER DISTRICT, a County Water District created, organized, and existing under and by virtue of the County Water District Act of the State of California, and acts amendatory thereof or supplementary thereto, with its principal place of business at Coachella, Riverside County, California, hereinafter referred to as the District;

Witnesseth:

EXPLANATORY RECITALS

ART. 2. Whereas, for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing

for storage and for the delivery of the stored waters for reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, subject to the terms of the Colorado River Compact, is authorized to construct, operate, and maintain a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water, and a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam, or other suitable diversion dam, which the Secretary is also authorized to construct if deemed necessary or advisable by him upon engineering or economic considerations, with the Imperial and Coachella Valleys in California, the expenditures for said main canal and appurtenant structures to be reimbursable as provided in the reclamation law; and

ART. 3. Whereas, after full consideration of the advantages of both the Black Canyon and Boulder Canyon dam sites, the Secretary has determined upon Black Canyon as the site of the aforesaid dam, hereinafter styled the Boulder Dam, creating thereby a reservoir to be hereinafter styled the Boulder Canyon Reservoir; and

ART. 4. Whereas (a) there are included within the boundaries of the District areas of private and public lands and additional private and public lands will, by appropriate proceedings, be added to the District and to the Coachella Service Area, defined in Article 17 hereof; and

(b) There has been executed under date of December 1, 1932, a contract, herein styled Imperial Contract, between the United States and Imperial Irrigation District, an irrigation district created, organized and existing under and by virtue of the laws of the State of California, which contract provides for the construction of a suitable diversion dam and main canal and appurtenant structures, therein and hereinafter respectively styled "Imperial Dam" and "All-American Canal", located entirely within the United States, connecting with the Imperial and Coachella Valleys, and for the delivery to said Imperial Irrigation District of stored water from Boulder Canyon Reservoir; and

(c) Certain controversies between said two districts relating to their respective interests in water and power on said All-American Canal have been settled and compromised by an agreement executed between said two districts, dated February 14th, 1934, a triplicate original of which said agreement was on July 3, 1934, filed with the Secretary; and

(d) The District is desirous of entering into a contract for the construction of certain capacity for it in said Imperial Dam and All-American Canal and for the delivery to the District, for the benefit of the lands under or that will be served from the All-American

Canal in Coachella Valley, now or hereafter within the District and lying within said Coachella Service Area, of stored water from Boulder Canyon Reservoir, such contract to be in harmony with the provisions of said Imperial Contract and those of said agreement dated February 14th, 1934; and

ART. 5. Whereas the Secretary has determined, upon engineering and economic considerations, that it is advisable to provide for the construction of such Imperial Dam and All-American Canal, and has determined that the revenues provided for by this contract are adequate in his judgment to insure payment of all expenses of construction, operation and maintenance of the capacity in said Imperial Dam and All-American Canal to be constructed hereunder, in the manner provided in the reclamation law;

ART. 6. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

CONSTRUCTION BY UNITED STATES

ART. 7. The United States will construct the Imperial Dam in the main stream of the Colorado River at the approximate location indicated on the map marked Exhibit "A" attached hereto and by this reference made a part hereof, and will also construct the All-American Canal to the Imperial and Coachella Valleys, the approximate location of said canal to be as shown on the aforesaid Exhibit "A." Said canal shall be so constructed as to provide a designed capacity of one thousand five hundred (1,500) cubic feet of water per second, to be used by the District for the benefit of the lands now or hereafter within the District and lying within said Coachella Service Area, from and including the diversion and desilting works at said dam to the southerly end of that portion of the All-American Canal designated on said Exhibit "A" as "Main (All American) Canal to Coachella Valley" (hereinafter styled "Coachella Main Canal"). Said Coachella Main Canal shall be constructed with such capacities as the Secretary may conclusively determine to be necessary or advisable upon engineering or economic considerations to accomplish the ends contemplated by this contract; provided, however, that changes in capacities, locations, lengths, and alignments, may be made during the progress of the work as may, in the opinion of the Secretary, whose opinion shall be final and binding upon the parties hereto, be expedient, economical, necessary or advisable, except the capacity above indicated from and including the diversion and desilting works at Imperial Dam to the Southerly end of said Coachella Main Canal, which capacity may be changed only by mutual agreement between the Secretary and the District. The ultimate cost to said two districts of the Imperial Dam and All-American Canal shall in no event

exceed the aggregate sum of thirty-eight million, five hundred thousand dollars (\$38,500,000.00). Such cost shall include all expenses of whatsoever kind heretofore or hereafter incurred by the United States from the Reclamation Fund or the Colorado River Dam fund in connection with, growing out of, or resulting from the construction of said Imperial Dam and All-American Canal, including but not limited to the cost of labor, materials, equipment, engineering, legal work, superintendence, administration, overhead, any and all costs arising from operation and maintenance of said Imperial Dam and All-American Canal prior to the time that said costs are assumed respectively by the said two districts, damage of all kinds and character and rights-of-way as hereinafter provided. The District hereby agrees to repay to the United States its share of all expenditures incurred on account of any and all damages due to the existence, operation or maintenance of the diversion dam and main canal, the incurrence of which increases expenditures by the United States beyond said sum of \$38,500,000.00. The District shall repay the same share of said expenditures as the share to be paid by the District under Article 10 (b) hereof of the capital cost of the particular part of said works causing such damage. The United States will invoke all legal and valid reservations of rights-of-way under acts of Congress, or otherwise reserved or held by it, without cost to the District, except that the United States reserves the right where rights-of-way are thus acquired to reimburse the owners of such lands for the value of improvements which may be destroyed, and the District agrees that the United States may include such disbursements in the cost of the Imperial Dam and All-American Canal. If rights-of-way are required over an existing project of the Bureau of Reclamation, such sum or sums as may be necessary to reimburse the United States on account of the construction charges allocated to irrigable areas absorbed in such rights-of-way shall also be considered as a part of and be included with other costs of the Imperial Dam and All-American Canal. The District agrees to convey to the United States, without cost, unencumbered fee simple title to any and all lands now owned by it which, in the opinion of the Secretary, may be required for right-of-way purposes for the Imperial Dam and All-American Canal; and the District agrees that Imperial Irrigation District may convey to the United States unencumbered fee simple title to any and all lands now owned by it which, in the opinion of the Secretary, may be required for right-of-way purposes for those portions of the Imperial Dam and All-American Canal to be used in common by said two districts, at the fair market value thereof, to be determined by the Secretary, such value to be considered (as to the District) as a part of and included with other costs of the Imperial Dam and All-American Canal. Where rights-of-way within

the State of California are required for the construction of Imperial Dam and All-American Canal, and such rights-of-way are not reserved to the United States under Acts of Congress, or otherwise, or the lands over which such rights-of-way are required are not then owned by either of said two districts, then the District agrees, (a) that it will, upon request of the Secretary, acquire title to such lands required for such purposes as lie north of the lowest turnout for East Mesa on said Coachella Main Canal, and in turn convey unencumbered fee simple title thereto to the United States at the actual cost thereof to the District, subject to the approval of such cost by the Secretary; and (b) agrees that Imperial Irrigation District, upon request of the Secretary, may acquire title to any such lands required for such purposes as lie south of the Northerly boundary line of Township Eleven (11), South of the San Bernardino Base Line, and likewise convey unencumbered fee simple title thereto to the United States at the actual cost thereof to the Imperial Irrigation District, subject to the approval of such cost by the Secretary.

ASSUMPTION OF OPERATION AND MAINTENANCE OF COMMON AND SEPARATE WORKS

ART. 8. (a) Imperial Dam and All-American Canal and Laguna Dam except (i) that portion of said Coachella Main Canal lying North of the Lowest turn-out for East Mesa and (ii) that portion of the All-American Canal lying West of the Southerly end of said Coachella Main Canal and designated on said Exhibit "A" as "Main (All American) Canal to Imperial Valley" are herein styled "common works." Upon sixty (60) days' written notice from the Secretary of the completion of construction of the Imperial Dam and All-American Canal, or of any major unit thereof useful to said two districts or either of them, as determined by the Secretary, whose determination thereof shall be final and binding upon the parties hereto, said Imperial Irrigation District may assume the care, operation and maintenance of said common works, or major units thereof, and thereafter said Imperial Irrigation District may care for, operate and maintain the same in such manner that such works shall remain in as good and efficient condition and of equal capacity for the diversion, transportation and distribution of water as when received from the United States, reasonable wear and damage by the elements excepted. The United States may, from time to time, in the discretion of the Secretary, resume operation and maintenance of said Imperial Dam upon not less than sixty (60) days' written notice and require reassumption thereof by said Imperial Irrigation District on like notice. During such times, after completion, as the Imperial Dam is operated and maintained by the United States, the District shall on March first of each year

advance to the United States its share of the estimated cost of operation and maintenance for the following twelve months, upon estimates furnished therefor on or before September first next preceding. Such share to be advanced by the District shall be in the proportion that the capacity provided for the District in common works above Syphon Drop bears to the total capacity thereof.

(b) From and after the assumption of operation and maintenance of said common works or any major unit thereof, by Imperial Irrigation District, the District shall bear such proportion of the cost of operation and maintenance (including repairs and replacements and any charges made by the United States under Article Nine (9) hereof) of each component part of said common works, as the capacity provided for the District in such component part bears to the total capacity thereof. The District agrees, expressly for the benefit of Imperial Irrigation District, to advance to Imperial Irrigation District on or before January first of each year its said proportionate share of the estimated cost for that year of such operation and maintenance in accordance with a written notice to be issued to it by Imperial Irrigation District, provided that payment shall in no event be due until thirty (30) days after receipt of such notice. Prior to March first of each year Imperial Irrigation District shall provide the District with a written statement showing in detail the cost for the previous year for operation and maintenance of the works on account of which the District has made advances. Differences between actual costs and estimated costs shall be adjusted in next succeeding notices. Upon request of the District, both the advance notice of estimated costs and the subsequent statement of actual costs for each year shall be reviewed by the Secretary and his determination of proper charges shall be final. Such review shall not change the due date for advance payments as herein provided and the cost of such review shall be borne equally by said two districts. The Imperial Irrigation District may at its option withhold delivery of water from the District until its proportionate share of the costs of operation and maintenance has been advanced or paid, as in this article provided and until all sums due Imperial Irrigation District under Article 10 (c) hereof have been paid.

(c) Upon sixty (60) days' written notice from the Secretary of the completion of construction of the Coachella Main Canal and appurtenant structures or of any major unit thereof useful to the District, as determined by the Secretary, whose determination thereof shall be final and binding on the parties hereto, the District shall assume the care, operation and maintenance of all such works north of the lowest turnout for East Mesa on said Coachella Main Canal, and thereafter the District shall, at its own cost and without expense to the United States, care for, operate and maintain the same in such manner that

such works shall remain in as good and efficient condition and of equal capacity for the transportation and distribution of water as when received from the United States, reasonable wear and damage by the elements excepted.

Upon like notice Imperial Irrigation District may assume the care, operation and maintenance, at its own cost, of all works designated on said Exhibit "A" as "Main (All American) Canal to Imperial Valley", lying west of the southerly end of the Coachella Main Canal.

(d) After the care, operation, and maintenance of any of the aforesaid works have been assumed by the District, the District shall save the United States, its officers, agents and employees harmless as to any and all injury and damage to persons and property which may arise out of the care, operation and maintenance thereof. In the event the United States fails to complete the works herein contemplated and the District fails to elect to make use of works theretofore partially or wholly constructed, the District shall be fully relieved of any and all responsibility for any further operation and maintenance of any works theretofore taken over by the District for that purpose and thereupon the District shall no longer be responsible for said maintenance or operation or damage to person or property which may arise therefrom.

KEEPING DIVERSION DAM, MAIN CANAL AND APPURTENANT STRUCTURES
IN REPAIR

ART. 9. Except in case of emergency no substantial change in any of the works to be constructed by the United States and transferred to either of said two districts under the provisions hereof or under said Imperial Contract shall be made by such district, without first having had and obtained the written consent of the Secretary and the Secretary's opinion as to whether any change in any such works is or is not substantial shall be conclusive and binding upon the parties hereto. Such district shall promptly make any and all repairs to and replacements of all said works transferred to it under the terms and conditions hereof or under said Imperial Contract which, in the opinion of the Secretary, are deemed necessary for the proper operation and maintenance of such works. In case of neglect or failure of such district to make such repairs, the United States may, at its option, after reasonable notice to such district, cause such repairs to be made and charge the actual cost thereof, plus fifteen per centum (15%) to cover overhead and general expense to such district operating the works so repaired. On or before September first of each calendar year the United States shall give written notice to such district operating such works of the amount expended by the United States for repairs under this article during the twelve-month period immediately pre-

ceding. Such cost, plus overhead and general expense as stated above, shall be repaid by such district operating such works on March first immediately succeeding.

AGREEMENT BY DISTRICT TO PAY FOR WORKS CONSTRUCTED BY THE
UNITED STATES

ART. 10. (a) The District agrees to pay the United States its share, as defined in subarticle (b) of this Article, of the actual cost, not exceeding thirty-eight million five hundred thousand dollars (\$38,500,000.00), incurred by the United States on account of the Imperial Dam and All-American Canal, subject, however, to the provisions of Article seven (7) hereof; provided, that should Congress and other Governmental financing authorities fail to make necessary appropriations or allocations of money to complete the work herein provided for, then the Secretary may, at such reasonable time as he may consider advisable, after Congress and such other Governmental authorities shall have failed for five (5) consecutive years to make the necessary appropriations or allocations which shall have been annually requested by the Secretary, give the District notice of the termination of work by the United States and furnish a statement of the amount actually expended by the United States thereon. Upon the receipt of such notice by the District, the District shall be given two (2) years from and after such receipt of notice to elect whether it will utilize said works theretofore constructed hereunder, or some particular part thereof. Such election on the part of the District shall be expressed by resolution of the Board of Directors submitted to the electorate of the District for approval or rejection in the manner provided by law for submission of contracts with the United States. If the District elects not to utilize, or fails within said two-year period to elect to utilize said works constructed hereunder, or some portion thereof, then the District shall have no further rights therein and no obligations therefor. If the District elects to utilize said works or a portion thereof, then the reasonable value to the District of the works so utilized, not exceeding the actual cost thereof to the United States, shall be paid by the District under the terms of this contract; the first payment to be due and payable on the first day of March following the first day of August next succeeding the final determination of the reasonable value to the District of such works, in case no further work is done by the District. Should the District elect to complete the work contemplated by this contract, or some portion thereof, the first payment shall be due and payable on the first day of March following the first day of August next succeeding the date of final completion of the work by the District as determined by the Secretary. In determining the value of such works to the District there

shall be taken into account, among other things, the method of financing required and cost of money, so that in no event shall all of the works contemplated by this contract cost the District more than they would have cost the District had they all been constructed by the United States under the terms of this contract. In the event of failure of the parties to agree as to the reasonable value to the District of the works which the District elects to use, the same shall be determined as provided in Article twenty-six (26) hereof.

(b) The amounts herein agreed to be paid by the District to the United States shall be in accordance with the following proportions, which proportions the Secretary hereby determines to be equitable and just, to wit:

i. That proportion of the total cost of that part of said common works above Syphon Drop, excepting Laguna Dam, that the capacity provided for the District therein bears to the total capacity thereof less the capacity to be provided without cost to and for the Yuma Project.

ii. That proportion of the total cost of each component part of all said common works, other than the part above Syphon Drop, that the capacity provided for the District in such part of said works bears to the total capacity thereof.

iii. The entire cost of all works North of the lowest turn-out for East Mesa on the Coachella Main Canal.

(c) The District agrees to pay to the United States on the 31st day of December of each year commencing December 31, 1935, a portion (computed in the same manner as its share of costs of common works above Syphon Drop as agreed in Article 10 (b) i hereof) of each of the annual payments (together with interest required thereon) then or thereafter required to be made by Imperial Irrigation District to the United States for a connection with Laguna Dam, under its contract dated October 23, 1918, and under Article sixteen (16) of said Imperial Contract, or otherwise.

The Secretary hereby determines that it is equitable and just that the District pay, and the District agrees, expressly for the benefit of Imperial Irrigation District, to pay Imperial Irrigation District the same proportion of the aggregate sum which shall have been paid by Imperial Irrigation District to the United States prior to December 31, 1935, for a connection with Laguna Dam, as aforesaid, as the proportion herein agreed to be paid by the District to the United States of payments hereafter to be made for said connection with Laguna Dam. The aggregate sum to be paid by the District to Imperial Irrigation District shall be divided into ten equal installments, payable annually on March first of each year, commencing on or before the year 1939, with interest from date hereof on unpaid balances at the rate of six per centum (6%) per annum, payable

March 1st, 1936, and annually thereafter. At its option, the District may at any time pay any amount on principal of said aggregate sum in advance of the due date and interest on the amount so paid shall thereupon cease.

(d) The lands now in the District, which are also situate in the Coachella Service Area, as defined in Article seventeen (17) hereof, are designated and described in statement hereto attached, marked Exhibit "B" and by this reference made a part hereof. The Board of Directors of the District does hereby declare, determine, and find, and has by the ordinance by which it authorized the execution of this contract, declared, determined, and found that only that portion of the District within said area described in said Exhibit "B" is susceptible of service with water from the waterworks contemplated under this contract and that said area shall be and constitute Improvement District No. 1 of the District. Said Board of Directors does further declare, determine, and find and has, by said ordinance, declared, determined, and found that that portion of said Coachella Service Area not now in the District, of which description is hereto attached, marked Exhibit "C" and by this reference made a part hereof (hereinafter styled "Salton Area"), is also susceptible of service from said waterworks, and that if and when said area described in Exhibit "C" is added to the District, said area shall also be added to, and entitled to the same benefits and subject to the same obligations as the lands in said Improvement District No. 1. Said Board of Directors does further declare, determine, and find and has, by said ordinance, declared, determined, and found that those certain lands in said Coachella Service Area and not now in the District (i) shown on said Exhibit "A" as enclosed within a hatched border line and marked "Dos Palmas Area," of which description is hereto attached, marked Exhibit "D" and by this reference made a part hereof, and (ii) shown on said Exhibit "A" as bounded on the East, South, and West by a like hatched border line and on the North by the North boundary line of Imperial County and lying West of Salton Sea (herein styled "Fish Springs Area"), of which description is hereto attached, marked Exhibit "E" and by this reference made a part hereof, are also susceptible of service from said waterworks and that if and when said Dos Palmas Area, or any part thereof, is added to the District, it shall be and constitute Improvement District No. 2 of the District, and that if and when said Fish Springs Area, or any part thereof, is added to the District, it shall be and constitute Improvement District No. 3 of the District.

All lands now or hereafter situate both in said Coachella Service Area and in the District are, as a whole, obligated to pay to the United States the full amount herein agreed upon, regardless of the default or failure of any tract, or of any landowner, in the payment

of the taxes levied by the District against such tract or landowner, and the District shall, when necessary, levy and collect appropriate taxes to make up for the default or delinquency of any such tract of land or of any such landowner in the payment of taxes, so that in any event, and regardless of any defaults or delinquencies in the payment of any tax or taxes, the amounts due or to become due the United States shall be paid to the United States by the District when due. No lands in the District shall be charged with any taxes or assessments under this contract except those situate within said Coachella Service Area, as defined in Article seventeen (17) hereof, or as thereunder modified.

The Improvement Districts above mentioned are hereby required to be constituted and created as nearly as may be, in the manner prescribed in said County Water District Act for creation of Improvement Districts in County Water Districts in case of ordinary issuance of bonds.

CHANGES IN BOUNDARIES OF COACHELLA SERVICE AREA

ART. 11. After the date of this contract no change shall be made in the boundaries of the Coachella Service Area as defined in Article seventeen (17) hereof and the Board of Directors shall make no order changing the boundaries of said Coachella Service Area except as provided in said Article seventeen (17); provided, however, that the Secretary hereby consents to the inclusion in said Coachella Service Area of all of the lands described on Exhibits "B," "C," "D," and "E" hereto attached.

TERMS OF PAYMENT

ART. 12. The amount herein agreed to be paid to the United States shall be due and payable in not more than forty (40) annual installments commencing with the calendar year next succeeding the year when notice of completion of all work provided for herein is given to the District or under the provisions of Article 10 (a) hereof upon termination of work through failure of Congress and other Governmental authorities to make necessary appropriations or allocations therefor. The first five (5) of such annual installments shall each be one per centum (1%) of the amount herein agreed to be paid to the United States; the next ten (10) of such installments shall each be two per centum (2%) of the amount herein agreed to be paid to the United States, and the remainder of such annual installments shall each be three per centum (3%) of the amount herein agreed to be paid to the United States. The sums payable annually as set forth above shall be divided into two (2) equal semiannual payments, payable on March first and September first of each year; provided, however, that if notice of the completion of work is given to the

District subsequent to August first of any year the first semiannual installment of charges hereunder shall be due and payable on March first of the second succeeding year.

OPERATION AND MAINTENANCE COSTS

ART. 13. Each agency which hereafter contracts for capacity to be provided for it in Imperial Dam and All-American Canal and for which agency capacity is so provided shall bear such proportionate part of the cost of operation and maintenance (including repairs and replacements) of the component parts of Imperial Dam and All-American Canal and of the Laguna Dam as may be determined by the Secretary to be equitable and just, but not less than an amount in proportion to the total amount as are the relative capacities provided in each component part for such agency and for all other agencies, including the District. Each such agency shall advance to each district operating any works provided to be used in common by such district and such agency on or before January first of each year, its proportionate share of the estimated cost for that year of operation and maintenance in accordance with a notice to be issued by such district, provided that payment shall in no event be due until thirty (30) days after receipt of notice. Prior to March 1st of each year each such district shall provide each agency with a statement showing in detail the costs for the previous year for operation and maintenance of the works on account of which such agency has made advances. Differences between actual costs and estimated costs shall be adjusted in next succeeding notices. Upon request of any agency, both the advance notice of estimated costs and the subsequent statement of actual costs for each year shall be reviewed by the Secretary and his determination of proper charges shall be final. Such review shall not change the due date for advance payments as herein provided, and the cost of such review shall be borne equally by the requesting agency and such district. Such district may, at its option, withhold the delivery of water from any agency until its proportionate share of the costs of operation and maintenance have been advanced or paid, as in this article provided.

POWER POSSIBILITIES

ART. 14. The power possibilities on the All-American Canal down to and including Syphon Drop with water carried for the benefit of the Yuma Project as provided for in Article fifteen (15) hereof, are hereby reserved to the United States. Subject to this reservation and the participation by other agencies as provided for in Article twenty-one (21) hereof, the District shall have the privilege of utilizing by contract or otherwise, by means of the capacity to be provided for

the District hereunder, such power possibilities, including those at or near Pilot Knob, as may exist upon said canal in proportion to its relative contribution or obligation toward the capital cost of said canal and appurtenant structures from and including the diversion works to the point where each respective power plant may be located; provided, that such privilege shall not interfere with the utilizing by Imperial Irrigation District of such power possibilities at or near Pilot Knob, by means of the capacity to be provided for Imperial Irrigation District in the All-American Canal from Syphon Drop to Pilot Knob, in excess of 8,500 cubic feet of water per second. The net proceeds as hereinafter defined in Article thirty-one (31) hereof, and as determined by the Secretary for each calendar year, from any power development which the District is hereunder authorized to make, shall be paid into the Colorado River Dam fund on March first of the next succeeding calendar year and be credited to the District on this contract until the District shall have paid thereby and/or otherwise an amount of money equivalent to that herein agreed to be paid to the United States. Thereafter such net power proceeds shall belong to the District. It is agreed that in the event the net power proceeds in any calendar year, creditable to the District, shall exceed the annual installment of charges payable under this contract during the then current calendar year, the excess of such net power proceeds shall be credited on the next succeeding unpaid installment to become due from the District under this contract.

DIVERSION AND DELIVERY OF WATER FOR YUMA PROJECT

ART. 15. The District hereby consents that there be diverted at the Imperial Dam, and transported and delivered at Syphon Drop and/or such intermediate points as may be designated by the Secretary, the available water to which the Yuma Project (situated entirely within the United States and not exceeding in area 120,000 acres plus lands lying between the project levees and the Colorado River as such levees were located in 1931) is entitled, not exceeding two thousand (2,000) second-feet of water in the aggregate, or such part thereof as the Secretary may direct, for the use and benefit of said project, including the development of power at Syphon Drop, such water to be diverted, transported and delivered continuously in so far as reasonable diligence will permit; provided, however, that water shall not be diverted, transported or delivered for the Yuma Project when the Secretary notifies Imperial Irrigation District that said project for any reason may not be entitled thereto; provided, further, that there may be diverted, transported and delivered such water in excess of requirements for irrigation or potable purposes, as determined by the Secretary, on the Yuma Project as so limited, only when such water is not

required by the District for irrigation or potable purposes. The diversion, transportation and delivery of water for the Yuma Project as aforesaid shall be without expense to the United States or its successors in control of said project, as to capital investment required to provide facilities for such diversion and transportation of water except such checks, turn-outs, and other structures required for delivery from said canal.

CONTRACT OF OCTOBER 23, 1918

ART. 16. That certain contract between the United States of America and Imperial Irrigation District, bearing date of October 23, 1918, providing for a connection with Laguna Dam, having been terminated, except as to the provisions of Article nine (9) thereof, by said Imperial Contract, the District hereby consents to such partial termination of said first-mentioned contract. The District hereby consents that there be furnished to the United States or its successors in interest in the control, operation and maintenance of the Yuma Project, from any power development on the All-American Canal at or near Pilot Knob, up to but not to exceed four thousand horsepower of electrical energy for use by the agency in charge of project operations for irrigation and drainage pumping purposes and necessary incidental use on said Yuma Project, such power to be furnished at cost (including overhead and general expense) plus ten percent; provided, however, that such power at or near Pilot Knob shall not be required to be furnished except at such times as all power feasible of development at Syphon Drop or developed elsewhere within a radius of 40 miles from the City of Yuma for the benefit of the Yuma Project is being used for project operations as in this article specified.

DELIVERY OF WATER BY UNITED STATES

ART. 17. The United States shall, from storage available in the reservoir created by Boulder Dam, deliver to or for the District, for the benefit of the lands under or that will be served from the All-American Canal in Coachella Valley, now or hereafter within the District and lying within the Coachella Service Area, hereinafter defined, each year, at a point in the Colorado River immediately above Imperial Dam, so much water as may be necessary to supply the District a total quantity, including all other waters diverted for use within the District from the Colorado River, in the amounts and with priorities in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, as follows (subject to availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act):

The waters of the Colorado River available for use within the State of California under the Colorado River Compact and the

Boulder Canyon Project Act shall be apportioned to the respective interests below named and in amounts and with priorities therein named and set forth, as follows:

SECTION 1. A first priority to Palo Verde Irrigation District for beneficial use exclusively upon lands in said District as it now exists and upon lands between said District and the Colorado River, aggregating (within and without said District) a gross area of 104,500 acres, such waters as may be required by said lands.

SEC. 2. A second priority to Yuma Project of the United States Bureau of Reclamation for beneficial use upon not exceeding a gross area of 25,000 acres of land located in said project in California, such waters as may be required by said lands.

SEC. 3. A third priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the "Lower Palo Verde Mesa," adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 3,850,000 acre-feet of water per annum less the beneficial consumptive use under the priorities designated in Sections 1 and 2 above. The rights designated (a) and (b) in this section are equal in priority. The total beneficial consumptive use under priorities stated in Sections 1, 2, and 3 of this article shall not exceed 3,850,000 acre-feet of water per annum.

SEC. 4. A fourth priority to the Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum.

SEC. 5. A fifth priority (a) to The Metropolitan Water District of Southern California and/or the City of Los Angeles, for beneficial consumptive use, by themselves and/or others, on the Coastal Plain of Southern California, 550,000 acre-feet of water per annum and (b) to the City of San Diego and/or County of San Diego, for beneficial consumptive use, 112,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

SEC. 6. A sixth priority (a) to Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys, and (b) to Palo Verde Irrigation District for use exclusively on 16,000 acres in that area known as the "Lower Palo Verde Mesa," adjacent to Palo Verde Irrigation District, for beneficial consumptive use, 300,000 acre-feet of water per annum. The rights designated (a) and (b) in this section are equal in priority.

SEC. 7. A seventh priority of all remaining water available for use within California, for agricultural use in the Colorado River Basin in California, as said basin is designated on Map No. 23000 of the Department of the Interior, Bureau of Reclamation.

SEC. 8. So far as the rights of the allottees named above are concerned, the Metropolitan Water District of Southern California and/or the City of Los Angeles shall have the exclusive right to withdraw and divert into its aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said District and/or said City (not exceeding at any one time 4,750,000 acre-feet in the aggregate) by reason of reduced diversions by said District and/or said City; provided, that accumulations shall be subject to such

conditions as to accumulation, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between said District and/or said City and such users resulting therefrom.

SEC. 9. In addition, so far as the rights of the allottees named above are concerned, the City of San Diego and/or County of San Diego shall have the exclusive right to withdraw and divert into an aqueduct any water in Boulder Canyon Reservoir accumulated to the individual credit of said City and/or said County (not exceeding at any one time 250,000 acre-feet in the aggregate) by reason of reduced diversions by said City and/or said County; provided, that accumulations shall be subject to such conditions as to accumulations, retention, release, and withdrawal as the Secretary of the Interior may from time to time prescribe in his discretion, and his determination thereof shall be final; provided further, that the United States of America reserves the right to make similar arrangements with users in other States without distinction in priority, and to determine the correlative relations between the said City and/or said County and such users resulting therefrom.

SEC. 10. In no event shall the amounts allotted in this agreement to the Metropolitan Water District of Southern California and/or the City of Los Angeles be increased on account of inclusion of a supply for both said District and said City, and either or both may use said apportionments as may be agreed by and between said District and said City.

SEC. 11. In no event shall the amounts allotted in this agreement to the City of San Diego and/or to the County of San Diego be increased on account of inclusion of a supply for both said City and said County, and either or both may use said apportionments as may be agreed by and between said City and said County.

SEC. 12. The priorities hereinbefore set forth shall be in nowise affected by the relative dates of water contracts executed by the Secretary of the Interior with the various parties.

The Secretary reserves the right to, and the District agrees that he may, contract with any of the allottees above named in accordance with the above-stated recommendation, or, in the event that such recommendation as to Palo Verde Irrigation District is superseded by an agreement between all the above allottees or by a final judicial determination, to contract with the Palo Verde Irrigation District in accordance with such agreement or determination; Provided, that priorities numbered fourth and fifth shall not thereby be disturbed.

The use of water by the District shall be in conformity to the following provisions of that certain agreement executed between the District and Imperial Irrigation District dated February 14th, 1934, hereinabove in Article 4 (c) referred to, to wit:

"Imperial Irrigation District shall have the prior right for irrigation and potable purposes only, and exclusively for use in the Imperial Service Area, as hereinafter defined or hereunder modified, to all

waters apportioned to said Imperial Irrigation District and other lands under or that will be served from the All-American Canal in Imperial and Coachella Valleys as provided in the third and sixth priorities set out in the recommendation of the Chief of the Division of Water Resources of the State of California, as contained in Article 17 of the Imperial Contract. Subject to said prior right of Imperial Irrigation District, Coachella Valley County Water District shall have the next right, for irrigation and potable purposes only and exclusively for use in the Coachella Service Area, as hereinafter defined or hereunder modified, to all waters so apportioned to said Imperial Irrigation District and other lands under or that will be served from the All-American Canal in the Imperial and Coachella Valleys, as provided in said third and sixth priorities. The use of water for generation of electric energy shall be, in all respects, secondary and subservient to all requirements of said two districts for irrigation and potable purposes as above limited.

"As hereinabove used, the term 'Imperial Service Area' shall comprise all lands within the boundaries of Imperial Irrigation District as said District was constituted on June 25, 1931, and all lands in Imperial and San Diego Counties, California, shown on Map marked Exhibit 'A', attached to said Imperial Contract, and included within hatched border lines indicated on said map by legend as 'Boundary of Additional Areas in Proposed Enlarged Imperial Irrigation District,' other than (a) such of said lands as are labeled 'Dos Palmas Area' and (b) such of said lands as lie West of Salton Sea and North of the Northerly boundary line of Township 11, South of the San Bernardino Base Line. The term 'Coachella Service Area' shall comprise all lands described on statements hereto attached and marked Exhibits 'B,' 'C,' 'D,' and 'E,' respectively,"

(said Exhibits "B," "C," "D," and "E" being identical with Exhibits "B," "C," "D," and "E" attached to this contract between the District and the United States),

"being approximately, but not exactly, the lands within said hatched border lines shown on said Exhibit 'A,' other than those included in said Imperial Service Area. Upon application of either District and with the written consent of the Secretary of the Interior, the boundaries of the service area which such district is entitled hereunder to serve may at any time or from time to time be changed, but may not be so changed as, in the aggregate, to add more than 5,000 acres to, nor to subtract more than 5,000 acres from such service area, as herein defined, without the written consent of the district entitled hereunder to serve the other service area."

As far as reasonable diligence will permit said water shall be delivered as ordered by the District, and as reasonably required for potable and irrigation purposes within said Coachella Service Area. This contract is for permanent water service but is subject to the condition that Boulder Dam and Boulder Canyon Reservoir shall be used; first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of perfected rights in pursuance of Article VIII of the Colorado River

Compact; and third, for power. This contract is made upon the express condition and with the express covenant that the District and the United States shall observe and be subject to, and controlled by said Colorado River Compact, in the construction, management, and operation of Boulder Dam, Imperial Dam, All-American Canal, and other works and the storage, diversion, delivery, and use of water for the generation of power, irrigation, and other purposes. The United States reserves the right to temporarily discontinue or reduce the amount of water to be delivered for the purpose of investigation, inspection, maintenance, repairs, replacements, or installation of equipment and/or machinery at Boulder Dam, but as far as feasible the United States will give the District reasonable notice in advance of such temporary discontinuance or reduction. The United States, its officers, agents, and employees shall not be liable for damages when, for any reason whatsoever, suspension or reductions in delivery of water occur. This contract is without prejudice to any other or additional rights which the District may now have not inconsistent with the foregoing provisions of this article, or may hereafter acquire in or to the waters of the Colorado River. Subject to the provisions of Article fourteen (14) hereof, nothing in this contract shall be construed to prevent the diversion by or for the District of water to the full capacity herein provided for it in the All-American Canal if and when water over and above the quantity apportioned to it hereunder is available, and no power development at Imperial and/or Laguna Dam shall be permitted to interfere with such diversion by or for said District, but, except as provided in Article twenty-one (21) hereof, water shall not be diverted, transported, nor carried by or through Imperial Dam or All-American Canal for any agency other than the District or Imperial Irrigation District, except by written consent of the Secretary.

MEASUREMENT OF WATER

ART. 18. The water which the District receives under the apportionment as provided in Article seventeen (17) hereof shall be measured at such point or points on the canal as may be designated by the Secretary. Measuring and controlling devices shall be furnished and installed by the United States as a part of the work provided for herein, but shall be operated and maintained by and at the expense of the district, or districts, operating the works. They shall be and remain at all times under the complete control of the United States, whose authorized representatives may at all times have access to them over the lands and rights-of-way of the District.

RECORD OF WATER DIVERTED

ART. 19. The District shall make full and complete written reports as directed by the Secretary, on forms to be supplied by the United States, of all water diverted from the Colorado River, and delivered to the District, and the disposition thereof. The records and data from which such reports are made shall be accessible to the United States on demand of the Secretary.

REFUSAL OF WATER IN CASE OF DEFAULT

ART. 20. The United States reserves the right to refuse to deliver water to the District in the event of default for a period of more than twelve (12) months in any payment due the United States under this contract, or in the discretion of the Secretary to reduce deliveries in such proportion as the amount in default by the District bears to the total amount due. It is understood, however, that the provisions of this article shall not relieve the District of its obligation hereunder to divert, transport and deliver water for the use and benefit of other agencies with whom the United States may contract for the diversion, transportation, and delivery of water through or by the works to be constructed under the terms hereof. The United States further reserves the right to forthwith assume control of all or any part of the works to be constructed hereunder and to care for, operate and maintain the same, so long as the Secretary deems necessary or advisable, if, in his opinion, which shall be final and binding upon the parties hereto, the District does not carry out the terms and conditions of this contract to their full extent and meaning. In such event, the District's pro rata share of the actual cost of such care, operation, and maintenance by the United States shall be repaid to the United States, plus fifteen per centum (15%) to cover overhead and general expense, on March first of each year immediately succeeding the calendar year during which said works are operated and maintained by the United States. Nothing herein contained shall relieve the District of the obligation to pay in any event all installments and penalties provided in this contract.

USE OF WORKS BY THE UNITED STATES AND OTHERS

ART. 21. The United States also reserves the right to, and the District agrees that it may, at any time prior to the transfer of constructed works to the District or Imperial Irrigation District for operation and maintenance, increase the capacity of such works and contract for such increased capacity with other agencies for the delivery of water for use in the United States. Such other agencies shall have the privilege at any time of utilizing by contract or other-

wise, such power possibilities as may exist upon said canal in proportion to their respective contributions or obligations toward the capital cost of said canal and appurtenant structures from and including the diversion works to the point where each respective power plant may be located. In the event other agencies thus contract with the United States, each of such agencies shall assume such proportion of the total cost of said works to be used jointly by such agency and the District, including Laguna Dam, as the Secretary may determine to be equitable and just but not less than the proportion that the capacity provided for such agency in such works bears to the total capacity thereof (except in that part thereof above Syphon Drop including Laguna Dam, in which part the proportion which such other agency shall assume shall be not less than the proportion that the capacity provided for such agency therein bears to the total capacity thereof less the capacity to be provided without cost to and for the Yuma Project) and the District's financial obligations under this contract shall be adjusted accordingly. In no event shall construction costs chargeable to the District be increased by reason of additional capacity being provided for any such agency or agencies or contract or contracts having been made with same. Any such agency thus contracting shall also be required to reimburse the District in such amounts and at such times as the Secretary may determine to be equitable and just for payments theretofore made by the District for the right to use Laguna Dam.

TITLE TO REMAIN IN THE UNITED STATES

ART. 22. Title to the aforesaid Imperial Dam and All-American Canal shall be and remain in the United States notwithstanding transfer of the care, operation, and maintenance thereof to said two districts, or either of them; provided, however, that the Secretary may, in his discretion, when repayment to the United States of all moneys advanced shall have been made, transfer the title to said main canal and appurtenant structures, except the diversion dam and the main canal and appurtenant structures down to and including Syphon Drop, to the districts or other agencies of the United States having a beneficial interest therein in proportion to their respective capital investments under such form of organization as may be acceptable to him.

RULES AND REGULATIONS

ART. 23. There is reserved to the Secretary the right to prescribe and enforce rules and regulations not inconsistent with this contract governing the diversion and delivery of water hereunder to or for the District and to other contractors. Such rules and regulations may be modified, revised and/or extended from time to time after notice to the

District and opportunity for it to be heard, as may be deemed proper, necessary, or desirable by the Secretary to carry out the true intent and meaning of the law and of this contract, or amendments thereof, or to protect the interests of the United States. The District hereby agrees that in the operation and maintenance of the Imperial Dam and All-American Canal, all such rules and regulations will be fully adhered to by it.

INSPECTION BY THE UNITED STATES

ART. 24. The Secretary may cause to be made from time to time a reasonable inspection of the works constructed by the United States to the end that he may ascertain whether the terms of this contract are being satisfactorily executed by the District. Such proportion of the actual expense of such inspection in any calendar year, as shall be found by the Secretary to be equitable and just, shall be paid by the District to the United States on March first of each year immediately following the year in which such inspection is made, and upon statement to be furnished by the Secretary. The Secretary or his representative shall at all times have the right of ingress to and egress from all works of the District for the purpose of inspection, repairs, and maintenance of works of the United States, and for all other purposes.

ACCESS TO BOOKS AND RECORDS

ART. 25. The officials or designated representatives of the District shall have full and free access to the books and records of the United States, so far as they relate to the matters covered by this contract, with the right at any time during office hours to make copies of and from the same; and the Secretary shall have the same right in respect of the books and records of the District.

DISPUTES OR DISAGREEMENTS

ART. 26. Disputes or disagreements as to the interpretation or performance of the provisions of this contract, except as otherwise provided herein, shall be determined either by arbitration or court proceedings, the Secretary being authorized to act for the United States in such proceedings. Whenever a controversy arises out of this contract, and the parties hereto agree to submit the matter to arbitration, the District shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within thirty (30) days after their first meeting, such arbitrators not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the

Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

INTEREST AND PENALTIES

ART. 27. No interest shall be charged on any installments of charges due from the District hereunder except that on all such installments or any part thereof, which may remain unpaid by the District to the United States after the same become due, there shall be added to the amount unpaid a penalty of one-half of one per centum ($\frac{1}{2}\%$) and a like penalty of one-half of one per centum ($\frac{1}{2}\%$) of the amount unpaid shall be added on the first day of each month thereafter so long as such default shall continue.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

ART. 28. This contract is made upon the express condition and with the express understanding that all rights based upon this contract shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes," which compact was approved by the Boulder Canyon Project Act.

APPLICATION OF RECLAMATION LAW

ART. 29. Except as provided by the Boulder Canyon Project Act, the reclamation law shall govern the construction, operation, and maintenance of the works to be constructed hereunder.

CONTRACT TO BE AUTHORIZED BY ELECTION AND CONFIRMED BY COURT

ART. 30. The execution of this contract by the District shall be authorized by the qualified electors of the District at an election held for that purpose. Thereafter, without delay, the District shall prosecute to judgment proceedings in court for a judicial confirmation of the authorization and validity of this contract. The United States shall not be in any manner bound under the terms and conditions of this contract unless and until a confirmatory final judgment in such proceedings shall have been rendered, including final decision, or pending appellate action if ground for appeal be laid. The District shall without delay and at its own cost and expense furnish the United States for its files, copies of all proceedings relating to the election upon this contract and the confirmation proceedings in con-

nection therewith, which said copies shall be properly certified by the Clerk of the Court in which confirmatory judgment is obtained.

METHOD OF DETERMINING NET POWER PROCEEDS

ART. 31. In determining the net proceeds for each calendar year from any power development which the district is hereunder authorized to make, on the All-American Canal, to be paid into the Colorado River Dam fund as provided in Article fourteen (14) hereof, there shall be taken into consideration all items of cost of production of power, including but not necessarily limited to amortization of and interest on capital investment in power development, replacements, improvements, and operation and maintenance, if any. Any other proper factor of cost not here expressly enumerated may be taken into account in determining the net proceeds.

CONTINGENT UPON APPROPRIATIONS

ART. 32. This contract is subject to appropriations or allocations being made by Congress or other Governmental financing authority from year to year of moneys sufficient to do the work provided for herein, and to there being sufficient moneys available in the Colorado River Dam fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents, or employees, by reason of sufficient moneys not being so appropriated nor on account of there not being sufficient moneys in the Colorado River Dam fund to permit of said allotments. If more than three years elapse after this contract becomes effective and before appropriations or allocations are available to permit the United States to make expenditures hereunder, the District may, at its option, upon giving sixty (60) days' written notice to the Secretary, cancel this contract. Such option shall be expressed by vote of the electors of the District with the same formalities as required for the authorization of contracts with the United States.

ADDITION OF LANDS TO DISTRICT

ART. 33. (a) The District agrees to change its boundaries, subject to presentation to its Board of Directors before January 1, 1940, of lawful and sufficient petition or petitions therefor and the approval of the electors, so as to add to the District and to its Improvement District No. 1 all lands lying within the Salton Area, referred to in Article 10 (d) hereof.

(b) Whenever any of said lands within the Coachella Service Area are added to the District, the Secretary, on behalf of the United States, hereby consents to such addition. Nothing contained in this

contract shall impair any right or remedy of any person entitled to object or protest against the addition to the District of any particular tract or tracts of land, nor impair the power of the Board to hear and determine any such objections or protests.

(c) Notwithstanding anything herein contained, the District may, at its option, change its boundaries so as to add to the District all or any part of the Dos Palmas Area, and/or of the Fish Springs Area, referred to in Article 10 (d) hereof. In the event any lands within said Dos Palmas Area or Fish Springs Area shall be added to the District such addition shall be made upon conditions substantially as herein-after contained and as and when authorized by law, and the Secretary on behalf of the United States hereby requires and consents to such conditions, to wit:

CONDITION No. 1

CONTRIBUTION TO CAPITAL COSTS

The lands within each Improvement District shall collectively bear that proportion of all costs of the Imperial Dam, and All-American Canal, including Laguna Dam, herein agreed to be borne by the District, which the area within such Improvement District bears to the total area of the Coachella Service Area from time to time within the District.

CONDITION No. 2

CONTRIBUTION TO COSTS PAID BY-DISTRICT

Each Improvement District, other than Improvement District No. 1, shall bear, in the proportion set out in Condition No. 1, its share of all capital costs of the Imperial Dam and All-American Canal, including Laguna Dam, paid by the District prior to the first District tax collection from the lands within such Improvement District and shall pay such share to the District in such installments and at such times as shall be determined by resolution of the Board of Directors of the District to be just and equitable. Upon collection of said sums by the District, the portions of the Coachella Service Area by which said sums were originally paid shall thereupon be entitled to reimbursement or credit in such manner as may be determined by said Board.

CONDITION No. 3

DISTRIBUTION SYSTEM

Each Improvement District shall bear the entire capital cost of any distribution system which may be constructed by or under the authority of the District to serve the lands within such Improvement District but shall not be required to bear any part of the capital cost of any distribution system to serve the lands within any other Improvement District.

CONDITION No. 4

TAXATION

All charges hereunder to be borne by each Improvement District unless otherwise collected from the lands therein, shall be a part of but in addition to the annual taxes upon said lands for other District purposes and shall constitute an

ALL-AMERICAN CANAL—1934 COACHELLA CONTRACT A657

additional annual charge upon said lands, to be levied upon an ad valorem or other basis as now or hereafter provided by law.

RIGHTS RESERVED UNDER SECTION 3737 REVISED STATUTES

ART. 34. All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

ART. 35. Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States, the District or Imperial Irrigation District of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any other provision hereof or of a subsequent breach of such provision.

INTEREST IN CONTRACT NOT TRANSFERABLE

ART. 36. No interest in this contract is transferable by the District to any other party, and any such attempted transfer shall cause this contract to become subject to annulment at the option of the United States.

MEMBER-OF-CONGRESS CLAUSE

ART. 37. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

CONTRACT VOID IF CERTAIN LANDS INCLUDED IN IMPERIAL IRRIGATION DISTRICT

ART. 38. In the event lawful petition or petitions sufficient in all respects for inclusion within Imperial Irrigation District of ninety per centum (90%) of the lands shown on said Exhibit A lying North of the Northerly boundary line of Township Eleven (11), South of the San Bernardino Base Line and bounded by the lines indicated on said Exhibit A as "Boundary of Additional Areas in Proposed Enlarged Imperial Irrigation District," exclusive of the Dos Palmas area and exclusive of Indian lands and public lands of the United States shall be filed pursuant to and within the time limited by said Imperial Contract, and said lands shall be thereafter included within said Imperial Irrigation District pursuant to such petition or petitions,

then, as of the date of such inclusion, this contract shall terminate and be at an end.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By HAROLD L. ICKES,
*Federal Emergency Administrator of Public Works
and Secretary of the Interior.*

(Initialed) J. H. T.

(Initialed) E. K. B.

COACHELLA VALLEY COUNTY WATER DISTRICT,
By HARRY W. FORBES, *President.*

Attest:

[SEAL]

THELMA SCHISLER, *Secretary.*

(The following exhibits, annexed to the foregoing contract, are omitted here because of limitations of space:

- Exhibit A:* "Bureau of Reclamation map No. 212-D-112, dated at Denver, Colorado, June 23, 1931, and entitled 'Boulder Canyon Project—All-American Canal System'."
- Exhibit B:* "Description of lands within Coachella Valley County Water District and its improvement district No. 1 and within the Coachella service area."
- Exhibit C:* "Description of lands outside Coachella Valley County Water District and within the Coachella service area, designated the Salton Area."
- Exhibit D:* "Description of lands outside Coachella Valley County Water District and within the Coachella service area, designated the Dos Palmas area."
- Exhibit E:* "Description of lands outside Coachella Valley County Water District and within the Coachella service area, designated the Fish Springs area.")

Appendix 1109

ALL-AMERICAN CANAL:

**COACHELLA VALLEY DIVISION, ALL-AMERICAN
CANAL SYSTEM: FINDING OF FEASIBILITY,
JULY 24, 1947 (EXTRACTS)**

(H. Doc. No. 415, 80th Cong., 1st sess.)

**REPORT ON THE COACHELLA VALLEY DIVISION, ALL-
AMERICAN CANAL SYSTEM, BOULDER CANYON
PROJECT, CALIFORNIA**

**LETTER FROM THE SECRETARY OF THE INTERIOR, TRANSMITTING
REPORT PRESENTED TO THE SECRETARY OF THE INTERIOR BY THE
BUREAU OF RECLAMATION OF THIS DEPARTMENT ON JULY 21, 1947,
ON THE COACHELLA VALLEY DIVISION, ALL-AMERICAN CANAL
SYSTEM, BOULDER CANYON PROJECT, CALIFORNIA**

(Extracts only)

* * * * *

THE SECRETARY OF THE INTERIOR,
Washington, July 22, 1947.

The PRESIDENT,
The White House.

MY DEAR MR. PRESIDENT: Transmitted herewith is a copy of a letter to me from the Commissioner of Reclamation, together with a report, which I have approved and adopted, concerning the Coachella Valley division of the All-American Canal system, Boulder Canyon project.

The report deals with the estimated total construction or capital costs of the distribution system including the appurtenant flood-protective works and the allocation of those costs to irrigation and flood control pursuant to sections 7 (b) and 9 of the Reclamation Project Act of 1939.

The Coachella Valley division is an authorized division of the All-American Canal system, Boulder Canyon project, for which construction of the Coachella main canal is well advanced. Repayment of

the cost of the main canal is provided for in a contract dated October 15, 1934, between the United States and the Coachella Valley County water district. Construction of the distribution system and completion of its appurtenant flood-protective works will relieve current serious overdrafts on the rapidly diminishing underground water supply, and will make possible the service of a dependable water supply to more than 75,000 acres of fertile productive lands.

The total estimated cost of the distribution system and appurtenant protective works is found to be \$18,000,000. Exhaustive consideration has been given to the allocation of the total estimated costs of \$18,000,000 to irrigation and flood control, and the allocation that I have approved and adopted is as follows:

Irrigation.....	\$13, 500, 000
Flood control.....	4, 500, 000
Total.....	18, 000, 000

The Reclamation Project Act of 1939 provides that allocations to the purposes of flood control shall be nonreturnable and nonreimbursable. Public Law 121 of the Eightieth Congress, approved by you on June 26, 1947, clarifies my authority for making such an allocation for the Coachella division. As recommended by the Commissioner of Reclamation, I find that the flood-protective works are appurtenant to the distribution system, and as such they are subject to the provisions of sections 7 (b) and 9 of the Reclamation Project Act of 1939.

The basic plan of the distribution system and appurtenant protective works, and the design and construction of the physical features comprising them, have been thoroughly investigated by engineers competent and experienced in such matters. Upon the basis of these investigations I have found that these works have engineering feasibility.

Analysis of repayment ability shows that the project lands can return the costs allocated to irrigation within the repayment period provided by the reclamation laws.

Accordingly, I find that all the estimated reimbursable construction costs of the project which are allocated to irrigation probably can be repaid to the United States by the water users.

The allocation to flood control has been the subject of consultation with the Secretary of War and the Chief of Engineers. The Secretary of War states, as shown in the enclosed copy of his letter of July 18, 1947, that "the basic plan proposed by the Bureau of Reclamation appears to provide for adequate flood-control improvements," and that the allocation of cost to flood control "appears to be in accordance with the intent of Public Law No. 121."

ALL-AMERICAN CANAL—COACHELLA—1947 FINDING A661

Section 9 of the Reclamation Project Act of 1939 authorizes the concurrent submission of this report to you and to the Congress. I have deemed it desirable to present the matter to you first. I expect, however, to present it, and a copy of this letter, to the Congress promptly, unless you have objections.

Sincerely yours,

J. A. KRUG,
Secretary of the Interior.

WAR DEPARTMENT,
Washington, July 18, 1947.

The honorable the SECRETARY OF THE INTERIOR.

DEAR MR. SECRETARY: Further reference is made to your letter dated April 15, 1947, requesting my views on the revised plans of the Bureau of Reclamation for the Coachella division of the All-American Canal irrigation project in California, and the allocation of \$4,500,000 to flood control. Additional information concerning the plans of the Bureau of Reclamation, including copies of their report furnished on July 15, has been made available to this office and to the Chief of Engineers in accordance with my request to you of May 2, 1947.

In view of the special legislation enacted by the Congress in declaring the policy of the United States with respect to the allocation of costs of construction of the Coachella division of the All-American Canal irrigation project, California, which was approved by the President on June 26, 1947, and became Public Law No. 121, the analysis of the Bureau of Reclamation's report thereon has been considered a special case.

In general, the basic plan proposed by the Bureau of Reclamation appears to provide for adequate flood-control improvements. The report of the Senate Committee on Public Lands in reporting on the bill declaring the policy of the United States with respect to the allocation costs of construction of the Coachella division of the All-American Canal irrigation project, California, states in part:

* * * enactment of this bill is necessary in order to clear up any legal doubt of the authority of the Secretary of the Interior to make allocation of the construction costs of the distribution system to flood control since the Coachella Canal is being built under the Boulder Canyon Act * * *.

The cost of the flood control works is estimated by the Bureau of Reclamation at \$4,500,000 which is the allocation to flood control proposed in your report, and appears to be in accordance with the intent of Public Law No. 121.

Sincerely yours,

ROBERT P. PATTERSON,
Secretary of War.

DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington 25, D. C., July 21, 1947.

The SECRETARY OF THE INTERIOR.

SIR: I submit herewith a report of the Bureau of Reclamation on the engineering feasibility, the total estimated cost, and the allocation and probable repayment of costs of the distribution system including the appurtenant flood-control works for the Coachella division, All-American Canal system, Boulder Canyon project.

The report has been prepared pursuant to section 7 (b) of the Reclamation Project Act of 1939, which authorizes the Secretary of the Interior to make allocations of costs in accordance with provisions of section 9 thereof in the case, among others, of supplemental works on a project under construction or for which appropriations had been made at the time of its passage, into which category these works fall.

* * * * *

Pursuant to the requirements of section 9 of the Reclamation Project Act of 1939, the following allocations of the estimated total cost of the distribution system works (\$18,000,000) of the project as at present authorized by law are made as explained in detail in the report.

Irrigation.....	\$13, 500, 000
Flood control.....	4, 500, 000
Total allocations.....	18, 000, 000

An analysis of repayment ability shows that the cost of distribution works allocated to irrigation can be repaid by the water users within the period provided by law, which repayment will be provided for in the contract now under negotiation. These returnable and repayable costs, together with the allocation to flood control which is nonreimbursable, equal the total estimated cost of the distribution system.

I therefore recommend that you approve and adopt the enclosed report and the allocations, determinations, and findings made therein, and transmit the same to the President and to the Congress, pursuant to the Reclamation Project Act of 1939.

Respectfully,

MICHAEL W. STRAUS,
Commissioner.

JULY 21, 1947.

The enclosed report and all the allocations, determinations, and findings set forth therein are hereby approved and adopted.

J. A. KRUG,
Secretary of the Interior.

A REPORT ON THE ENGINEERING FEASIBILITY, THE TOTAL ESTIMATED COST, AND THE ALLOCATION AND PROBABLE REPAYMENT OF THESE COSTS OF THE DISTRIBUTION SYSTEM AND FLOOD CONTROL WORKS, COACHELLA VALLEY DIVISION, ALL-AMERICAN CANAL PROJECT

This report presents an allocation of the estimated capital costs of a distribution system and flood-control works, together with a study of probable repayment for the Coachella Valley Division, All-American Canal system. It has been compiled to comply with the requirements of sections 7 (b) and 9 of the Reclamation Project Act of 1939.

* * * * *

PROJECT FEATURES, THEIR COSTS AND FUNCTIONS

Costs allocated to the Coachella Valley division, All-American Canal project for its proportionate share of the cost of the Imperial Dam and desilting works, main All-American Canal, and Coachella main canal plus the cost of works to be constructed expressly for the use of the Coachella Valley are shown below:

All-American Canal to the Coachella Valley ¹	\$13, 046, 055
Distribution system ²	13, 500, 000
Extension of distribution system to serve Indian lands ²	500, 000
Flood-protection works ²	4, 500, 000
Drainage works ²	2, 000, 000
Total	33, 546, 055

¹ This estimate is preliminary and is subject to change with completion of a cost allocation now underway.
² Latest available estimate.

The character and functions of the project features listed above are as follows:

(a) The Imperial Dam, which is the diversion structure for lands served by the All-American Canal in the Imperial and Coachella Valleys, is located at a point about 18 miles northeast of Yuma, Ariz. The dam is a floating-weir overflow type with a total length of 3,485 feet inclusive of nonoverflow sections, headworks, gate structures, sluiceway, and overflow spillway. The desilting works consists of three settling basins, each of which is approximately 500 by 800 feet and 12½ feet deep with an influent channel through the center. Silt and sand deposited in the basins are removed continuously and mechanically by means of 72 motor-driven, rotating, scraper mechanisms, each 125 feet in diameter. The main canal to the Imperial Valley is 80 miles long, and the Coachella branch canal will be 119 miles long when completed. Capacity of the main All-American Canal is 15,155 cubic feet per second from the Imperial Dam to Siphon Drop on the reservation division of the Yuma project where 2,000 cubic feet per second are diverted for use of that project. From

Siphon Drop to Pilot Knob wasteway, 13,155-cubic-feet-per-second capacity is provided and from Pilot Knob wasteway to canal mile 36.1 (station 1907) where the Coachella canal diverts from the All-American Canal, capacity is 10,155 cubic feet per second. The Coachella canal will have an initial capacity of 2,500 cubic feet per second of which 1,500 cubic feet per second is being constructed wholly for the benefit of lands located in the Coachella Valley. Costs of construction are distributed among the respective water users in accordance with the capacity constructed therefor in the canal and diversion structure. These costs are not subject to allocation in this report.

(b) An underground pipe distribution system for 77,400 acres of irrigable land capable of being served by the Coachella canal will be constructed in accordance with a distribution system contract now being negotiated. Present plans provide for a turn-out of 3-cubic-feet-per-second capacity for each 40 acres of irrigable land. Capacity is included in the pipe system to serve 10,500 acres of Indian land for which distributaries and turn-outs are not proposed for early construction, since the district has not yet reached agreement with the Office of Indian Affairs.

(c) Flood-protection works proposed consist of a system of detention dikes and wasteways to be constructed on the east side of the Coachella Valley below the mouths of side canyons. Detention dike No. 1 with a capacity of 21,000 acre-feet begins near the southeast corner of section 15, T. 7 S., R. 10 E., and extends to within a short distance of United States Highway No. 60-70, northeast of the town of Coachella. It is partly completed. Detention dike No. 2 with a capacity of 18,000 acre-feet is planned for construction in three sections beginning at a point a short distance north of United States Highway No. 60-70 and extending to a point about 2 miles northeast of Myoma. Floodwaters will be stored and released into the Salton Sea and the Whitewater storm channel through a system of wasteways.

(d) The construction of a drainage system will be required for the lands with heavier soils, especially those located on the valley floor in the vicinity of the Salton Sea. The drainage works probably will consist mainly of a system of pump installations which under tentative plans would be constructed by the district. The type and extent of drainage works required cannot be fully appraised until the irrigation system is in operation, and the estimated cost will be subject to revision at a later date.

* * * * *

PROBABILITY OF REPAYMENT

* * * * *

With construction costs for the Coachella main canal estimated at about \$13,000,000, a distribution system estimated at 13.5 million dollars, drainage works estimated at \$2,000,000, and supplemental works to serve Indian lands estimated at \$500,000, the total obligation of the district would approximate \$29,000,000.¹ Assuming that the cost of all work except those to be repaid under the contract of October 15, 1934, are to be repaid in equal annual installments over a 40-year period, the maximum annual obligation would be:

All-American Canal.....	\$390,000
Distribution system.....	350,000
Drainage works.....	50,000
	790,000

Total..... 790,000

Average repayment ability would exceed annual costs by a small margin in an average year and project water users should be able to repay costs herein allocated to irrigation.

* * * * *

SUMMARY OF FINDINGS

The basic plan of the project and the design and construction of the individual features have been the subject of thorough investigation by engineers who are competent and experienced in these matters. The contemplated construction has been determined to be sound after detailed investigation.

It is found that the estimated cost of the works is \$18,000,000. The part of the estimated cost which can properly be allocated to irrigation and probably be repaid by the water users is found to be \$13,500,000. The part of the estimated cost which can properly be allocated to flood control is \$4,500,000.

¹ The cost of constructing the drainage system and extending the lateral system to serve Indian lands is not presently under contract or being considered in contract negotiations. The total obligation now under discussion is therefore 26.5 million dollars.

Appendix 1110

**ALL-AMERICAN CANAL:
CONTRACT FOR CONSTRUCTION OF DISTRIBUTION SYSTEM, PROTECTIVE WORKS, DRAINAGE WORKS ON COACHELLA VALLEY DIVISION**

(Extracts Only)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

ALL-AMERICAN CANAL

COACHELLA VALLEY COUNTY WATER DISTRICT

CONTRACT FOR CONSTRUCTION OF DISTRIBUTION SYSTEM, PROTECTIVE WORKS, AND DRAINAGE WORKS

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2-7 Explanatory Recitals.	18 Title to Remain in the United States.
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9 Construction by the United States and the District.	20 Inspection by the United States.
10 Operation and Maintenance of Constructed Works.	21 Access to Books and Records.
11 Keeping Works and Appurtenant Structures in Repair.	22 Development and Compilation of Data and Keeping of Books, Records, and Reports.
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14 Development Periods and Furnishing of Water During Such Periods.	25 Contract Subject to Colorado River Compact.
15 Terms of Payment.	26 Application of Reclamation Law.
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Article		Article
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31	Contract to be Authorized by Election and Confirmed by Court.	37 Contract of October 15, 1934, to Remain in Full Force and Effect, Except as Herein Modified.
32	Contract Contingent, Upon Appropriations.	38 Priority of Claims of the United States.
33	Notices.	39 Officials Not to Benefit.
34	Rights Reserved under Section 3737, Revised Statutes.	40 Discrimination Against Employees or Applicants for Employment Prohibited.
35	Remedies under Contract not Exclusive.	41 Representative of Secretary.

* * * * *

MODIFICATION OF CONTRACT DATED OCTOBER 15, 1934

8. (a) As one of the considerations for the execution of this contract by the United States it is agreed that the Main (All-American) Canal to Coachella Valley (hereinafter styled "Coachella Main Canal"), shall terminate at Engineer Station 6517, a point near 57th Ave., as shown on Exhibit A attached hereto and by this reference made a part hereof, instead of at the boundary line common to Riverside and Imperial Counties, as shown on Exhibit A attached to the aforesaid contract dated October 15, 1934. As so shortened, said Coachella Main Canal shall be constructed in the approximate location shown on Exhibit A, hereto attached, with such capacities as the Secretary may conclusively determine to be necessary or advisable upon engineering or economic considerations to accomplish the ends contemplated by the aforesaid contract of October 15, 1934, as amended by this contract; provided, however, that such changes in capacities, locations, lengths and alignments may be made during the progress of the work as may, in the opinion of the Secretary, whose opinion shall be final and binding upon the parties hereto, be expedient, economical, necessary or advisable.

(b) Notwithstanding any of the terms or provisions of the aforesaid contract dated October 15, 1934, all work agreed to be performed by the United States thereunder shall be deemed to be completed upon whichever of the following described dates shall first occur:

(1) The date of expiration of five years from and after the date of acceptance by the United States of the work called for by its contract with Otto B. Ashbach and Sons, dated January 10, 1947 (Symbol and Number I2r-17147), for construction of earthwork, concrete canal lining and structures between Engineer Stations 6106+06 and 6517+00 on the Coachella Main Canal, or

(2) The date of completion of the distribution system hereinafter described in Article 9 (a) (i) of this contract, as determined by the Secretary, whose determination thereof shall be final and binding upon the parties hereto.

(c) Following receipt by the District of notice of completion of all work provided for by the aforesaid contract dated October 15, 1934, as determined under the provisions of this contract, payment for such work shall be due and payable from the District to the United States in accordance with the terms of said contract dated October 15, 1934.

* * * * *

CONTRACT SUBJECT TO COLORADO RIVER COMPACT

25. This contract is made upon the express condition and with the express covenant that all rights hereunder shall be subject to and controlled by the Colorado River Compact, approved by Section 13 (a) of the Boulder Canyon Project Act, and the parties hereto shall observe and be subject to and controlled by said Colorado River Compact in the construction, management, and operation of all works provided for herein. It is understood and agreed by the parties hereto that this contract does not deal with the subject of availability of water.

* * * * *

CONTRACT OF OCTOBER 15, 1934, TO REMAIN IN FULL FORCE AND EFFECT,
EXCEPT AS HEREIN MODIFIED

37. Except as modified by the provisions hereof, the aforesaid contract between the United States and the District of date October 15, 1934 (Ilr-781), shall be and remain in full force and effect.

* * * * *

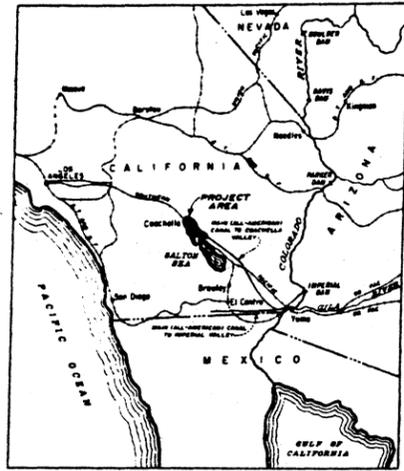
In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By WILLIAM E. WARNE,
Assistant Secretary of the Interior.

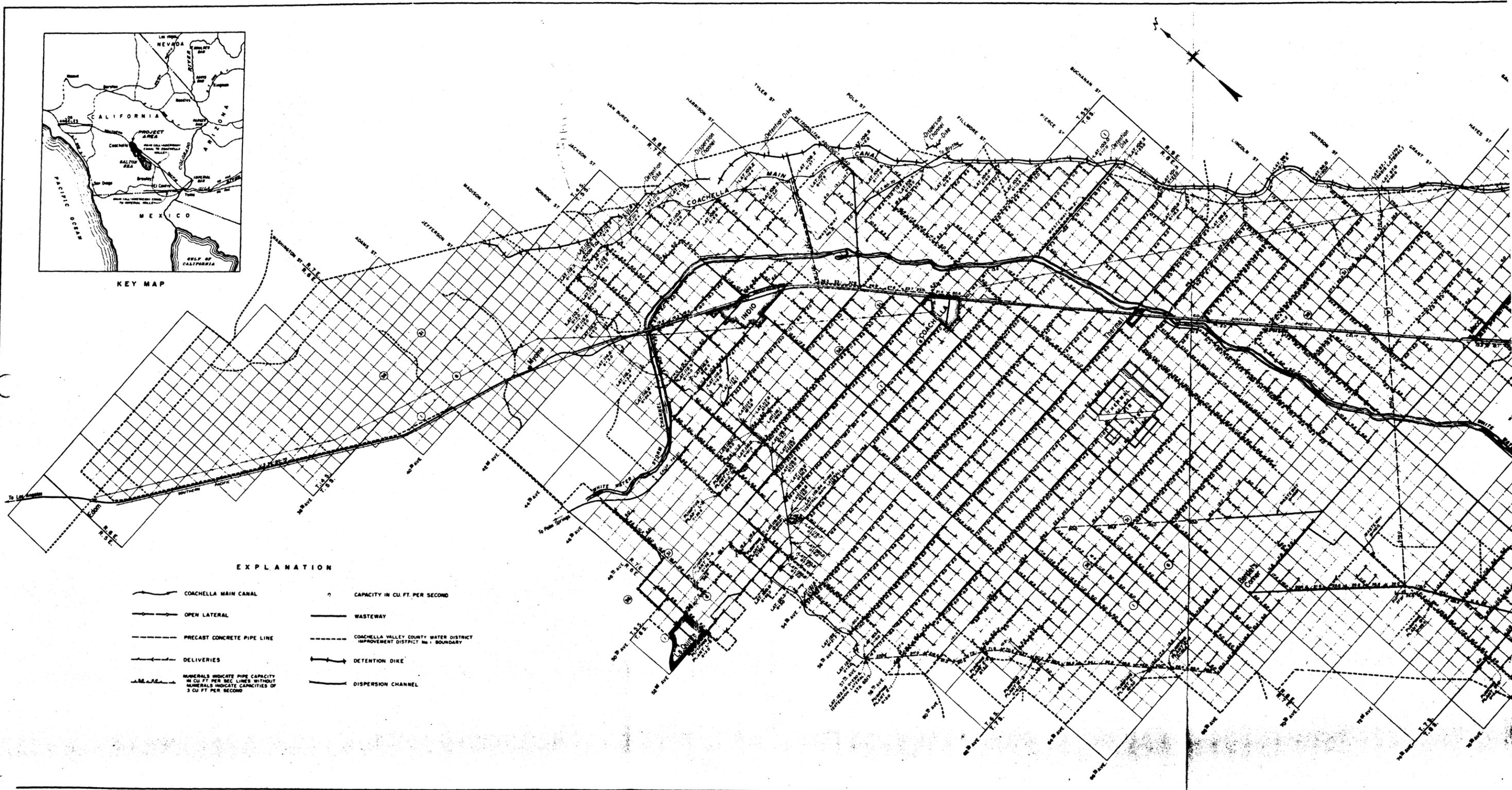
COACHELLA VALLEY COUNTY
WATER DISTRICT,
By /s/ E. KEITH FARRAR,
President.

Attest:

/s/ BARBARA K. SCHMID, *Secretary.*

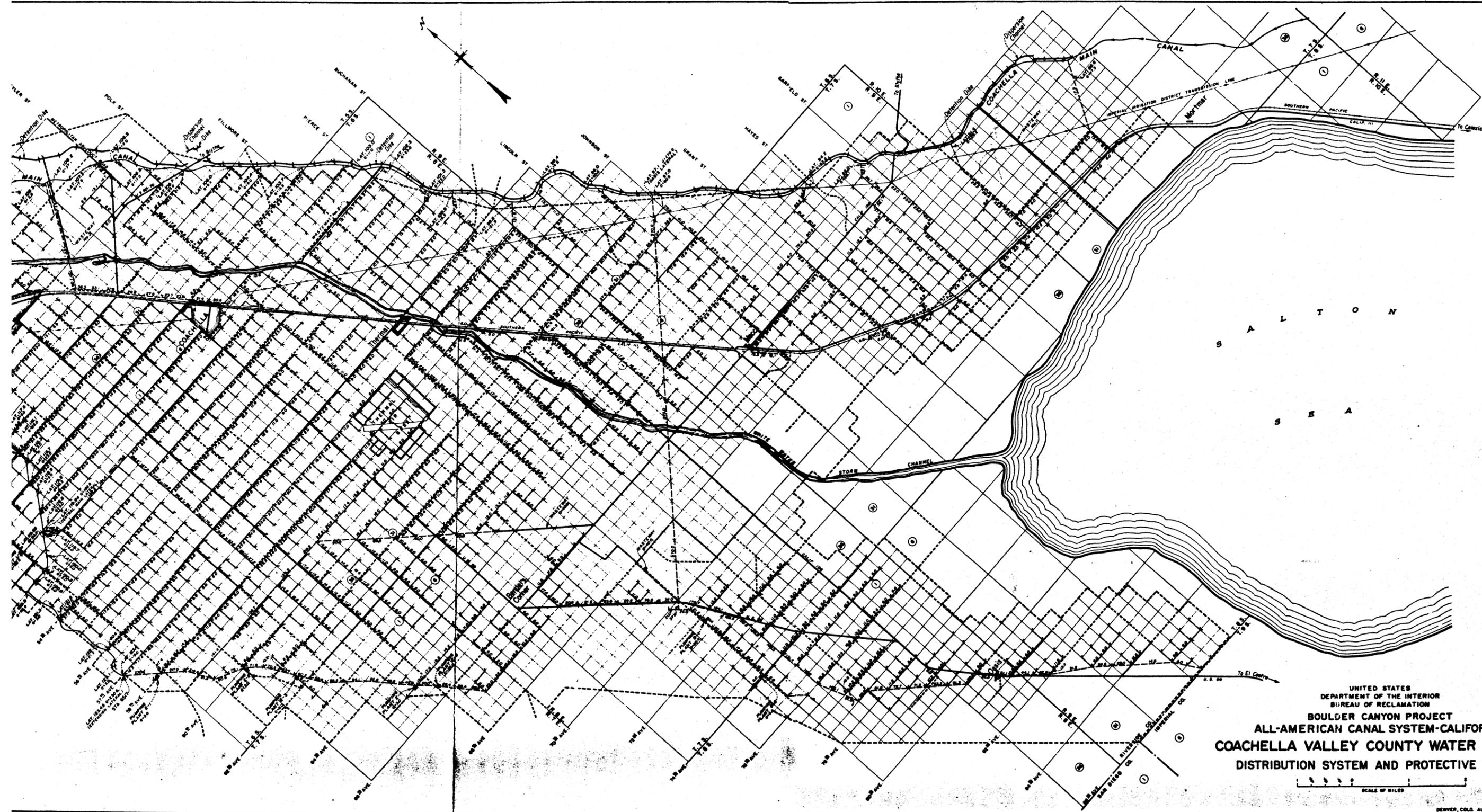


KEY MAP

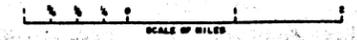


EXPLANATION

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|--|------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------|
| | COACHELLA MAIN CANAL | | CAPACITY IN CU. FT. PER SECOND |
| | OPEN LATERAL | | WASTEWAY |
| | PRECAST CONCRETE PIPE LINE | | COACHELLA VALLEY COUNTY WATER DISTRICT IMPROVEMENT DISTRICT No. 1 BOUNDARY |
| | DELIVERIES | | DETENTION DIKE |
| | NUMERALS INDICATE PIPE CAPACITY IN CU. FT. PER SEC. LINES WITHOUT NUMERALS INDICATE CAPACITIES OF 3 CU. FT. PER SECOND | | DISPERSION CHANNEL |



UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 BOULDER CANYON PROJECT
 ALL-AMERICAN CANAL SYSTEM-CALIFORNIA
COACHELLA VALLEY COUNTY WATER DISTRICT
 DISTRIBUTION SYSTEM AND PROTECTIVE WORKS



DENVER, COLO. AUGUST 1, 1947. D12-9-7400

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Appendix 1111

**ALL-AMERICAN CANAL:
CONTRACT OF SAN DIEGO, OCTOBER 2, 1934**

Symbol Ilr-1151

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT
ALL-AMERICAN CANAL
THE CITY OF SAN DIEGO, CALIFORNIA

CONTRACT FOR CONSTRUCTION OF CAPACITY IN DIVERSION DAM,
MAIN CANAL AND APPURTENANT STRUCTURES

ARTICLE 1. THIS CONTRACT, made this 2d day of October, nineteen hundred thirty-four, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, and the Act of Congress approved June 16, 1933 (48 Stat. 195), designated the National Industrial Recovery Act, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Harold L. Ickes, Secretary of the Interior, hereinafter styled the Secretary, and THE CITY OF SAN DIEGO, a municipal corporation of the State of California, organized under a freeholders' charter, hereinafter referred to as the City;

Witnesseth:

Explanatory recitals

ART. 2. Whereas, for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters for reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, subject to the terms of the Colorado River Compact, is authorized to construct, operate, and maintain a

dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon, adequate to create a storage reservoir of a capacity of not less than twenty million acre-feet of water, and a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam, or other suitable diversion dam, which the Secretary is also authorized to construct if deemed necessary or advisable by him upon engineering or economic considerations, with the Imperial and Coachella Valleys in California, the expenditures for said main canal and appurtenant structures to be reimbursable as provided in the reclamation law; and

ART. 3. Whereas, after full consideration of the advantages of both the Black Canyon and Boulder Canyon dam sites, the Secretary has determined upon Black Canyon as the site of the aforesaid dam, hereinafter styled the Boulder Dam, creating thereby a reservoir to be hereinafter styled the Boulder Canyon Reservoir; and

ART. 4. Whereas (a) there has been executed under date of December 1, 1932, a contract, herein styled Imperial Contract, between the United States and Imperial Irrigation District, an irrigation district created, organized and existing under and by virtue of the laws of the State of California, hereinafter referred to as the District, which contract provides for the construction of a suitable diversion dam and main canal and appurtenant structures, therein and hereinafter respectively styled "Imperial Dam" and "All-American Canal", located entirely within the United States, connecting with the Imperial and Coachella Valleys, and for the delivery to the District of stored water from Boulder Canyon Reservoir; and

(b) There has been executed under date of February 15, 1933, a contract between the United States and the City whereby the City was accorded certain storage rights under the conditions therein stated in said Boulder Canyon Reservoir, and the right under the conditions therein stated to have the United States deliver to the City at a point in the Colorado River immediately above Imperial Dam, the water to which the City may be entitled (estimated in said contract to be 155 cubic feet per second), in accordance with the recommendation of the Chief of the Division of Water Resources of the State of California, set out in said contract; and

(c) The City is now desirous of entering into this contract for the construction of capacity for it in said Imperial Dam and All-American Canal for said 155 cubic feet of water per second, so that the City may transport through said canal for the benefit of the inhabitants of the City, and those of other cities and communities in San Diego County who may hereafter become entitled, with the consent of the Secretary, to use part of said stored water from Boulder Canyon Reservoir, under

said contract of February 15, 1933, this contract to be in harmony with the provisions of said Imperial Contract; and

ART. 5. Whereas the Secretary has determined, upon engineering and economic considerations, that it is advisable to provide for the construction of said Imperial Dam and All-American Canal, and has determined that the revenues provided for by this contract are adequate in his judgment to insure payment of all expenses of construction, operation and maintenance of the capacity in said Imperial Dam and All-American Canal to be constructed hereunder, in the manner provided in the reclamation law;

ART. 6. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

CONSTRUCTION BY UNITED STATES

ART. 7. The United States will construct the Imperial Dam in the main stream of the Colorado River at the approximate location indicated on the map marked "Exhibit A" attached hereto and by this reference made a part hereof, and will also construct the Main (All American) Canal and Main (All American) Canal to Imperial Valley, the approximate location of said Canal to be as shown on the aforesaid Exhibit A. Said Canal shall be so constructed as to provide a designed capacity of one hundred fifty-five (155) cubic feet of water per second, to be used by the City for the benefit of the inhabitants of said city and those of other cities and communities in San Diego County who may hereafter become entitled to use the same with the consent of the City and the Secretary, from and including the diversion and desilting works at said dam to the westerly end of that portion of the All-American Canal designated on said Exhibit A as "Main (All American) Canal" and "Main (All American) Canal to Imperial Valley." The ultimate cost to the City and the District of the Imperial Dam and All-American Canal shall in no event exceed the aggregate sum of thirty million dollars (\$30,000,000.00). Such cost shall include all expenses of whatsoever kind heretofore or hereafter incurred by the United States from the Reclamation Fund or the Colorado River Dam fund in connection with, growing out of, or resulting from the construction of said Imperial Dam and All-American Canal, including but not limited to the cost of labor, materials, equipment, engineering, legal work, superintendence, administration, overhead, any and all costs arising from operation and maintenance of said Imperial Dam and All-American Canal prior to the time that said costs are assumed respectively by the City and the District, damage of all kinds and character and rights of way as hereinafter provided. The City hereby agrees to repay to the United States its share of all expenditures incurred on account of

any and all damages due to the existence, operation or maintenance of the Imperial Dam and All-American Canal, the incurrence of which increases expenditures by the United States beyond the said sum of thirty million dollars (\$30,000,000.00). The City shall repay the same share of said expenditures as the share to be paid by the City under Article 10 (b) hereof of the capital cost of the particular part of said works causing such damage. The United States will invoke all legal and valid reservations of rights-of-way under acts of Congress, or otherwise reserved or held by it, without cost to the City, except that the United States reserves the right where rights-of-way are thus acquired to reimburse the owners of such lands for the value of improvements which may be destroyed, and the City agrees that the United States may include such disbursements in the cost of the Imperial Dam and All-American Canal. If rights-of-way are required over an existing project of the Bureau of Reclamation, such sum or sums as may be necessary to reimburse the United States on account of the construction charges allocated to irrigable areas absorbed in such rights-of-way shall also be considered as a part of and be included with other costs of the Imperial Dam and All-American Canal. The City agrees that the District may convey to the United States, unencumbered fee simple title to any and all lands now owned by it which, in the opinion of the Secretary, may be required for right-of-way purposes for those portions of the Imperial Dam and All-American Canal to be used in common by the City and the District, at the fair market value thereof, to be determined by the Secretary, such value to be considered (as to the City) as a part of and included with other costs of the Imperial Dam and All-American Canal. Where rights-of-way within the State of California are required for the construction of Imperial Dam and All-American Canal, and such rights-of-way are not reserved to the United States under acts of Congress, or otherwise, or the lands over which such rights-of-way are required are not then owned by the District, the City agrees that the District, upon request of the Secretary, may acquire title to any such lands required for such purposes, and convey unencumbered fee simple title thereto to the United States at the actual cost thereof to the District, subject to the approval of such cost by the Secretary.

OPERATION AND MAINTENANCE OF COMMON WORKS

ARTICLE 8. (a) Imperial Dam and All-American Canal designated on said Exhibit A as "Imperial Dam," "Main (All American) Canal," and "Main (All American) Canal to Imperial Valley" and Laguna Dam are herein styled "common works." Upon sixty (60) days' written notice from the Secretary of the completion of construction of the Imperial Dam and All-American Canal, or of any major unit

thereof useful to the District and the City or either of them, as determined by the Secretary, whose determination thereof shall be final and binding upon the parties hereto, the District may assume the care, operation and maintenance of said common works, or major units thereof, and thereafter the District may care for, operate and maintain the same in such manner that such works shall remain in as good and efficient condition and of equal capacity for the diversion, transportation and distribution of water as when received from the United States, reasonable wear and damage by the elements excepted. The United States may, from time to time, in the discretion of the Secretary, resume operation and maintenance of said Imperial Dam upon not less than sixty (60) days' written notice and require re-assumption thereof by the District on like notice. During such times, after completion, as Imperial Dam is operated and maintained by the United States, the City shall on March first of each year advance to the United States its share of the estimated cost of operation and maintenance for the following twelve months, upon estimates furnished therefor on or before September first next preceding. Such share to be advanced by the City shall be in the proportion that the capacity provided for the City in common works above Syphon Drop bears to the total capacity thereof.

(b) From and after the assumption by the District of operation and maintenance of said common works, or any major unit thereof of benefits to the City, the City shall bear such proportion of the cost of operation and maintenance (including repairs and replacements and any charges made by the United States under Article Nine (9) hereof) of each component part of said common works, as the capacity provided for the City in such component part bears to the total capacity thereof. The City agrees, expressly for the benefit of the District, to advance to the District on or before January first of each year its said proportionate share of the estimated cost for that year of such operation and maintenance in accordance with a written notice to be issued to it by the District, provided that payment shall in no event be due until thirty (30) days after receipt of such notice. Prior to March first of each year the District shall provide the City with a written statement showing in detail the cost for the previous year for operation and maintenance of the works on account of which the City has made advances. Differences between actual costs and estimated costs shall be adjusted in the next succeeding notices. Upon request of the City, both the advance notice of estimated costs and the subsequent statement of actual costs for each year shall be reviewed by the Secretary and his determination of proper charges shall be final. Such review shall not change the due date for advance payments as herein provided and the cost of such review shall be borne equally by the District and the City. The District may at its option withhold

delivery of water from the City until its proportionate share of the costs of operation and maintenance has been advanced or paid as in this article provided and until all sums due the District under Article 10 (c) hereof have been paid.

In the event the United States fails to complete the works herein contemplated and the City fails to elect to make use of works theretofore partially or wholly constructed, the City shall be fully relieved of any and all responsibility for maintenance or operation or damage to person or property which may arise therefrom.

**KEEPING DIVERSION DAM, MAIN CANAL, AND APPURTENANT STRUCTURES
IN REPAIR**

ART. 9. Except in case of emergency, no substantial change in any of the works to be constructed by the United States and transferred to the District under the provisions hereof or under said Imperial Contract shall be made by the District, without first having had and obtained the written consent of the Secretary and the Secretary's opinion as to whether any change in any such works is or is not substantial shall be conclusive and binding upon the parties hereto. The District shall promptly make any and all repairs to and replacements of all said works transferred to it under the terms and conditions hereof or under said Imperial Contract which, in the opinion of the Secretary, are deemed necessary for the proper operation and maintenance of such works. In case of neglect or failure of the District to make such repairs, the United States may, at its option, after reasonable notice to the District, cause such repairs to be made and charge the actual cost thereof, plus fifteen per centum (15%) to cover overhead and general expense, to the District. On or before September first of each calendar year the United States shall give written notice to the District of the amount expended by the United States for repairs under this article during the twelve-month period immediately preceding. Such cost, plus overhead and general expense as stated above, shall be repaid by the District on March first immediately succeeding.

**AGREEMENT BY CITY TO PAY FOR CAPACITY CONSTRUCTED FOR IT BY
THE UNITED STATES**

ART. 10. (a) The total estimated cost of the Imperial Dam and All-American Canal as stated in Article 10 of the said Imperial Contract, is thirty-eight million, five hundred thousand dollars (\$38,500,000.00), of which not to exceed thirty million dollars (\$30,000,000.00) represents the total estimated cost of Imperial Dam, the Main (All American) Canal, and the Main (All American) Canal to Imperial Valley. The City agrees to pay the United States

its share, as defined in subarticle (b) of this Article, of the actual total cost not exceeding thirty million dollars (\$30,000,000.00), incurred by the United States on account of such works, subject, however, to the provisions of Article seven (7) hereof; provided, that should Congress and other Governmental financing authorities fail to make necessary appropriations or allocations of money to complete the work herein provided for, then the Secretary may, at such reasonable time as he may consider advisable, after Congress and such other Governmental authorities shall have failed for five (5) consecutive years to make the necessary appropriations or allocations which shall have been annually requested by the Secretary, give the City notice of the termination of work by the United States and furnish a statement of the amount actually expended by the United States thereon. Upon the receipt of such notice by the City, the City shall be given two (2) years from and after such receipt of notice to elect whether it will utilize said works theretofore constructed hereunder, or some particular part thereof. Such election on the part of the City shall be expressed by resolution of the City Council submitted to the electorate of the City for approval or rejection in the manner provided by law. If the City elects not to utilize, or fails within said two-year period to elect to utilize said works constructed hereunder, or some portion thereof, then the City shall have no further rights therein and no obligations therefor. If the City elects to utilize said works or a portion thereof, then the reasonable value to the City of the works so utilized, not exceeding the actual cost thereof to the United States, shall be paid by the City under the terms of this contract; the first payment to be due and payable on the first day of March following the first day of August next succeeding the final determination of the reasonable value to the City of such works, in case no further work is done by the City. Should the City elect to complete the work contemplated by this contract, or some portion thereof, the first payment shall be due and payable on the first day of March following the first day of August next succeeding the date of final completion of the work by the City as determined by the Secretary. In determining the value of such works to the City there shall be taken into account, among other things, the method of financing required and cost of money, so that in no event shall all of the works contemplated by this contract cost the City more than they would have cost the City had they all been constructed by the United States under the terms of this contract. In the event of failure of the parties to agree as to the reasonable value to the City of the works which the City elects to use, the same shall be determined as provided in Article twenty-two (22) hereof.

(b) The amounts herein agreed to be paid by the City to the United States shall be in accordance with the following proportions,

which proportions the Secretary hereby determines to be equitable and just, to wit:

(i) That proportion of the total cost of that part of said common works above Syphon Drop, excepting Laguna Dam, that the capacity provided for the City therein bears to the total capacity thereof less the capacity to be provided without cost to and for the Yuma Project.

(ii) That proportion of the total cost of each component part of all said common works, other than the part above Syphon Drop, that the capacity provided for the City in such part of said works bears to the total capacity thereof.

(c) The City agrees to pay to the United States on the 31st day of December of each year commencing December 31, 1935, a portion (computed in the same manner as its share of costs of common works above Syphon Drop as agreed in Article 10 (b) (i) hereof) of each of the annual payments (together with interest required thereon), then or thereafter required to be made to the United States for a connection with Laguna Dam, under said contract dated October 23, 1918, and under Article sixteen (16) of said Imperial Contract.

The Secretary hereby determines that it is equitable and just that the City pay, and the City agrees, expressly for the benefit of the District, to pay the District the same proportion of the aggregate sum which shall have been paid by the District to the United States prior to December 31, 1935, for a connection with Laguna Dam, as aforesaid, as the proportion herein agreed to be paid by the City to the United States of payments hereafter to be made for said connection with Laguna Dam. The aggregate sum to be paid by the City to the District shall be divided into ten (10) equal instalments, payable annually on March first of each year, commencing on or before the year 1939, with interest from date hereof on unpaid balance at the rate of six per centum (6%) per annum, payable March 1st, 1936, and annually thereafter. At its option, the City may at any time pay any amount on principal of said aggregate sum in advance of the due date and interest on the amount so paid shall thereupon cease.

TERMS OF PAYMENT

ART. 11. The amount herein agreed to be paid to the United States shall be due and payable in not more than thirty-eight (38) annual instalments commencing with the calendar year next succeeding the year when notice of completion of all work provided for herein is given to the City or under the provisions of Article 10 (a) hereof upon termination of work through failure of Congress or other Governmental authorities to make necessary appropriations or allocations therefor. The first five (5) of such annual instalments shall each be one per centum (1%) of the amount herein agreed to be paid to the

United States; the next ten (10) of such instalments shall each be two per centum (2%) of the amount herein agreed to be paid to the United States, the next twenty-one (21) of such instalments shall each be three per centum (3%) of the amount herein agreed to be paid to the United States, and the remainder of such annual instalments shall each be six per centum (6%) of the amount herein agreed to be paid to the United States. The sums payable annually as set forth above shall be divided into two (2) equal semiannual payments, payable on March first and September first of each year; provided, however, that if notice of the completion of work is given to the City subsequent to August first of any year the first semiannual instalment of charges hereunder shall be due and payable on March first of the second succeeding year.

OPERATION AND MAINTENANCE COSTS

ART. 12. Each agency which hereafter contracts for capacity to be provided for it in Imperial Dam and All-American Canal and for which agency capacity is so provided shall bear such proportionate part of the cost of operation and maintenance (including repairs and replacements) of the component parts of Imperial Dam and All-American Canal and of the Laguna Dam as may be determined by the Secretary to be equitable and just, but not less than an amount in proportion to the total amount as are the relative capacities provided in each component part for such agency and for all other agencies, including the City. Each such agency shall advance to the District operating the works provided to be used in common by the District and the City and such agency on or before January first of each year, its proportionate share of the estimated cost for that year of operation and maintenance in accordance with a notice to be issued by the District, provided that payment shall in no event be due until thirty (30) days after receipt of notice. Prior to March 1st of each year the District shall provide each agency with a statement showing in detail the costs for the previous year for operation and maintenance of the works on account of which such agency has made advances. Differences between actual costs and estimated costs shall be adjusted in next succeeding notices. Upon request of any agency, both the advance notice of estimated costs and the subsequent statement of actual costs for each year shall be reviewed by the Secretary and his determination of proper charges shall be final. Such review shall not change the due date for advance payments as herein provided, and the cost of such review shall be borne equally by the requesting agency and the District. The District may, at its option, withhold the delivery of water from any agency until its proportionate share of the costs of operation and maintenance has been advanced or paid, as in this Article provided.

POWER POSSIBILITIES

ART. 13. The power possibilities on the All-American Canal down to and including Syphon Drop with water carried for the benefit of the Yuma Project as provided for in Article fourteen (14) hereof, are hereby reserved to the United States. Subject to this reservation and the participation by other agencies as provided for in Article seventeen (17) hereof, the City shall have the privilege of utilizing by contract or otherwise, by means of the capacity to be provided for the City hereunder, such power possibilities, including those at or near Pilot Knob, as may exist upon said canal in proportion to its relative contribution or obligation toward the capital cost of said canal and appurtenant structures from and including the diversion works to the point where each respective power plant may be located; provided, that such privilege shall not interfere with the utilizing by the District of such power possibilities at or near Pilot Knob, by means of the capacity to be provided for the District in the All-American Canal from Syphon Drop to Pilot Knob, in excess of eight thousand five hundred (8,500) cubic feet of water per second. The net proceeds as hereinafter defined in Article twenty-seven (27) hereof, and as determined by the Secretary for each calendar year, from any power development which the City is hereunder authorized to make, shall be paid into the Colorado River Dam fund on March first of the next succeeding calendar year and be credited to the City on this contract until the City shall have paid thereby and/or otherwise an amount of money equivalent to that herein agreed to be paid to the United States. Thereafter such net power proceeds shall belong to the City. It is agreed that in the event the net power proceeds in any calendar year, creditable to the City, shall exceed the annual instalment of charges payable under this contract during the then current calendar year, the excess of such net power proceeds shall be credited on the next succeeding unpaid instalment to become due from the City under this contract.

DIVERSION AND DELIVERY OF WATER FOR YUMA PROJECT

ART. 14. The City hereby consents that there be diverted at the Imperial Dam, and transported and delivered at Syphon Drop and/or such intermediate points as may be designated by the Secretary, the available water to which the Yuma Project (situated entirely within the United States and not exceeding in area 120,000 acres plus lands lying between the project levees and the Colorado River as such levees were located in 1931) is entitled, not exceeding two thousand (2,000) second-feet of water in the aggregate, or such part thereof as the Secretary may direct, for the use and benefit of said project, including the development of power at Syphon Drop, such water to

be diverted, transported and delivered continuously in so far as reasonable diligence will permit; provided, however, that water shall not be diverted, transported, or delivered for the Yuma Project when the Secretary notifies the District that said project for any reason may not be entitled thereto; provided, further that there may be diverted, transported and delivered such water in excess of requirements for irrigation or potable purposes, as determined by the Secretary, on the Yuma Project as so limited, only when such water is not required by the City under the provisions of its said contract of February 15, 1933. The diversion, transportation and delivery of water for the Yuma Project as aforesaid shall be without expense to the United States or its successors in control of said project, as to capital investment required to provide facilities for such diversion and transportation of water except such checks, turn-outs and other structures required for delivery from said canal.

CONTRACT OF OCTOBER 23, 1918

ART. 15. That certain contract between The United States of America and the District, bearing date of October 23, 1918, providing for a connection with Laguna Dam, having been terminated, except as to the provisions of Article nine (9) thereof, by said Imperial Contract, the City hereby consents to such partial termination of said first mentioned contract. The City hereby consents that there be furnished to the United States or its successors in interest in the control, operation and maintenance of the Yuma Project, from any power development on the All-American Canal at or near Pilot Knob, up to but not to exceed four thousand horsepower of electrical energy for use by the agency in charge of project operations for irrigation and drainage pumping purposes and necessary incidental use on said Yuma Project, such power to be furnished at cost (including overhead and general expense) plus ten per cent; provided, however, that such power at or near Pilot Knob shall not be required to be furnished except at such times as all power feasible of development at Syphon Drop or developed elsewhere within a radius of forty (40) miles from the City of Yuma for the benefit of the Yuma Project is being used for project operations as in this article specified.

REFUSAL OF WATER IN CASE OF DEFAULT

ART. 16. The United States reserves the right to refuse to deliver water to the City in the event of default for a period of more than twelve (12) months in any payment due the United States under this contract, or in the discretion of the Secretary to reduce deliveries in such proportion as the amount in default by the City bears to the total amount due. The United States further reserves the right to

forthwith assume control of all or any part of the works to be constructed hereunder and to care for, operate, and maintain the same, so long as the Secretary deems necessary or advisable, if, in his opinion which shall be final and binding upon the parties hereto, the City does not carry out the terms and conditions of this contract to their full extent and meaning. In such event, the City's pro rata share of the actual cost of such care, operation, and maintenance by the United States shall be repaid to the United States, plus fifteen per centum (15%) to cover overhead and general expense, on March first of each year immediately succeeding the calendar year during which said works are operated and maintained by the United States. Nothing herein contained shall relieve the City of the obligation to pay in any event all instalments and penalties provided in this contract.

USE OF WORKS BY THE UNITED STATES AND OTHERS

ART. 17. The United States also reserves the right to, and the City agrees that it may, at any time prior to the transfer of constructed works to the District for operation and maintenance, increase the capacity of such works and contract for such increased capacity with other agencies for the delivery of water for use in the United States. Such other agencies shall have the privilege at any time of utilizing by contract or otherwise such power possibilities as may exist upon said canal in proportion to their respective contributions or obligations toward the capital cost of said canal and appurtenant structures from and including the diversion works to the point where each respective power plant may be located. In the event other agencies thus contract with the United States, each of such agencies shall assume such proportion of the total cost of said works to be used jointly by such agency and the City, including Laguna Dam, as the Secretary may determine to be equitable and just, but not less than the proportion that the capacity provided for such agency in such works bears to the total capacity thereof (except in that part thereof above Syphon Drop including Laguna Dam, in which part the proportion which such other agency shall assume shall be not less than the proportion that the capacity provided for such agency therein bears to the total capacity thereof less the capacity to be provided without cost to and for the Yuma Project) and the City's financial obligations under this Contract shall be adjusted accordingly. In no event shall construction costs chargeable to the City be increased by reason of additional capacity being provided for any such agency or agencies or contract or contracts having been made with same. Any such agency thus contracting shall also be required to reimburse the City in such amounts and at such times as the Secretary may determine to be equitable and just for payments theretofore made by the City for the right to use Laguna Dam.

TITLE TO REMAIN IN THE UNITED STATES

ART. 18. Title to the aforesaid Imperial Dam and All-American Canal shall be and remain in the United States notwithstanding transfer of the care, operation, and maintenance thereof to said District or other agency; provided, however, that the Secretary may, in his discretion, when repayment to the United States of all moneys advanced shall have been made, transfer the title to said main canal and appurtenant structures, except the diversion dam and the main canal and appurtenant structures down to and including Syphon Drop, to the District, the City or other agencies in the United States having a beneficial interest therein in proportion to their respective capital investments under such form of organization as may be acceptable to him.

RULES AND REGULATIONS

ART. 19. There is reserved to the Secretary the right to prescribe and enforce rules and regulations not inconsistent with this contract governing the diversion and delivery of water hereunder to or for the City and to other contractors. Such rules and regulations may be modified, revised, and/or extended from time to time after notice to the City and opportunity for it to be heard, as may be deemed proper, necessary, or desirable by the Secretary to carry out the true intent and meaning of the law and of this contract, or amendments thereof, or to protect the interests of the United States. The City hereby agrees that in the operation and maintenance of the Imperial Dam and All-American Canal, all such rules and regulations will be fully adhered to by it.

INSPECTION BY THE UNITED STATES

ART. 20. The Secretary may cause to be made from time to time a reasonable inspection of the works constructed by the United States to the end that he may ascertain whether the terms of this and other contracts are being satisfactorily executed by the City and/or other agencies. Such proportion of the actual expense of such inspection in any calendar year, as shall be found by the Secretary to be equitable and just, shall be paid by the City to the United States on March first of each year immediately following the year in which such inspection is made, and upon statement to be furnished by the Secretary. The Secretary or his representative shall at all times have the right of ingress to and egress from all works of the City for the purpose of inspection, repairs, and maintenance of works of the United States, and for all other purposes.

ACCESS TO BOOKS AND RECORDS

ART. 21. The officials or designated representatives of the City shall have full and free access to the books and records of the United States, so far as they relate to the matters covered by this contract, with the right at any time during office hours to make copies of and from the same; and the Secretary shall have the same right in respect of the books and records of the City.

DISPUTES OR DISAGREEMENTS

ART. 22. Disputes or disagreements as to the interpretation or performance of the provisions of this contract, except as otherwise provided herein, shall be determined either by arbitration or court proceedings, the Secretary being authorized to act for the United States in such proceedings. Whenever a controversy arises out of this contract, and the parties hereto agree to submit the matter to arbitration, the City shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within thirty (30) days after their first meeting, such arbitrators not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

INTEREST AND PENALTIES

ART. 23. No interest shall be charged on any instalments of charges due from the City hereunder except that on all such instalments or any part thereof, which may remain unpaid by the City to the United States after the same become due, there shall be added to the amount unpaid a penalty of one-half of one per centum ($\frac{1}{2}\%$) and a like penalty of one-half of one per centum ($\frac{1}{2}\%$) of the amount unpaid shall be added on the first day of each month thereafter so long as such default shall continue.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

ART. 24. This contract is made upon the express condition and with the express understanding that all rights based upon this contract shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed at Santa Fe, New Mexico, November 24, 1922, pursuant to Act of Congress approved August 19, 1921, entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes," which compact was approved by the Boulder Canyon Project Act.

APPLICATION OF RECLAMATION LAW

ART. 25. Except as provided by the Boulder Canyon Project Act, the reclamation law shall govern the construction, operation and maintenance of the works to be constructed hereunder.

CONTRACT TO BE AUTHORIZED BY ELECTION OF ELECTORS OF CITY

ART. 26. The execution of this contract by the City shall be authorized by the vote of two-thirds of the qualified electors of the City voting at an election to be held for that purpose, assenting that the City incur the indebtedness and liability of this contract, and authorizing and directing the City Council to levy annually a tax sufficient to provide for the payment to the United States each year when due each and every of the annual obligations of the City under this contract, or any portion thereof not paid from revenues derived from other sources. The City shall without delay and at its own cost and expense furnish the United States for its files, copies of all proceedings relating to the election upon this contract, which said copies shall be properly certified by the City Clerk of the City of San Diego.

METHOD OF DETERMINING NET POWER PROCEEDS

ART. 27. In determining the net proceeds for each calendar year from any power development which the City is hereunder authorized to make, on the All-American Canal, to be paid into the Colorado River Dam fund as provided in Article thirteen (13) hereof, there shall be taken into consideration all items of cost of production of power, including but not necessarily limited to amortization of and interest on capital investment in power development, replacements, improvements, and operation and maintenance, if any. Any other proper factor of cost not here expressly enumerated may be taken into account in determining the net proceeds.

CONTINGENT UPON APPROPRIATIONS

ART. 28. This contract is subject to appropriations or allocations being made by Congress or other Governmental financing authority from year to year of moneys sufficient to do the work provided for herein, and to there being sufficient moneys available in the Colorado River Dam fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient moneys not being so appropriated nor on account of their not being sufficient moneys in the Colorado River Dam fund to permit of said allotments. If more than three years elapse after this contract becomes effective and before appropriations or allocations are available to permit the United States to make expenditures hereunder, the City may, at its

option, upon giving sixty (60) days' written notice to the Secretary, cancel this contract. Such option shall be expressed by vote of the electors of the City with the same formalities as required for the authorization of this contract.

RIGHTS RESERVED UNDER SECTION 3737 REVISED STATUTES

ART. 29. All rights of action for breach of any of the provisions of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States.

REMEDIES UNDER CONTRACT NOT EXCLUSIVE

ART. 30. Nothing contained in this contract shall be construed as in any manner abridging, limiting or depriving the United States, the City, or the District of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof which it would otherwise have. The waiver of a breach of any of the provisions of this contract shall not be deemed to be a waiver of any other provision hereof or of a subsequent breach of such provision.

INTEREST IN CONTRACT NOT TRANSFERABLE

ART. 31. No interest in this contract is transferable by the City to any other party, without the consent of the United States, and any such attempted transfer shall cause this contract to become subject to annulment at the option of the United States.

MEMBER OF CONGRESS CLAUSE

ART. 32. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By (Sgd.) HAROLD L. ICKES,

Secretary of the Interior.

THE CITY OF SAN DIEGO,
By (Sgd.) RUTHERFORD B. IRONES, *Mayor.*

Approved as to form and legality:

(Sgd.) D. L. AULT, *City Attorney.*

Attest:

[SEAL]

(Sgd.) ALLEN H. WRIGHT, *City Clerk.*

[Exhibit omitted.]

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**RELATED PROJECTS: PARKER DAM
COOPERATIVE CONTRACT FOR CONSTRUCTION
AND OPERATION, FEBRUARY 10, 1933**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

BOULDER CANYON PROJECT

**COOPERATIVE CONTRACT FOR CONSTRUCTION AND OPERATION OF
PARKER DAM**

1. This contract, made this 10th day of February, 1933, pursuant to the act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to the act of Congress approved March 4, 1921 (41 Stat. 1367, 1404), section 25 of the act of Congress approved April 21, 1904 (33 Stat. 189, 224), and the act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, and the "Metropolitan Water District Act" of the Legislature of the State of California (Stats. 1927, Chap. 429), as amended, particularly section 5, subdivision (9) thereof, between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for that purpose by Ray Lyman Wilbur, Secretary of the Interior, hereinafter styled the Secretary, and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation, hereinafter referred to as the District, organized and existing under and by virtue of the laws of the State of California:

Witnesseth:

EXPLANATORY RECITALS

2. Whereas these parties have heretofore on April 24, 1930, and September 28, 1931, entered into two contracts entitled respectively "Contract for Delivery of Water," and "Supplementary Contract for Delivery of Water," which said contracts provide, among other things, for the delivery by the United States to the District each year from the Boulder Canyon Reservoir of quantities of water at a point in the Colorado River immediately above the District's point of diversion

(at or in the vicinity of the proposed Parker Dam hereinafter referred to), and have also entered into two contracts (dated April 26, 1930, and May 31, 1930), for the purchase by the District from the United States of certain quantities of electrical energy to be generated at Hoover Dam, for the pumping of said water into and in an aqueduct to be constructed by the District; and

3. Whereas the said point of delivery and the proposed Parker Dam are approximately ten (10) miles above the boundaries of the Colorado River Indian Reservation as designated by the act of Congress approved March 3, 1865 (13 Stat. 559), and there are now being irrigated, by pumping, approximately 6,000 acres of land within said reservation, and water has been reserved and appropriated pursuant to said act as amended or supplemented and particularly by the act of April 4, 1910 (36 Stat. 273), for additional lands within said reservation susceptible of irrigation from the Colorado River, the reclamation of which will require diversion from the River by construction of a dam, or by pumping or both, and will require drainage of said lands by pumping, for all of which electrical energy is needed; and

4. Whereas there are also in Arizona additional public and other lands in the vicinity of said reservation and also in the Gila Valley, susceptible of irrigation from the Colorado River, but requiring pumping for such purposes, for which electrical energy will be needed, and the United States has now under way an investigation of possible reclamation of such areas as authorized by section fifteen (15) of the said Boulder Canyon Project Act; and

5. Whereas the reclamation of said Indian and public and other lands will be rendered more feasible by the availability of stored water and electrical energy at the proposed Parker Dam, and the floods of the tributaries of the Colorado River between Hoover Dam and Parker Dam will be controlled, and navigation improved, by said dam; and

6. Whereas the Secretary is authorized by said act of April 21, 1904 (33 Stat. 224), to build the proposed Parker Dam for the reclamation of all or any portion of the irrigable lands on the Yuma and Colorado River Indian Reservations in California and Arizona; and such authority has been reserved in the Arizona Enabling Act (act of June 20, 1910) (36 Stat. 570, 575); and

7. Whereas the District is engaged in a project involving the construction of an aqueduct for the purpose of diverting and conveying water from the Colorado River to the metropolitan area of Southern California for domestic, municipal, and other useful purposes, and as a means of such diversion, desires storage in the main stream of the Colorado River at the site of the proposed Parker Dam, for the purpose, among others, of desilting water, reducing pump lift and developing incidental electric energy for pumping water into and in said aqueduct

and other uses subordinate to the said aqueduct project, and the District desires to utilize the proposed Parker Dam in common with the United States and is willing to pay to the United States the entire capital cost of construction of said dam, as hereinafter set forth, and is further willing that one-half of the power privilege created by said dam shall be reserved to the United States¹ for the purposes of irrigation and drainage of lands in Arizona within the Colorado River Indian Reservation, as now constituted, and Gila or Gila-Parker Project without contribution by the United States to the capital cost of the proposed dam, as hereinafter set forth, and is also willing that the dam be utilized by the United States for the storage and diversion of water for the requirements of Indian, public, and other lands in Arizona; and

8. Whereas the Secretary is authorized by the act of Congress approved March 4, 1921, to receive moneys from the District as aforesaid and to effect therewith the construction of the proposed works as though said moneys were specifically appropriated for said purposes; and

9. Whereas funds are not otherwise available for the construction by the United States of said dam and the provision of storage and diversion facilities and of appurtenant works for the irrigation and drainage of said Indian, public, and other lands in Arizona and the cooperative construction of the said dam and works, as herein provided, will be mutually advantageous to the parties hereto, and the cost of said dam and appurtenant works will be materially less if constructed during the period of completion of the Hoover Dam now under construction than would otherwise be the case;

Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to-wit:

CONSTRUCTION BY THE UNITED STATES

10. The United States will, with funds advanced by the District as hereinafter provided, and for the purposes stated in this contract, construct in the main stream of the Colorado River at a point in the vicinity of Parker, Arizona, shown on the map attached hereto and described herein as Exhibit "A", a dam, referred to herein as the Parker Dam, creating thereby a storage reservoir having a maximum water surface elevation of approximately four hundred fifty (450) feet above sea level (U. S. Geological Survey datum). Upon like conditions the United States will also construct outlet works, pressure tunnels, penstocks and other appurtenant structures to the extent that such structures may be necessary and/or economically

¹ The limitation on use of energy contemplated by this recital was modified by amendment. See Article 15 II (b) hereof.

desirable as parts of the original installation, and such facilities for navigation as the Secretary may find necessary. All buildings intended solely for the use of either party hereto shall be constructed at the sole expense of the party for whom such facilities shall be provided. The dam and appurtenant structures shall be so constructed that subsequent installation of diversion or outlet works shall be possible in the most feasible manner for canal connections with lands within the Colorado River Indian Reservation and with public and other lands in Arizona now or hereafter included in projects constructed under the Reclamation Law and supplementary legislation, or otherwise, subject to the consent and approval of the Secretary, and, if either party hereto requires it, so that one-half of the total installed capacity of electrical generating equipment may be located upon the Arizona side of the river and one-half on the California side. Outlet works, pressure tunnels, penstocks, connections for canals and appurtenant structures not required by the District shall be completed under this contract only to the extent necessary to permit their subsequent completion and use without risk of damage to the remainder of the work.

In carrying out the proposed work hereunder and in acquiring supplies, materials, and equipment therefor, the United States may proceed directly under the method commonly referred to as force account, or may proceed by construction contract. In the event that such contract or contracts shall be let with reference to the construction of said dam, or the acquisition of supplies, materials, or equipment therefor, the letting of such contracts shall be governed by the provisions of section 3709, United States Revised Statutes.

FUNDS TO BE PROVIDED BY THE DISTRICT

11. The District will advance to the United States not to exceed the sum of Thirteen Million Dollars (\$13,000,000), or so much thereof as may be (a) the cost of preparation of plans and specifications described in Article 13 hereof; (b) the actual cost of the said dam, including acquisition of lands and rights-of-way for reservoir and other incidental purposes, outlet works, pressure tunnels, and penstocks, to be constructed hereunder, and of the District's proportionate share as determined by the Secretary, of such power plant buildings and generating, transforming, and high-voltage switching equipment as may be installed for the joint use of the United States and the District, and (c) required to meet any overhead and general expense incurred by the United States in carrying out this contract.

Said funds will be furnished to the United States by payment from time to time to the Secretary or such fiscal agent as he may designate in advance of expenditures thereof by the United States. The Secretary will submit estimates of the monthly anticipated expenditures

not less than sixty (60) days in advance, and the District will then advance the amount not less than thirty (30) days prior to the month in which such funds shall be estimated to be required. If the United States effects such construction by contract, such contract shall recite that the United States shall not be liable for any loss occasioned by the failure of the District to advance funds as herein provided. The District agrees to hold the United States harmless from all claims whatsoever arising from any such failure. If the funds provided by the District are at any time insufficient, the United States will stop work (if proceeding under force account), when the funds so advanced are exhausted, or give notice to the construction contractor to stop work (if proceeding by construction contract), when the funds so provided are about to be exhausted, and will not resume or give notice to resume work until additional and sufficient funds are provided by the District; and, in any event, the United States shall not be obligated by this agreement beyond the expenditure of the amount actually provided by the District, whether the proposed works are completed or not. The failure of the District to provide funds shall not impose any liability on the District other than to hold the United States harmless from the consequences thereof, but the United States may be relieved, at its option, of any obligation under this contract, if such failure continues for twelve (12) successive months, after submission of estimate therefor, by the Secretary's giving the District written notice of the termination of any further obligation of the United States hereunder.

The cost of the proposed works shall embrace all expense of whatever kind, growing out of or resulting from said works, including any overhead and general expense (as conclusively estimated by the Secretary) incurred by the United States in carrying out this contract. Nothing contained in this article is to be construed as obligating the United States to expend or Congress to appropriate money for any share of (a) said power plant buildings or (b) said generating, transforming and high voltage switching equipment intended for the joint use of the parties hereto.

NO OBLIGATION BY THE UNITED STATES TO PAY FOR WORKS
CONSTRUCTED

12. The United States shall not be under any obligation to repay to the District, or otherwise contribute toward, the cost of any works built with funds provided by the District.

PREPARATION OF PLANS AND SPECIFICATIONS

13. The designs and specifications for all construction or other work under this contract (including exploratory and preparatory work) shall be prepared by the United States with the cooperation of and

at the cost of the District, and shall be approved in writing by the General Manager and Chief Engineer of the District, or such other officer as the Directors thereof may designate, prior to performance thereof or the letting of contracts for such work.

DURATION OF CONTRACT

14. Upon written notice from the District to the Secretary that funds will be available to carry out the work to be constructed hereunder, the United States agrees to submit within thirty (30) days following such notice its first estimate of funds required during the first thirty (30) days of work hereunder and to proceed thereafter with reasonable diligence. It is contemplated that as far as practicable, the proposed works shall be constructed coincidentally with the construction of Hoover Dam and the filling of the reservoir thereby created and that any contract let by the United States for the erection of Parker Dam shall so provide; but neither the United States nor the District shall incur liability to the other through the noncompletion of said works within said period. This contract shall terminate on December 31, 1945, unless prior thereto the District shall have advanced sufficient funds for all works to be constructed by the United States hereunder, and in the event of such termination, all rights of the District under this contract shall cease, and the uncompleted works, together with the rights to the use thereof, shall vest in the United States.

POWER AND OTHER PRIVILEGES

15. I. The interests of both parties require and it is agreed that the water surface of the reservoir to be created by Parker Dam shall be maintained as nearly as possible at a level of 450 feet above sea level (U. S. Geological Survey datum) at the dam.

II. It is agreed that the United States shall have and may exercise the following rights and such incidental authority as may be necessary to make them effective:

(a) The right to control all water passing the dam; provided, however, that the water level stated in Article 15 (I) hereof shall not be arbitrarily reduced but may be temporarily reduced from time to time to a minimum elevation of 440 feet above sea level, and the water level shall not be reduced below said minimum level except in cases of emergency affecting the safety of the said dam and appurtenant works.

(b) [As amended by Supplemental Contract of April 7, 1939:] The right, without contribution to the cost of the dam built under this contract, to one-half the power privilege created thereby, that is to say, the right to pass through two hydroelectric generating units,

each capable of using efficiently for power generation a flow of at least 5,000 cubic feet per second, one-half the total available flow at Parker Dam at any given time, after deductions for diversions being made above the dam for the District's aqueduct and the right so to utilize such portion of the balance of the power privilege, as aforesaid, as may not be used by the District for the time being.

(c) [As amended by Supplemental Contract of April 7, 1939:] The right to connect, without cost to the District, with such transmission system as the District may construct or cause to be constructed, and the right to utilize, without cost to the United States, any power-transmission capacity of said transmission system which for the time being may be in excess of the District's requirements (as determined by the District), for the purpose of transmitting from Boulder Dam to Parker Dam, firm energy allotted to, but unused by, the District, and disposed of for credit of the District, as provided by the Contract for Electrical Energy dated April 26, 1930, and the Supplemental Contract for Electrical Energy dated May 31, 1930, and Agreement Deferring Payments for Boulder Dam energy dated July 13, 1938, between the United States and said District, and the further right without cost to the United States, to utilize transmission capacity in excess of the capacity required by the District for its own use and for the transmission of energy sold for credit to the District, for the purpose of transmitting any electrical energy from Boulder Dam to Parker Dam to be used solely for construction and/or operation and maintenance purposes of the United States; provided, that the use of such excess capacity at all times shall be subject to reasonable operating conditions fixed by the District.

(d) The right to connect with the Parker Dam and/or the reservoir created thereby by means of a canal (including such outlet and diversion features at Parker Dam as may be necessary or advisable) with lands within the Colorado River Indian Reservation, as now constituted, and with public and other lands in Arizona or California, now or hereafter included in projects constructed under the Reclamation Law and supplementary legislation, or otherwise, subject to the consent and approval of the Secretary, and the right to thereby divert such quantities of water as may be consistent with the Colorado River Compact and the Boulder Canyon Project Act.

III. It is agreed that the District shall have and may exercise the following rights and such incidental authority as may be necessary to make them effective:

(a) [As amended by Supplemental Contract of April 7, 1939:] The right to one-half of the power privilege created by the Parker Dam for the purpose of developing electrical energy; that is to say, the right to pass through two hydroelectric generating units, each capable of using efficiently a flow of at least 5,000 cubic feet per second,

one-half the total available flow at the dam at any given time, after deductions for diversions being made above the dam for the District's aqueduct and the right to utilize for said purpose such portion of the balance of the power privilege as aforesaid as may not be used by the United States for the time being.

(b) The right to divert water from the said Parker Dam and/or the reservoir created thereby, by means of an aqueduct, canal, or other appropriate works (including such outlet and diversion features at Parker Dam as may be necessary or advisable) for domestic, municipal, and other beneficial use within the area of the District, as now or hereafter constituted, in California, and to thereby divert such quantities of water as may be consistent with the Boulder Canyon Project Act, the Colorado River Compact and the said contracts heretofore entered into between the United States and the District and described and referred to in Article 2 hereof.

INSTALLATION OF MACHINERY

16. Machinery and equipment for generating, transforming, and high-voltage switching of energy for the sole use of the District shall be installed, owned and operated by the District at its own expense. The District shall not be liable for the cost of generating or other electrical equipment installed for the sole use of the United States.

OPERATION AND MAINTENANCE OF RESERVOIR, DAM AND OUTLET WORKS

17. The United States will operate and maintain the reservoir, dam and outlet works, to, but not including shut-off valves, and reserves the right to direct the control of all water passing the dam for any and all purposes; provided that contracts now in force between the parties hereto shall not be thereby impaired. So long as the United States shall make no use of the reservoir, the cost of operation and maintenance (which shall include repairs and replacements and a reasonable amount, as determined by the Secretary, for general expenses and overhead, but excluding contingent liabilities and/or damages) shall be paid monthly in advance by the District to the United States within sixty (60) days of submission of estimates therefor. If and when the United States shall use or authorize the use of said reservoir for diversion of water and/or development of power, the annual cost of maintenance and operation of the reservoir and dam (as hereinabove in this paragraph limited and defined) shall be prorated upon the basis of the diversions by each party into their respective aqueducts, canals, and power plants, and shall be paid in direct proportion to the uses so made by the District and the United States.

OPERATION AND MAINTENANCE OF POWER PLANT AND POWER-PLANT BUILDINGS

18. The District will operate and maintain at its own cost all buildings and equipment used solely by it for the generation of electrical energy, from and including shut-off valves. The United States will operate and maintain at its own cost all buildings and equipment used solely by the United States for the generation of electrical energy, subject to the availability of appropriations therefor by Congress, and said operation and maintenance shall be effected by the United States through such agency as the Secretary shall designate.

TITLE

19. Title to the dam and all other structures erected by the United States, whether utilized by it or by the District, or by both, shall remain in the United States.

UNITED STATES TO BE HELD HARMLESS

20. The District agrees to save the United States, its officers, agents, and employees harmless from all claims whatsoever arising out of the construction and maintenance of said dam, and from all claims whatsoever arising out of such operation thereof as may be necessitated by the requirements of the District. The District agrees to pay all damages resulting from the flooding of lands, and, to the extent that lands within the Chimehuevi Indian Reservation are damaged, payment therefor will be made to the United States for the benefit of said Reservation.

ACCESS TO WORK AND TO BOOKS AND RECORDS

21. Accredited officers of the District shall have the right of ingress to and egress from all work done under this contract, both in progress and after completion, and the right at all reasonable hours to examine and make copies of any books, records, drawings or specifications thereof; and the United States shall have a like right as to all pertinent books, records, drawings and specifications of the District. Upon demand and at not less than thirty-day intervals the United States will furnish to the District detailed statement of all costs and expenditures in connection with and/or chargeable against the proposed Parker Dam Project.

EXISTING CONTRACTS BETWEEN THE UNITED STATES AND THE DISTRICT
NOT AFFECTED

22. Existing contracts between the United States and the District shall remain in full force and effect and unaltered by the provisions of this agreement.

TRANSFER OF INTEREST IN CONTRACT

23. No voluntary transfer of this contract, or of the rights hereunder, shall be made without the written approval of the Secretary; and any successor or assign of the rights of the District, whether by voluntary transfer, or otherwise, shall be subject to all the conditions of the Reclamation Law and supplementary legislation, and also subject to all the provisions and conditions of this contract, to the same extent as though such successor or assign were the original contractor hereunder.

RULES AND REGULATIONS

24. This contract is subject to such rules and regulations, conforming to the Reclamation Law and supplementary legislation and other statutes cited in this contract, as the Secretary may from time to time promulgate; provided, however, that no right of the District hereunder shall be impaired or obligation of the District hereunder shall be extended thereby; and provided further, that opportunity for hearing shall be afforded the District by the Secretary prior to promulgation or modification of any such rules and regulations.

AGREEMENT SUBJECT TO COLORADO RIVER COMPACT

25. This contract is made upon the express condition and with the express understanding that all rights hereunder shall be subject to and controlled by the Colorado River Compact, being the compact or agreement signed as Santa Fe, New Mexico, November 24, 1922, pursuant to the act of Congress approved August 19, 1921 (42 Stat. 171), entitled "An Act to permit a compact or agreement between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, respecting the disposition and apportionment of the waters of the Colorado River, and for other purposes," which compact was approved in section 13 (a) of the Boulder Canyon Project Act.

DISPUTES AND DISAGREEMENTS

26. Whenever a controversy arises out of this contract, and if the disputants then agree to submit the matter to arbitration, the District shall name one arbitrator and the Secretary shall name one arbitrator, and the two arbitrators thus chosen shall elect three other arbitrators, but in the event of their failure to name all or any of the three arbitrators within five (5) days after their first meeting, such arbitrators, not so elected, shall be named by the Senior Judge of the United States Circuit Court of Appeals for the Ninth Circuit. The decision of any three of such arbitrators shall be a valid and binding award of the arbitrators.

MEMBER OF CONGRESS CLAUSE

27. No Member of or Delegate to Congress or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom. Nothing, however, herein contained shall be construed to extend to this contract if made with a corporation for its general benefit.

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By RAY LYMAN WILBUR,
Secretary of the Interior.

Attest:

NORTHCUTT ELY.
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By W. P. WHITSETT,
Chairman of the Board of Directors.

Approved as to form:

JAMES H. HOWARD,
General Counsel.

Attest:

[SEAL]

S. H. FINLEY,
Secretary of the Board of Directors.

[Resolution omitted.]

Appendix 1202

**RELATED PROJECTS:
PARKER AND HEAD GATE ROCK DAMS
AUTHORIZED**

(Extract from the act of August 30, 1935, 49 Stat. 1039)

SEC. 2. That for the purpose of controlling floods, improving navigation, regulating the flow of the streams of the United States, providing for storage and for the delivery of the stored waters thereof, for the reclamation of public lands and Indian reservations, and other beneficial uses, and for the generation of electric energy as a means of financially aiding and assisting such undertakings, the projects known as "Parker Dam" on the Colorado River and "Grand Coulee Dam" on the Columbia River, are hereby authorized and adopted, and all contracts and agreements which have been executed in connection therewith are hereby validated and ratified, and the President, acting through such agents as he may designate, is hereby authorized to construct, operate, and maintain dams, structures, canals, and incidental works necessary to such projects, and in connection therewith to make and enter into any and all necessary contracts including contracts amendatory of or supplemental to those hereby validated and ratified. The construction by the Secretary of the Interior of a dam in and across the Colorado River at or near Head Gate Rock, Arizona, and structures, canals, and incidental works necessary in connection therewith is hereby authorized, and none of the waters, conserved, used, or appropriated under the works hereby authorized shall be charged against the waters allocated to the upper basin by the Colorado River compact, nor shall any priority be established against such upper basin by reason of such conservation, use, or appropriation; nor shall said dam, structures, canals, and works, or any of them, be used as the basis of making any such charge, or establishing any such priority or right, and all contracts between the United States and the users of said water from or by means of said instrumentalities shall provide against the making of any such charge or claim or the establishment of any priority right or claim to any part or share of the water of the Colorado River allocated to the Upper Basin by the Colorado River compact, and all use of said instrumentalities shall be in compliance with the conditions and provisions of said Colorado River compact and the Boulder Canyon Project Act.

Appendix 1203

**RELATED PROJECTS: PARKER DAM
"FOREBAY" CONTRACT,
SEPTEMBER 29, 1936**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

PARKER DAM PROJECT
ARIZONA-CALIFORNIA

SUPPLEMENTAL CONTRACT FOR THE CONSTRUCTION OF FOREBAY
AND POWER PLANT SUBSTRUCTURE AT PARKER DAM

1. THIS SUPPLEMENTAL CONTRACT, made this twenty-ninth day of September, nineteen hundred thirty-six, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law, and particularly pursuant to Section 25 of the Act of Congress approved April 21, 1904 (33 Stat. 189, 224), the Act of Congress approved March 4, 1921 (41 Stat. 1367, 1404), the Act of Congress approved December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, and Section 2 of the Act of Congress approved August 30, 1935 (49 Stat. 1039), entitled, "An Act authorizing the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," and authority vested in the Secretary thereunder by the President, and the Metropolitan Water District Act of the Legislature of the State of California (Stats. 1927, Ch. 429, as amended, particularly Section five (5), Subdivision nine (9) thereof) between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by T. A. Walters, Acting Secretary of the Interior, hereinafter styled the Secretary; and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation organized and existing under and by virtue of the laws of the State of California, hereinafter referred to as the District;

Witnesseth:

EXPLANATORY RECITALS

2. Whereas the United States and the District, under date of February 10, 1933, entered into a contract, symbol, and number

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Ilr-712, for the Cooperative construction of Parker Dam, providing, among other things, that each party shall have the right, under the conditions therein stated, to one-half the power privileges created by the construction of said dam; and

3. Whereas the said contract of February 10, 1933, was supplemented and amended in certain particulars by supplemental contract of date August 17, 1934, symbol and number Ilr-712, upon the express condition, as stated in Article eleven (11) thereof, that in event the State of Arizona shall interfere with or obstruct by litigation or otherwise, the construction, operation, or maintenance of the Parker Dam, the said supplemental contract shall be void; and

4. Whereas, under date of November 10, 1934, the Governor of the State of Arizona issued a proclamation declaring martial law and ordering the Arizona National Guard to take possession of the territory surrounding the Arizona side of Parker Dam to prevent the construction thereof, as a result of which a detachment of the Arizona National Guard was mobilized and dispatched to the site of the Parker Dam, thereby causing the issuance of an order by the Secretary under date of November 13, 1934, suspending all construction work on said dam, and, by reason of such matters, said supplemental contract of August 17, 1934, has become void and of no further force or effect; and

5. Whereas for the utilization of the power privileges to be created by the construction of Parker Dam it is mutually advantageous to build the power plant on the California side of the river for the joint use of the United States and the District; and

6. Whereas the necessary forebay and power plant substructure can be constructed more economically while the site is unwatered for construction of the said dam than will be possible thereafter;

7. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree that said contract of February 10, 1933, be amended and supplemented as follows, to wit:

CONSTRUCTION BY THE UNITED STATES

8. (a) The United States will complete the excavation of the forebay for the power plant and will construct on the California side of the river immediately downstream from the dam the substructure of a power plant designed for the ultimate installation of four hydro-electric generating units, each of sufficient capacity to utilize five thousand (5,000) cubic feet of water per second, together with the necessary appurtenant auxiliary and control apparatus and equipment for the delivery of electrical energy to both parties hereto, but this provision shall not be construed to include turbines, generators, transformers or other equipment for actual generation of electrical energy. The power plant substructure shall be designed to form an integral part of the completed power plant structure and shall form

a substantially water-tight enclosure which can be unwatered without a cofferdam so that the power plant can be completed later without interfering with the operation of the dam and without general unwatering of the site outside the limits of the substructure to be built hereunder.

(b) The excavation of the forebay shall consist of the completion of the waterway which was partially constructed under said contract dated February 10, 1933, down to the proposed headgate structure at the upper end of the penstocks. The forebay excavation shall be completed so that four (4) penstock tunnels and the penstock headgate structure can be constructed later, without unwatering the area upstream from the trashrack structure, or in any way interfering with the operation of the dam.

(c) The forebay and power plant substructure shall be constructed concurrently with the construction of Parker Dam and shall be substantially in accordance with drawings 231-D-231 and 231-D-274, prints of which are attached hereto.

FUNDS TO BE PROVIDED BY THE DISTRICT AND BY THE UNITED STATES

9. The District shall provide at times and in the manner as provided in paragraph eleven (11) of said contract of February 10, 1933, sufficient funds to complete the excavation and construction of the forebay. The United States will, subject to the provisions of Article fourteen (14) hereof, provide sufficient funds to construct the foundations and substructure of the power plant. The actual necessary cost of the entire forebay, including trashrack structures and drainage tunnel, and power plant substructure, including the sum of \$156,000 (which sum is hereby agreed upon as the portion of the cost of unwatering the Parker Dam and Power Plant site properly chargeable to the power development and to be included as part of the cost of the additional work to be done hereunder), and including any overhead and general expense not exceeding ten percent (10%) of actual cost of the work, as conclusively determined by the Secretary, incurred by the United States in carrying out this contract, shall be borne equally by the United States and the District. Upon completion of construction of the forebay and appurtenant works and power plant substructure, such payment from one party to the other shall be made or such credits in the Parker Dam account under said contract of February 10, 1933, shall be set up, as may be required to bring about equal contribution to such forebay and substructure costs by the parties hereto.

PREPARATION OF DESIGNS

10. The designs and specifications for all work under this contract will be prepared by the United States, with the cooperation of the District. To the extent that the forebay and the power plant founda-

tion and substructure are designed to be used by the District, detailed plans and specifications therefor shall be subject to the approval of the District. The Power Plant shall be designed to develop, in the most practical and efficient manner, the power requirements of both parties with full consideration of the rights of each party to utilize one-half of the power available as provided in the contract of February 10, 1933.

PROCEEDING WITH CONSTRUCTION OF POWER PLANT

11. [NOTE.—Subdivisions (a), (b) and (c) of Article 11 canceled by Supplemental Contract of April 7, 1939.]

(d) Subject to the right of the District, as herein set out, title to the works constructed hereunder shall be and remain in the United States.

OPERATION OF POWER PLANT

[NOTE.—Article 12 canceled by Supplemental Contract of April 7, 1939.]

EFFECT ON OTHER CONTRACTS

13. In all other respects the provisions of said contract of February 10, 1933, shall remain unaffected by the provisions hereof, but the aforesaid supplemental contract of date August 17, 1934, is hereby agreed to be of no further force or effect because of the matters stated in Articles three (3) and four (4) hereof.

CONTRACT CONTINGENT UPON APPROPRIATIONS

14. This contract is subject to appropriations being made by Congress from year to year of moneys sufficient to do the work provided for herein and to there being sufficient moneys available in the Reclamation Fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents, or employees by reason of sufficient moneys not being so appropriated nor on account of there not being sufficient moneys in the Reclamation Fund to permit of said allotment.

OFFICIALS NOT TO BENEFIT

15. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

In witness whereof, the parties hereto have caused this contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By T. A. WALTERS,
Acting Secretary of the Interior.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By W. P. WHITSETT,
Chairman of the Board of Directors.

Approved as to form:

JAMES H. HOWARD,
General Counsel.

Attest:

[SEAL]

A. L. GRAM,
*Executive Secretary of the Metropolitan Water District
of Southern California.*

[Resolution omitted.]

Appendix 1204

**RELATED PROJECTS: PARKER DAM
"POWER PLANT" CONTRACT, APRIL 7, 1939**

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

PARKER DAM PROJECT

ARIZONA-CALIFORNIA

SUPPLEMENTAL CONTRACT FOR CONSTRUCTION OF POWER PLANT AT
PARKER DAM

1. THIS SUPPLEMENTAL CONTRACT, made this 7th day of April, nineteen hundred thirty-nine, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law; and particularly pursuant to the Act of Congress approved August 30, 1935 (49 Stat. 1028, 1039), entitled "An Act authorizing the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," and authority vested in the Secretary thereunder by the President; and the Metropolitan Water District Act of the Legislature of the State of California (Stats. 1927, Ch. 429, as amended), between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Harry Slattery, Under Secretary of the Interior, hereinafter styled the Secretary, and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation organized and existing under and by virtue of the laws of the State of California, hereinafter referred to as the District;

Witnesseth:

EXPLANATORY RECITALS

2. Whereas the United States and the District, under date of February 10, 1933, entered into a contract (symbol and number Ilr-712) for the cooperative construction of Parker Dam, providing, among other things, that each party shall have the right, under the conditions therein stated, to one-half the power privileges created by the construction of said dam; and

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3. Whereas the United States and the District under date of September 29, 1936, entered into a supplemental contract (symbol and number Ilr-712) for the construction of forebay and power plant substructure at Parker Dam; and

4. Whereas, in order to utilize the power privilege at Parker Dam and thereby make low cost electric energy available for irrigation pumping on the Gila project and on the Colorado River Indian Reservation and to provide additional power and electric energy to meet the requirements of the Salt River Project, the United States desires to build the power plant at Parker Dam; and

5. Whereas contracts have been negotiated between the United States and the Salt River Valley Water Users' Association and the Central Arizona Light and Power Company, for electric power and energy from a power plant at Parker Dam, hereinafter referred to as Parker power plant, which will assure revenues sufficient to make the Parker power plant a self-liquidating project; and

6. Whereas it is mutually desired to make certain amendments and additions to the said contract dated February 10, 1933, as amended, to remove the restriction as to use and disposition by the United States of power and electric energy from Parker power plant;

7. Now, therefore, in consideration of the mutual covenants herein contained, the parties hereto agree as follows, to wit:

MODIFICATION OF CONTRACTS OF FEBRUARY 10, 1933, AND SEPTEMBER
29, 1936

8. [Article 8 cancels subdivisions (a), (b), and (c) of Article 11 and all of Article 12, of the Contract of September 29, 1936; and also amends subdivisions (b) and (c) of Paragraph II and subdivision (a) of Paragraph III of Article 15 of the Contract of February 10, 1933. The changes so made are noted in the texts of the said contracts heretofore set out and are not repeated here.]

CONSTRUCTION OF PARKER POWER PLANT

9. The United States will, and the District agrees that it may, complete the construction of a hydroelectric power plant at Parker Dam, including forebay, four penstocks and headgates, and incidental structures, including power plant building adequate for an ultimate installation of four main generating units, and the United States will and the District agrees that it may install initially three generating units therein in positions designated as Units Nos. 1 to 3, inclusive, on Drawing 231-D-274, attached to and made part of the aforesaid contract of September 29, 1936, together with all necessary auxiliary equipment and apparatus such as step-up transformers, switchboards and control equipment, crane, machine shop, and other essential mis-

cellaneous equipment. It is further agreed that the installation of the generating units shall be in such order, that generating Unit No. 3 shall be ready for actual operation at a date (at least) not later than the date when either generating Unit No. 1 or No. 2 is so ready for operation. Each turbine shall have a capacity of not less than five thousand (5,000) cubic feet per second and each generator shall have a capacity of not less than thirty thousand (30,000) kilovolt-amperes.

The United States shall have the right, which it may exercise at any time prior to installation thereof by the District, to install generating Unit No. 4 in Parker power plant and shall have the right to use said generating Units Nos. 3 and 4 subject to the provisions hereof. At any time when the United States has the use of generating Units Nos. 3 and 4, or either of them, it shall also have the right to use in each of said generating units a proportionate part of the water available for power purposes at Parker Dam on the basis of the total number of generating units then in operation.

PREPARATION OF DESIGNS

10. Designs and specifications for all work under this contract will be prepared by the United States with the cooperation of and subject to the approval of the District. The power plant shall be designed to develop in the most practical and efficient manner the power requirements of both parties with full consideration of the rights of both parties to utilize one-half the power available as provided in the contract of February 10, 1933, amended as aforesaid.

OPERATION OF POWER PLANT

10. (a) [NOTE.—As amended by Supplemental Contract of July 10, 1942.]

The power plant will be operated and maintained by the United States so as to produce power and energy for both the United States and the District at the lowest practicable cost, insofar as the available water and installed generating equipment will permit.

During the period that the United States retains exclusive use and benefit of all units installed in the power plant, operation and maintenance costs of Parker Dam and Power Plant, including replacements of machinery, shall be paid by the United States.

After the exclusive use and benefit of either or both Units No. 3 and No. 4 shall have been transferred to the District, the cost of operation and maintenance of the power plant, including replacements of machinery, shall be allocated to the United States and the District in proportion to the number of units operated for the exclusive use and benefit of each party. The District's share of such cost of oper-

ation and maintenance shall be paid monthly through credits provided in Article 12 hereof, or if such credits shall be insufficient, the balance shall be paid monthly by the District to the United States within sixty (60) days after submission of bills therefor. The costs of operation and maintenance of the dam during such last-mentioned period will be controlled by Article 17 of the contract dated February 10, 1933, except that the District's share of such costs shall be paid monthly by the District to the United States within sixty (60) days after the submission of bills therefor.

ALLOCATION OF COST OF PARKER POWER PLANT AND INCIDENTAL
WORKS

11. For the purposes of this contract the cost of the Parker power plant and incidental works, except the cost of works constructed under the said contracts of February 10, 1933 and September 29, 1936, shall be divided into four (4) principal groups, as follows:

- Group (a)* shall include the complete power plant building, trash-rack structure, forebay, four penstocks including head-gates and all common station machinery and equipment such as power house crane, sump pumps, air compressors, machine shop equipment and tools.
- Group (b)* shall include generating units numbers 1, 2, and 3, including turbines and governors, generators and exciters, step-up transformers, switchboards and control equipment and all auxiliary machinery and equipment and spare parts directly associated with generating units Nos. 1, 2, and 3.
- Group (c)* shall include the high-voltage switching station serving the Parker-Gila and Parker-Phoenix transmission lines, the Parker-Gila and Parker-Phoenix transmission lines and the Terminal Substation at Phoenix.
- Group (d)* shall include the high-voltage switching station and facilities provided for inter-connection between the Parker power plant and the power transmission system of the District.

The cost of the Parker power plant and incidental works, including the initial installation of generating Units Nos. 1 to 3, inclusive, shall be allocated as between the United States and the District as follows:

- To the United States:* One-half ($\frac{1}{2}$) of the cost of Group (a);
Two-thirds ($\frac{2}{3}$) of the cost of Group (b);
All of the cost of Group (c).
- To the District:* One-half ($\frac{1}{2}$) of the cost of Group (a);
One-third ($\frac{1}{3}$) of the cost of Group (b);
All of the cost of Group (d).

In the event the United States installs generating Unit No. 4, the cost thereof, including the cost of all auxiliary machinery and equipment and spare parts directly associated therewith, shall be allocated to the District.

AMORTIZATION OF DISTRICT'S PART OF COST OF PARKER POWER PLANT

12. [NOTE.—As amended by Supplemental Contract of July 10, 1942:]

During the period that the United States retains the exclusive use and benefit of either or both of Units No. 3 and No. 4, the United States shall credit to the District Four Hundred Seventy-five Dollars (\$475.00) per day for each unit the exclusive use and benefit of which is retained by the United States. Credits for one unit shall commence as of the date the second unit in the Parker Power Plant is placed in regular operation. Credits for two units shall commence as of the date the fourth unit in Parker Power Plant is placed in regular operation. The said sum shall be applied, (1) to the payment of the costs of operation and maintenance, if any, allocated to the District, and (2) to amortization with interest at the rate of four (4) percent per annum of the District's part of the cost of Parker Power Plant and incidental works, as defined in Article 11 hereof, and thereafter said sums shall be credited on any charges due and owing to the United States from the District, or shall be paid to the District.

TRANSFER OF USE OF GENERATING EQUIPMENT TO DISTRICT

13. [NOTE.—As amended by Supplemental Contract of July 10, 1942:]

The District shall have the right at any time after ten (10) years from the date when electric energy is first delivered from the Parker Power Plant over the Parker-Phoenix transmission line of the United States, and upon twenty-five (25) months' prior written notice to the United States, to have the exclusive use and benefit of generating Unit No. 3 and/or No. 4 transferred to the District; provided, that in the event generating Unit No. 4 has not theretofore been installed by the United States, as a condition precedent to the exercise of this right the District shall first install in Parker Power Plant, at its own expense, said generating Unit No. 4; and, further, provided that the District shall then be using all of its allotment of firm energy at Boulder Dam for pumping water into and in its aqueduct, except such part of its firm energy unused by the District and sold for its benefit at the rate for firm energy. In the event that the District elects to take over the exclusive use and benefit of either or both Units No. 3 and No. 4, before the part of the cost of the Parker Power Plant and incidental works allocated to the District, as provided in Article 11 hereof, has been completely amortized, as provided in Article 12 hereof, the District shall pay to the United States prior to the transfer of said generating equipment to the District, that portion of such costs then remaining unamortized, provided, that (1) expenditures for replacements shall not be included in such costs, and, (2) the District shall

not be liable for any accrued unpaid interest on such cost. The United States may at its option discontinue the use of generating Unit No. 3 and/or No. 4 at any time after amortization of the total cost of Parker Power Plant allocated to and not theretofore paid by the District as herein elsewhere provided and transfer the exclusive use and benefit thereof to the District.

14. The District may, if it so elects, proceed at any time with the installation of its said generating Unit No. 4.

15. The right of the United States to generate energy at Parker Power Plant shall not be delegated or assigned without approval of the District.

EFFECT ON OTHER CONTRACTS

16. In all other respects the provisions of said contracts of dates February 10, 1933, and September 29, 1936, shall remain unaffected by the provisions hereof.

TITLE TO REMAIN IN UNITED STATES

17. Title to Parker power plant and all works, machinery, and equipment installed therein shall be and remain in the United States until otherwise provided by Congress.

CONTRACT CONTINGENT UPON APPROPRIATIONS

18. This contract is subject to appropriations being made by Congress from year to year of moneys sufficient to do the work provided for herein and to there being sufficient moneys available in the Reclamation Fund to permit allotments to be made for the performance of such work. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient moneys not being so appropriated nor on account of there not being sufficient moneys in the Reclamation Fund to permit of said allotments.

OFFICIALS NOT TO BENEFIT

19. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

PARKER DAM—"POWER PLANT" CONTRACT A715

IN WITNESS WHEREOF, the parties hereto have caused this supplemental contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By HARRY SLATTERY,
Under Secretary of the Interior.

THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA,
By F. E. WEYMOUTH,
General Manager and Chief Engineer.

Approved as to form:

JAMES H. HOWARD,
General Counsel.

Attest:

A. L. GRAM,
*Executive Secretary of The Metropolitan Water District of
Southern California.*

[SEAL]

[Resolution omitted.]

Appendix 1205

**RELATED PROJECTS: PARKER DAM
"SAN DIEGO DIVERSION" CONTRACT
OCTOBER 1, 1946**

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

PARKER DAM PROJECT

ARIZONA-CALIFORNIA

**SUPPLEMENTAL CONTRACT PROVIDING FOR MODIFICATION OF POWER
PRIVILEGE UNDER PARKER DAM CONTRACT (ILR-712)**

1. THIS SUPPLEMENTAL CONTRACT, made this 1st day of October, nineteen hundred forty-six, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Reclamation Law; and particularly pursuant to the Act of Congress approved August 30, 1935 (49 Stat. 1028, 1039), entitled, "An Act authorizing the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes", and authority vested in the Secretary thereunder by the President; and the Metropolitan Water District Act of the Legislature of the State of California (Stats. 1927, Ch. 429, as amended), between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting for this purpose by Warner W. Gardner, Acting Secretary of the Interior, hereinafter styled the Secretary, and THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation organized and existing under and by virtue of the laws of the State of California, hereinafter referred to as the District;

Witnesseth that:

EXPLANATORY RECITALS

2. Whereas the United States and the District, under date of February 10, 1933, entered into a "Cooperative Contract for Construction and Operation of Parker Dam" (Symbol and Number Ilr-712), which contract has been supplemented and amended by contracts dated September 29, 1936, April 7, 1939, and July 10, 1942, and which

contract, as so supplemented and amended, is herein referred to as the "Parker Dam Contract"; and

3. Whereas under the said Parker Dam Contract, generating units at the Parker Power Plant numbered 1, 2, 3, and 4 have been constructed and are being operated and maintained for the use and benefit of the United States, and, until the use and benefit of Units No. 3 and No. 4 shall be transferred to the District as hereinafter recited, the United States has the right to the use, for generation of electrical energy, of all water passing Parker Dam; and

4. Whereas after ten years from the date when electrical energy was first delivered from Parker Power Plant over the Parker-Phoenix transmission line of the United States (which time will expire December 13, 1952), and upon certain notice given as provided in said Parker Dam Contract, the District has the right to have the exclusive use and benefit of generating Units No. 3 and No. 4 transferred to the District, and thereafter the United States and the District will be entitled to power privileges as in said Parker Dam Contract provided; and

5. Whereas the United States and The City of San Diego are parties to a contract dated February 15, 1933, wherein the United States agrees to deliver to the City at a point immediately above Imperial Dam, for its own use, and uses in the County of San Diego, up to 112,000 acre-feet of water per annum from the Colorado River, subject to the availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act, and in accordance with a schedule of priorities set out in said contract; and

6. Whereas it is now proposed to submit to the electors of the San Diego County Water Authority the question of annexation of the corporate area of the San Diego County Water Authority to the corporate area of the District, and to merge the rights held by the City of San Diego with certain contract rights to water of the Colorado River held by the District, and to arrange for the delivery of water to the San Diego County Water Authority through the aqueduct of the District, diversion thereof to be made from the Colorado River at a point immediately above Parker Dam; and

7. Whereas in the absence of this contract, the diversion of water contracted for by the City of San Diego at a point above Parker Dam would deprive the United States of the use of certain falling water at Parker Power Plant; and

8. Whereas it is the desire of the parties hereto to fully protect and keep whole the right of the United States to electrical energy and the use of falling water at Parker Power Plant, both before and after the use and benefit of Units No. 3 and No. 4 shall be transferred to the District;

9. Now, therefore, in consideration of the consent of the United States to change in point of delivery of water contracted for by the

PARKER DAM—"SAN DIEGO DIVERSION" CONTRACT · A719

City of San Diego in the contract of February 15, 1933, from a point on the Colorado River immediately above Imperial Dam to the District's intake at a point on the Colorado River immediately above Parker Dam, and in consideration of the covenants herein contained, the parties hereto agree as follows, to wit:

DELIVERY OF SUBSTITUTE ENERGY BY DISTRICT

10. (a) During the period prior to the time when the use and benefit of Units No. 3 and No. 4 at Parker Power Plant shall be transferred to the District, the District will deliver to the United States at Parker Power Plant electrical energy equal in amount to the energy which the water diverted from the Colorado River for delivery to the San Diego Aqueduct would have produced if such water had passed through the Parker Power Plant. The amount of such energy to be furnished to the United States by the District is hereby agreed upon as sixty (60) kilowatt-hours for each acre-foot of water delivered to the San Diego Aqueduct, as measured near the point of connection between the San Diego Aqueduct and the District's Colorado River Aqueduct immediately west of the West Portal of the San Jacinto tunnel. The said amount of sixty (60) kilowatt-hours per acre-foot has been determined with proper allowance for losses between the point of diversion and the point of measurement, and with proper allowance for the spillage of water at Parker Dam to be expected during the above-mentioned period. Such energy shall be in the form of 60-cycle, alternating current at 69-kv or such other voltage as may be agreed upon by the parties hereto. The rate of delivery of such energy shall not exceed 5 kilowatts for each second foot of capacity of the San Diego Aqueduct as it may from time to time exist, except as the District may consent to deliveries in excess of the rate so determined. Subject to such limitations energy represented by the water delivered to the San Diego Aqueduct during any calendar month shall be delivered, as requested by the United States, not later than the last day of the next succeeding calendar month. If, through no fault or failure of the District, any part of such energy is not so delivered, the District shall be under no obligation to complete the delivery at a later time.

(b) In the event that the District, for any reason, shall fail, neglect, or refuse to supply energy to the United States as herein provided, then, and in such event, the District shall compensate the United States at the rate of 5 mills per kilowatt-hour for such energy due hereunder but not delivered. Bills for any such deficiency shall be rendered to the District by the United States on or before the 10th day of the calendar month for any amount accruing hereunder during the preceding calendar month, and payment therefor by the District

shall be made on or before the 25th day of the month during which such bill shall be rendered.

In the event that payment shall not be made when due, an interest charge of 1% of the amount unpaid shall be added thereto, and thereafter an additional interest charge of 1% of the principal sum unpaid shall be added on the 25th day of each succeeding calendar month, until the amount due, including such interest, is paid in full.

(c) The amount of water delivered to the San Diego Aqueduct in each calendar month or fractional part thereof shall be determined by the District by means of adequate metering equipment, which equipment shall be subject to inspection at any time and from time to time by a duly authorized representative of the United States. The United States shall be given notice of such determination of the quantity of water so delivered not later than the fourth day of the following calendar month.

(d) Energy delivered hereunder shall be measured by suitable meters furnished and maintained by the United States, subject to inspection at any time and from time to time by the District. The United States shall determine the quantity of energy delivered hereunder for each calendar month or fractional part thereof, and will give notice of such determination to the District and such other interested party or parties as may be designated for that purpose by the District, not later than the fourth day of the following calendar month.

MODIFICATION OF POWER PRIVILEGE

11. (a) After the use and benefit of Units No. 3 and No. 4 shall be transferred to the District, falling water equal to 50.75 percent of the concurrent actual flow in the San Diego Aqueduct, measured near the said point of connection, as provided in Article 10 (c) hereof, shall be added to the one-half of the power privilege vested in the United States, as stated in Article 15, II (b), of the Parker Dam Contract, and considered in all respects as part of the power privilege of the United States at Parker Dam, and an equal amount shall be deducted from the one-half of the power privilege vested in the District at Parker Dam as therein fixed.

(b) During any period when the additional right of the United States to use such portion of the power privilege, as may not be used by the District for the time being, as provided in Article 15, II (b), of the Parker Dam Contract, is impaired by the fact that water for the San Diego Aqueduct is being diverted above Parker Dam, the United States shall have the right to withdraw from Unit No. 3 and/or No. 4 and pass through Units No. 1 and No. 2 for the benefit of the United States, an amount of water sufficient in quantity to restore the said additional right of the United States to its original value.

PARKER DAM—"SAN DIEGO DIVERSION" CONTRACT A721

In the event that the water which can be currently made available to the United States, as herein provided, is insufficient to restore said additional right to its original value, the United States shall have the right, at a later time, to withdraw from Unit No. 3 and/or No. 4 and pass through Units No. 1 and No. 2 for the benefit of the United States, an amount of water equal to such deficiency in acre-feet, provided that such withdrawal shall be a rate not greater than the then constructed capacity of the San Diego Aqueduct, it being the intent hereof that neither the primary power privilege of the United States under the Parker Dam Contract, nor its right to use the power privilege unused by the District shall be reduced in value or utility by the diversion above Parker Dam of water for the San Diego Aqueduct.

EFFECT LIMITED TO 112,000 ACRE-FEET

12. The operation of Articles 10 and 11 hereof, and the obligation arising thereunder, shall be limited to the effect of the change of point of diversion of 112,000 acre-feet of water per annum from a point on the Colorado River immediately above Imperial Dam to the District's intake at a point on the Colorado River immediately above Parker Dam.

CONTRACT EFFECTIVE UPON ANNEXATION

13. This contract shall become effective if and when the corporate area of the San Diego County Water Authority shall be annexed to and become a part of the corporate area of the District, and the point of diversion of Colorado River water for the San Diego Aqueduct shall be changed as hereinbefore recited, and not otherwise. In the event that such annexation shall not have been accomplished prior to January 1, 1947, this contract shall be void and of no further force or effect.

CONTRACT CONTINGENT UPON APPROPRIATIONS

14. This contract is subject to appropriations being made by Congress from time to time of moneys sufficient to make all payments and to provide for the doing and performance of all things on the part of the United States to be done and performed under the terms hereof. No liability shall accrue against the United States, its officers, agents or employees, by reason of sufficient moneys not being so appropriated.

OFFICIALS NOT TO BENEFIT

15. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

SUBJECT TO COLORADO RIVER COMPACT

16. This contract is made upon the express condition, and with the express understanding, that all rights hereunder shall be subject to and controlled by, the Colorado River Compact, being the Compact signed at Santa Fe, New Mexico, November 24, 1922, which Compact was approved in Section 13 (a) of the Boulder Canyon Project Act.

NOTICES

17. (a) Any notice, demand or request required or authorized by this contract to be given or made to or upon the United States shall be delivered, or mailed postage prepaid, to the Regional Director, United States Bureau of Reclamation, Boulder City, Nevada.

(b) Any notice, demand or request required or authorized by this contract to be given or made to or upon the District shall be delivered, or mailed postage prepaid, to the General Manager and Chief Engineer of The Metropolitan Water District of Southern California, Los Angeles 13, California.

(c) The designation of any person specified in this article or in any such request for notice, or the address of any such person, may be changed at any time by notice given in the same manner as provided in this article for other notices.

SUPPLEMENTAL TO PARKER DAM CONTRACT

18. This contract shall be deemed to be a supplement to the Parker Dam Contract referred to in the recitals hereof, and in all particulars not expressly modified hereby, the said Parker Dam Contract shall remain in full force and effect.

In witness whereof, the parties hereto have caused this supplemental contract to be executed the day and year first above written.

THE UNITED STATES OF AMERICA,
By WARNER W. GARDNER,
Acting Secretary of the Interior.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By JULIAN HINDS,
General Manager and Chief Engineer.
JHH

Attest:

A. L. GRAM,
Executive Secretary.

Approved as to form.

JAMES H. HOWARD,
General Counsel.

[SEAL]

Appendix 1206

**RELATED PROJECTS: PARKER DAM
FOUR-PARTY 1947 PARKER UNIT CONTRACT,
MAY 20, 1947**

FOUR-PARTY 1947 PARKER UNIT CONTRACT

1. THIS CONTRACT, made this 20th day of May 1947, by and between THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a public corporation organized and existing under the laws of the State of California (hereinafter referred to as the "District"), THE CITY OF LOS ANGELES, a municipal corporation of the State of California, and its DEPARTMENT OF WATER AND POWER (said Department acting herein in the name of the City, but as principal in its own behalf, as well as in behalf of the City, the term "City" as herein used being deemed to include both The City of Los Angeles and its Department of Water and Power), SOUTHERN CALIFORNIA EDISON COMPANY, a private corporation organized and existing under the laws of the State of California (hereinafter referred to as "Edison Company"), and CALIFORNIA ELECTRIC POWER COMPANY, a private corporation organized and existing under the laws of the State of Delaware (hereinafter referred to as "California Electric");

Witnesseth that:

2. Whereas the District and the United States, acting through the Secretary of the Interior, under date of February 10, 1933, entered into a contract entitled "Cooperative Contract for Construction and Operation of Parker Dam," which contract was amended and supplemented under date of September 29, 1936, by a "Supplemental Contract for the Construction of Forebay and Power Plant Substructure at Parker Dam," and was further amended and supplemented under date of April 7, 1939, by a "Supplemental Contract for Construction of Power Plant at Parker Dam," which last mentioned supplemental contract was amended by a contract dated July 10, 1942; and under the last mentioned supplemental contract, as amended, the District has the right, but not the obligation, at any time after ten years from the date when electric energy was first delivered from the Parker power plant over the Parker-Phoenix transmission line of the United States, and upon twenty-five months' prior

written notice to the United States, to have the exclusive use and benefit of generating Units 3 and 4 at Parker power plant transferred to the District, upon payment by the District to the United States of such portion of the costs chargeable to said units then remaining unamortized; and

3. Whereas energy was first delivered from Parker power plant over the Parker-Phoenix transmission line of the United States on December 13, 1942, and, immediately after December 13, 1952, the District, upon notice as hereinbefore recited, will have the right to have the exclusive use and benefit of said generating units transferred to the District; and

4. Whereas under contract dated May 31, 1945, designated "District's 1945 Resale Contract," City, Edison Company and California Electric, as purchasers, agreed to take and/or pay for energy from Boulder power plant theretofore allotted to the District and contracted for by the District, which shall be unused by the District for pumping Colorado River water into and in its aqueduct and unused by resale consumers under contracts referred to in Article 5 of said "District's 1945 Resale Contract," and said Resale Contract, among other things, provides that the said purchasers of unused energy shall pay therefor for the credit of the District, during the years of operation commencing with the year of operation beginning in 1945 and ending with the year of operation ending in 1950, at rates less than the rate for firm energy at Boulder power plant; and

5. Whereas the parties hereto are parties to a contract dated May 31, 1945, designated "1945 Collateral Contract," wherein it is provided, among other things, that when the costs of Units 3 and 4 at Parker power plant and of incidental works allocated to the District, as provided in the said "Supplemental Contract for Construction of Power Plant at Parker Dam," as amended, shall have been completely amortized by rentals received from the United States, as provided in said supplemental contract, the District shall exercise its right to have the use and benefit of said units transferred to the District; and further, that after the transfer of the use and benefit of said Units 3 and 4, or either of them, to the District, whether at the time of completion of amortization or earlier, energy generated on the units so transferred shall be used only in connection with the development, transportation, treatment, and distribution of water by the District and shall be so used in preference to energy from Boulder power plant; and

6. Whereas it is to the interest of the parties hereto that the District have the use and benefit of said Units 3 and 4 transferred to it immediately after December 13, 1952, and the City, Edison Company, and California Electric are willing to enter into an agreement to pay to the District certain sums as provided for in paragraph 7 hereof,

the sole and only consideration of such payments to be such taking over by the District of the said Units 3 and 4 as aforesaid.

7. Now, therefore, in consideration of the premises and of the covenants herein contained, the parties hereto agree as follows:

(1) The District agrees that it will have the use and benefit of said Units 3 and 4 transferred to the District as of midnight December 13, 1952, and, to that end, will do all things required of it under the "Cooperative Contract for Construction of Parker Dam," as amended and supplemented, including the payment of unamortized costs of said units as provided in said contract, and that thereafter energy available to the District from said Units 3 and 4 shall be used in accordance with the terms of said "1945 Collateral Contract."

(2) The City, Edison Company, and California Electric hereby severally agree to pay to the District, in the manner set out in subparagraph (3) of this paragraph 7, an amount determined by multiplying the number of kilowatt-hours taken and/or paid for by each thereof, respectively, under "District's 1945 Resale Contract" during each of the years of operation 1947-1948, 1948-1949, and 1949-1950, by the difference between the rate agreed to be paid under said "District's 1945 Resale Contract" during each of said years of operation, and the rate for firm energy at Boulder power plant as it shall be fixed for each of said years of operation pursuant to "General Regulations for Generation and Sale of Power in Accordance with Boulder Canyon Project Adjustment Act" promulgated by the Secretary of the Interior under date of May 20, 1941.

(3) On or before the 15th day of each calendar month commencing July 1947, the District shall submit to City, Edison Company, and California Electric, severally, a statement of the amount of energy billed to each of them by the United States under "District's 1945 Resale Contract" for the preceding calendar month, together with a bill in triplicate for the amount payable to the District hereunder, and City, Edison Company, and California Electric agree, severally, to pay to the District on or before the 25th day of such calendar month the amount so billed. At the close of each year of operation the exact amounts of money chargeable to the respective parties hereto shall be determined, and adjustment shall be made by additional payments or by credits or refunds to correct for any deviation from the estimates in the actual amounts chargeable to each thereof.

(4) Words and phrases used herein shall have the same meanings as are ascribed to them in the Boulder Canyon Project Adjustment Act, the Regulations promulgated thereunder, and in the several contracts referred to in the recitals hereof.

(5) This contract shall be known and designated as "Four-Party 1947 Parker Unit Contract."

In witness whereof the parties hereto have caused this contract to be executed the day and year first above written.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA,
By JULIAN HINDS,
General Manager and Chief Engineer.
JHH

Attest:

[SEAL]

A. L. GRAM, *Executive Secretary.*

Approved as to Form and Execution:

JAMES H. HOWARD,
General Counsel.
THE CITY OF LOS ANGELES, Acting
by and through its Board of Water and
Power Commissioners,
By W. BALLENTINE HENLEY,
President.

Attest:

JOSEPH L. WILLIAMS, *Secretary.*

Authorized by Resolution 952, May 8, 1947.

DEPARTMENT OF WATER AND POWER OF
THE CITY OF LOS ANGELES, By the
Board of Water and Power Commis-
sioners,
By W. BALLENTINE HENLEY,
President.

Attest:

JOSEPH L. WILLIAMS, *Secretary.*

SOUTHERN CALIFORNIA EDISON COMPANY,
By W. C. MULLENDORE,
President.

Approved as to Form and Legality, this 12th day of May 1947:

RAY L. CHESEBRO, *City Attorney.*
By JOHN H. MATHEWS, *Deputy.*

Attest:

[SEAL]

O. V. SHOWERS, *Secretary.*

Approved as to Form:

G. C. LARKIN, *General Counsel.*
CALIFORNIA ELECTRIC POWER COMPANY,
By ALBERT G. CAGE,
President.

Attest:

[SEAL]

H. DEWES, *Assistant Secretary.*

Legal Features Approved:

COIL, *General Counsel.*

May 9, 1947.

Appendix 1207

PARKER DAM TRANSMISSION CIRCUITS

Parker Dam transmission circuits

Circuit terminals	Ownership	Length	Operat- ing voltage	Supporting structure	Number of 3 - circuits	Conductor	Date in service
Parker-Phoenix:		<i>Miles</i>	<i>Kilovolts</i>			<i>Size</i>	
No. 1.....	USBR.....	137	161	Wood H frame...	Single.....	300,000 CM	February 1, 1940.
No. 2.....	USBR.....	140	161	do.....	do.....	477,000 CM	December 13, 1945.
Parker-Gila.....	USBR.....	117	161	do.....	do.....	300,000 CM	August, 1943.
Parker Pilot Knob.....	USBR.....	123	161	do.....	do.....	477,000 CM	Under construction.
Parker-Bagdad Copper Co.....	USBR.....	65	69	do.....	do.....	do.....	February 14, 1943.
Parker-Gene.....	USBR.....	2	230	Steel tower.....	Single.....	795,000 CM	May 29, 1947.
Major extensions from above circuits:							
Phoenix-Tucson No. 1.....	USBR.....	124	115	Wood H frame.....	do.....	4/0	1942.
Gila-Drop No. 4.....	USBR.....	49	161	do.....	do.....	300,000 CM	September, 1943.

Appendix 1208

**RELATED PROJECTS: COLORADO RIVER
AQUEDUCT
AUTHORIZATION OF SAN DIEGO AQUEDUCT**

(Act of April 15, 1948)

[PUBLIC LAW 482—80TH CONGRESS]

[CHAPTER 186—2D SESSION]

[S. 1306]

AN ACT Relating to the construction and disposition of the San Jacinto-San Vicente aqueduct

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Congress hereby (1) ratifies the action taken by various departments and agencies in the executive branch of the Government in planning for and proceeding with the construction of an aqueduct running from a connection with the Colorado River aqueduct of the Metropolitan Water District of Southern California near the west portal of San Jacinto tunnel in Riverside County, California, to San Vicente Reservoir in San Diego County, California; (2) authorizes the completion of such aqueduct in accordance with existing Government plans for the completion thereof; and (3) ratifies the action of the Navy Department in disposing of the aqueduct to the city of San Diego, California, pursuant to contract NOy-13300 which provides, among other things, for the leasing of such aqueduct to such city.

Approved April 15, 1948.

A729

Appendix 1209

**RELATED PROJECTS: COLORADO RIVER FRONT
WORK**

(Act of June 28, 1946, 60 Stat. 338, amending acts of Jan. 21, 1927,
44 Stat. 1021, July 1, 1940, 54 Stat. 708)

[PUBLIC LAW 469—79TH CONGRESS]

[CHAPTER 517—2D SESSION]

[H. R. 5674]

AN ACT To amend the laws authorizing the performance of necessary protection work between the Yuma project and Boulder Dam by the Bureau of Reclamation

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provision of the Act entitled "An Act authorizing the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," approved January 21, 1927 (44 Stat. 1010, 1021), amended by the Act entitled "An Act to authorize defraying cost of necessary work between the Yuma project and Boulder Dam," approved July 1, 1940 (54 Stat. 708), is hereby further amended to read as follows:

"That for the purpose of controlling the floods, improving navigation, and regulating the flow of the Colorado River, there is hereby authorized to be appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, for the fiscal year ending June 30, 1928, and annually thereafter, such sums as may be necessary, to be spent by the Bureau of Reclamation under the direction of the Secretary of the Interior, to defray the cost of (a) operating and maintaining the Colorado River front work and levee system in Arizona, Nevada, and California; (b) constructing, improving, extending, operating, and maintaining protection and drainage works and systems along the Colorado River; (c) controlling said river, and improving, modifying, straightening, and rectifying the channel thereof; and (d) conducting investigations and studies in connection therewith: *Provided*, That the expenditure of moneys for any of the foregoing purposes shall not be deemed a recognition of any obligation or liability whatsoever on the part of the United States: *Provided further*, That, within the discretion of the Secretary of the Interior, local communities to be benefited by works constructed pursuant to

this Act may be required to provide, without cost to the United States, necessary rights-of-way and maintenance of the completed works and assurance, satisfactory to him, of payment of valid claims arising out of damage caused to persons or property by reason of the construction, operation, or maintenance of any such works: *Provided further*, That any moneys received by the United States as reimbursement in accordance with contracts heretofore entered into under the authority of the Act of December 21, 1928 (45 Stat. 1057), as amended, and ratified by the Act of August 30, 1935 (49 Stat. 1028, 1039), for expenditures made under the authority of this paragraph, shall be covered into the Treasury as miscellaneous receipts. In connection with operations conducted under this paragraph, the Secretary of the Interior shall have the same authority with respect to (a) the acquisition, exchange and disposition of lands, interests in lands, water rights and other property, and the relocation thereof; (b) the utilization of lands owned or acquired by the United States; (c) construction and supply contracts; (d) the performance of necessary or proper acts; and (e) the making of necessary or proper rules and regulations, which he has in connection with projects under the Federal reclamation laws, Act of June 17, 1902 (32 Stat. 388), and Acts amendatory thereof or supplementary thereto. Nothing contained in this paragraph shall be deemed to amend, repeal, or otherwise affect the provisions contained in the First Deficiency Appropriation Act, 1944, under the caption 'Department of the Interior, Bureau of Reclamation—Colorado River front work and levee system' (58 Stat. 150, 157)."

Approved June 28, 1946.

C O P Y

Public Law 85-389
85th Congress, S. 2037
May 1, 1958

AN ACT

72 Stat. 101

To amend the Act of June 28, 1946, authorizing the performance of necessary protection work between the Yuma project and Boulder Dam by the Bureau of Reclamation.

BE IT ENACTED BY THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA IN CONGRESS ASSEMBLED, That that portion of the Act of June 28, 1946 (60 Stat. 338), which reads "(b) constructing, improving, extending, operating, and maintaining protection and drainage works and systems along the Colorado River" is amended by adding at the end thereof the following: "including such protection and drainage works and systems within a non-Federal reclamation project when need for such systems results from irrigation operations on Federal reclamation projects."

APPROVED MAY 1, 1958.

Appendix 1210

RELATED PROJECTS:

**YUMA PROJECT, YUMA AUXILIARY PROJECT:
TABLE OF PERTINENT STATUTES**

YUMA PROJECT

Act of April 21, 1904 (33 Stat. 189, 224).
Act of August 17, 1916 (39 Stat. 516).
Act of March 3, 1925 (43 Stat. 1198).
Act of June 28, 1926 (44 Stat. 776).
Act of July 3, 1926 (44 Stat. 841).
Act of January 21, 1927 (44 Stat. 1010).
Act of February 26, 1929 (45 Stat. 1321).
Act of July 1, 1940 (54 Stat. 708).

YUMA AUXILIARY PROJECT

Act of January 25, 1917 (39 Stat. 868).
Act of February 11, 1918 (40 Stat. 437).
Act of February 21, 1925 (43 Stat. 962).
Act of July 30, 1947 (Public Law 272, 80th Cong.).

Appendix 1211

**RELATED PROJECTS: GILA PROJECT
FINDING OF FEASIBILITY, JUNE 21, 1937**

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

The PRESIDENT,
The White House.

MY DEAR MR. PRESIDENT: The following report is made to you on the first division of the Gila Reclamation project, Arizona, under section 4 of the act of Congress of June 25, 1910 (36 Stat. 385), and under subsection B of section 4 of the act of December 5, 1924 (43 Stat. 701).

Section 4 of the act of June 25, 1910, provides in effect that after the date of that act no irrigation project to be constructed under the act of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto shall be undertaken unless and until the project shall have been recommended by the Secretary of the Interior and approved by the direct order of the President.

Subsection B, section 4, of the act of December 5, 1924, provides as follows:

That no new project or new division of a project shall be approved for construction or estimates submitted therefor by the Secretary until information in detail shall be secured by him concerning the water supply, the engineering features, the cost of construction, land prices, and the probable cost of development, and he shall have made a finding in writing that it is feasible, that it is adaptable for actual settlement and farm homes, and that it will probably return the cost thereof to the United States (43 Stat. 702).

By the act of Congress of June 22, 1936 (49 Stat. 1757, 1784), \$1,250,000 was appropriated for the continuation of construction of the Gila project, under the reclamation laws, the project having been initiated (1) by an allotment of \$75,000 under title II of the National Industrial Recovery Act of June 16, 1933 (48 Stat. 195), and (2) by allocation of \$2,000,000 under the Emergency Relief Appropriation Act of 1935, approved April 8, 1935 (48 Stat. 115).

The Gila project comprises the irrigable lands on both sides of Gila River, in southwest Arizona, susceptible of irrigation from the Colorado River, within feasible pumping lifts, with cheap power which can be made available for this purpose from developments on

the lower Colorado River. No other source of water exists. Lands agriculturally suitable for irrigation total 585,000 acres below elevation 600, and this total may in the future be modified either way in the light of operating experience with the initial unit. The project is unusually well adapted to development by divisions in this manner.

The project for which authorization is now desired comprises an initial division of 150,000 acres in the immediate vicinity of Yuma, Ariz., including 10,000 acres already irrigated from Colorado River, but requiring better facilities.

The various features requiring investigation and report under subsection B, section 4, act of December 5, 1924, supra, will be discussed in the order in which presented in that subsection, as follows:

WATER SUPPLY

The flow of Colorado River, regulated by the Boulder Dam, will be ample for the project as well as all other contemplated drafts thereon.

Section 4 of the Boulder Canyon Project Act (45 Stat. 1058) reads:

The states of Arizona, California, and Nevada are authorized to enter into an agreement which shall provide (1) that of the 7,500,000 acre-feet annually apportioned to the lower basin by paragraph (a) of article III of the Colorado River compact, there shall be apportioned * * * to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity.

While an agreement has not been concluded by the States, there is no doubt that such an agreement when reached will insure a full water supply for at least the initial division of the project. In all sales of water rights it will be necessary to prescribe that the water supply of the project is subject to the Colorado River compact, and to the Boulder Canyon Project Act and to the sales of water under the compact and said act and to the treaty which it is anticipated will be made with Mexico fixing that country's rights in the flow of the Colorado River.

ENGINEERING FEATURES

Project waters will be diverted at the eastern end of the Imperial Dam being constructed to supply primarily the All-American Canal. A canal of 1,900 second-feet capacity, 17 miles long, will lead to a main pumping plant located 12 miles east of Yuma, crossing the Gila River en route. Here waters will be lifted to canals at two levels. Two pumping plants further on will relift to still higher levels. The series of parallel canals leading from the pumping plants will serve a compact area lying between the present Yuma project, and the Fortuna Mountains, from Gila River to the Mexican boundary, a small part by gravity, and the balance with varying lifts up to 450 feet. Power for the operation of the pumps will eventually be secured from Parker Dam, now under construction for the Metropolitan Water District of Southern California where the United States reserved one-half the

power possibility, but initially it is expected to utilize surplus power at Boulder Dam. No unusual engineering problems exist.

COST OF CONSTRUCTION

The cost of the first division of the project is estimated as follows:

Dam, headworks and desilting works.....	\$1, 397, 910
Canal system.....	4, 217, 612
Pumping plants.....	4, 793, 580
Distribution system (139,000 acres).....	8, 475, 862
Transmission line.....	590, 000
Total.....	19, 474, 964

This cost would be distributed at the rate of \$134 per acre for the 139,000 acres of mesa lands and at \$74 per acre for the 11,000 acres of north and south Gila lands. The difference in price is due to the fact that no distribution system must be constructed for the north and south Gila lands.

LAND PRICES AND PROBABLE COST OF DEVELOPMENT

The following quotation is taken from the Report of the Feasibility of Gila Valley Project, Arizona, by a special nonbureau committee comprised of W. H. Code, William Peterson, and W. L. Powers:

The land ownership is largely Federal with a moderate amount of State and some private holdings.

The type of farm which seems best is a general 80-acre seed alfalfa, seed flax, cotton, sorghum, and forage crop with livestock and winter vegetables, or 40 acres with semitropical horticultural enterprises included.

The investment required to bring such farms into full production is estimated from \$6,000 to \$12,000.

The crops which can be most successfully grown on Gila project soils include alfalfa for seed and hay, flaxseed, cotton, including the long staple type, winter barley, sorghum, lettuce, honeydew melons, carrots, and various winter vegetables. Horticultural crops which succeed are pecans, dates, grapefruit, late winter oranges, limes, tangerines, grapes, and strawberries.

Privately owned lands not already under irrigation will be appraised and holdings in excess of the needs for individual farms would be required to be sold at desert-land prices.

FINDING REGARDING FEASIBILITY OF PROJECT

The data herein presented justify the conclusion that the first division of the project is feasible from an engineering and an economic standpoint, and I accordingly so find and declare.

ADAPTABILITY OF LAND TO SETTLEMENT AND FARM HOMES

The undeveloped lands of this project are of average fertility for desert lands, but are lacking in humus. They will need special atten-

tion over several years to reach full productiveness for the type of crops to which this semitropical region is adapted. With proper preparation the lands should produce crops of unusually large value.

With care in the selection of settlers, physically and financially equipped to carry on a proper development program, success in farming may be anticipated.

The demand for irrigated agricultural lands in the southwestern section of this country has always exceeded availability of such lands at reasonable prices.

PROBABLE RETURN TO RECLAMATION FUND OF CONSTRUCTION COST

A finding is required that the cost of construction will probably be returned to the United States. This is interpreted to mean that it will be returned within the maximum period fixed by reclamation law, which is 40 years from the time the public notice that the works are completed is issued by the Secretary.

The average annual cost to cover operation and maintenance of the irrigation system and the repayment of the construction cost is estimated at \$8.06 per acre for the undeveloped lands. It is believed that with small initial annual construction charge installments, in order to enable settlers to utilize their resources in bringing their lands to a stage of full production, a repayment ability will be developed that will justify the belief that the cost of the project will be returned. An early beginning of the construction of this project is important to the end that the waters of the Colorado River, made much more usable by the Boulder Dam, will be placed in use within the United States before an extension of their uses in the Republic of Mexico results in a condition which may make it practically difficult in the future to limit the delivery of water to Mexico to the amounts that may be agreed upon by treaty and to retain for use in the United States an amount suitable for proper agricultural development.

Based upon the foregoing I find that the project is feasible, that the lands watered thereby are adaptable for actual settlement and farm homes, that the lands are in need of a water supply and that the project will probably return the cost thereof to the United States.

I recommend that the project, now in process of construction, be approved, and that authority be given to this Department to proceed with the work and to make contracts and take any necessary action to construct and complete the project.

Sincerely yours,

(Signed) CHARLES WEST,
Acting Secretary of the Interior.

Approved June 21, 1937.

(Signed) FRANKLIN D. ROOSEVELT,
President.

Appendix 1212

**RELATED PROJECTS: GILA PROJECT
AUTHORIZING LEGISLATION**

(Act of July 30, 1947, Public Law 272, 80th Cong., 1st sess.)

[PUBLIC LAW 272—80TH CONGRESS]

[CHAPTER 382—1ST SESSION]

[S. 483]

AN ACT To relocate the boundaries and reduce the area of the Gila Federal reclamation project, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of reclaiming and irrigating lands in the State of Arizona and other beneficial uses, the reclamation project known as Gila project, heretofore authorized and established under the provisions of the reclamation laws, the Act of June 16, 1933 (48 Stat. 195), and various appropriation Acts, is hereby reduced in area to approximately forty thousand irrigable acres of land (twenty-five thousand acres thereof situated on the Yuma Mesa and fifteen thousand acres thereof within the North and South Gila Valleys), or such number of acres as can be adequately irrigated by the beneficial consumptive use of no more than three hundred thousand acre-feet of water per annum diverted from the Colorado River, and as thus reduced is hereby reauthorized and redesignated the Yuma Mesa division, Gila project, and the Wellton-Mohawk division, Gila project, comprising approximately seventy-five thousand irrigable acres of land, or such number of acres as can be adequately irrigated by the beneficial consumptive use of no more than three hundred thousand acre-feet of water per annum diverted from the Colorado River, situate within the Wellton, Dome, Roll, Texas Hill, and Mohawk areas, is substituted for the land eliminated from the Yuma Mesa division and is hereby authorized: *Provided, however,* That the waters to be diverted and used thereby, and the lands and structures for the diversion, transportation, delivery, and storage thereof, shall be subject to the provisions of the Boulder Canyon Project Act of December 21, 1928, and subject to the provisions of the Colorado River compact signed at Santa Fe, New Mexico, November 24, 1922:

And provided further, That the above limitations contained in this section are for the sole purpose of fixing the maximum acreage of the project and shall not be construed as interpreting, affecting, or modifying any interstate compact or contract with the United States for the use of Colorado River water or any Federal or State statute limiting or defining the right to use Colorado River water of or in any State:

SEC. 2. The Secretary is hereby authorized to acquire in the name of the United States, at prices satisfactory to him, such lands, interests in lands, water rights, and other property within or adjacent to the Gila project, which belongs to the Gila Valley Power District or the Mohawk Municipal Water Conservation District, as he deems appropriate for the protection, development, or improvement of said project: *Provided, however,* That the prices to be paid for the lands owned by the Gila Valley Power District, of Arizona, and heretofore officially appraised at the direction of the Commissioner of Reclamation, for the existing facilities of said district and of the Mohawk Municipal Water Conservation District, of Arizona, heretofore officially appraised at his request and determined by him to be useful to said project, shall not, in the aggregate, exceed \$380,000, and no portion thereof shall be paid until said districts have made arrangements satisfactory to the Secretary for the liquidation of their respective bonded, warrant, and other outstanding indebtedness.

SEC. 3. The Secretary is hereby authorized, to the extent, in the manner, and on such terms as he deems appropriate for the protection, development, or improvement of the Gila project, to sell, exchange, or otherwise dispose of the public lands of the United States within said project, the lands acquired under this Act, and any improvements on any such lands and to lease the same during the presettlement period only, provided such lands shall be disposed of to actual settlers and farmers as soon as practicable; to establish town sites on such lands; and to dedicate portions of such lands for public purposes. Contracts for the sale of such lands shall be on a basis that, in the Secretary's judgment, will provide the return in a reasonable period of years of not less than the appraised value of the land and the improvements thereon or thereto. Such lands may be disposed of in farm units of such sizes as the Secretary determines to be adequate, taking into consideration the character of soil, topography, location with respect to the irrigation system, and such other factors as the Secretary deems relevant: *Provided,* That the area disposed of to an individual shall, so far as practicable, not exceed one hundred and sixty acres. Sales to any individual shall be of not more than one farm unit. Any sums received by the United States from the disposition of said lands and improvements shall be covered into the reclamation fund, and credited to construction costs.

SEC. 4. Beginning at such date or dates and subject to such provisions and limitations as may be fixed or provided by regulations which the Secretary is hereby authorized to issue, any public lands within the Gila project and any lands acquired under this Act shall be, after disposition thereof by the United States by contract of sale and during the time such contract shall remain in effect, (i) subject to the provisions of the laws of the State of Arizona relating to the organization, government, and regulation of irrigation, electrical, power, and other similar districts, and (ii) subject to legal assessment or taxation by any such district and by said State or political subdivisions thereof, and to liens for such assessments and taxes and to all proceedings for the enforcement thereof, in the same manner and to the same extent as privately owned lands: *Provided, however,* That the United States does not assume any obligation for amounts so assessed or taxed: *And provided further,* That any proceedings to enforce said assessments or taxes shall be subject to any title then remaining in the United States, to any prior lien reserved to the United States for unpaid installments under land-sale contracts made under this Act, and to any obligation for any other charges, accrued or unaccrued, for special improvements, construction, or operation and maintenance costs of said project.

SEC. 5. Notwithstanding any other provision of law, the general repayment obligation of any organization which may hereafter enter into a contract with the United States covering the repayment of any portion of the costs of construction of the Gila project may be spread in annual installments over such reasonable period, not exceeding sixty years, as the Secretary may determine. For the purpose of predicating the repayment obligations of the various lands within said project on their respective ability, as determined by the Secretary, to share the burdens thereof, he may provide for the equitable apportionment of said general repayment obligation to the lands benefited on a unit basis in accordance with the extent of the benefit derived from the project, the character of soil, topography, and such other factors as he deems relevant, and he may provide for a system of variable payments under which larger annual payments will be required during periods of above-normal production or income and lesser annual payments will be required during periods of subnormal production or income.

SEC. 6. There are hereby authorized to be appropriated, from time to time, out of any money in the Treasury not otherwise appropriated such moneys as may be necessary to carry out the provisions of this Act.

SEC. 7. The Secretary is authorized to perform such acts, to make such rules and regulations, and to include in contracts made under the authority of this Act such provisions as he deems proper for

carrying out the provisions of this Act; and in connection with sales or exchanges under this Act, he is authorized to effect conveyances without regard to the laws governing the patenting of public lands. Wherever in this Act functions, powers, or duties are conferred upon the Secretary, said functions, powers, or duties may be performed, exercised, or discharged by his duly authorized representatives.

SEC. 8. This Act shall be deemed a supplement to and part of the reclamation law. Nothing in this Act shall be construed to amend the Boulder Canyon Project Act of December 21, 1928, as amended by the Boulder Canyon Project Adjustment Act of July 19, 1940.

Approved July 30, 1947.

Appendix 1213

**RELATED PROJECTS: PALO VERDE DIVERSION
WORKS**

PROVISIONS OF FIRST DEFICIENCY ACT, 1944

(Act of April 1, 1944, 58 Stat. 187)

* * * * *

Colorado River front work and levee system: For an additional amount for the Colorado River front work and levee system, \$250,000, to be available for the construction, operation, and maintenance of a temporary weir in the Colorado River below the heading of the diversion canal for the Palo Verde Irrigation District, California: *Provided*, That the construction, operation, or maintenance of said weir shall not be deemed a recognition of any obligation or liability whatsoever on the part of the United States; and no part of said sum or other funds of the United States shall be expended for the construction, operation, or maintenance of said weir after six months from the date of the termination of the present war, as determined by proclamation of the President or concurrent resolution of the Congress.

Appendix 1214

**RELATED PROJECTS: DAVIS DAM
FINDING OF FEASIBILITY, APRIL 26, 1941**

(H. Doc. 186, 77th Cong., 1st sess.)

BULLSHEAD (DAVIS) DAM PROJECT

LETTER FROM THE ACTING SECRETARY OF THE INTERIOR, TRANSMITTING RECLAMATION REPORT ON THE BULLSHEAD DAM PROJECT ON THE COLORADO RIVER WHERE THAT STREAM FORMS THE BOUNDARY BETWEEN ARIZONA AND NEVADA

THE SECRETARY OF THE INTERIOR,
Washington, April 26, 1941.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

MY DEAR MR. SPEAKER: There is submitted herewith the reclamation report on the Bullshead¹ Dam project on the Colorado River where that stream forms the boundary between Arizona and Nevada.

The report consists of the letter of April 7, 1941, to me from the Commissioner, Bureau of Reclamation, the engineering and economic report transmitted with that letter, and this, the finding with respect to the feasibility of the project.

The plan for the Bullshead Dam project contemplates the construction of a large dam, a power plant, transmission lines, and incidental and appurtenant works to cost approximately \$41,200,000. The project will make available ultimately 225,000 kilowatts of electric energy. It will serve through regulation of the river below Boulder Dam to increase the efficiency of the Boulder Dam power plant, and to contribute to flood control, navigation improvement, irrigation and municipal water supplies, power development, reduction of silt pollution, recreation, wild waterfowl protection, and related conservation purposes. It will also prove most useful eventually in metering the water passed downstream for use beyond the boundary of the United States.

¹ On June 26, 1941 Secretary of the Interior Harold L. Ickes named Bullshead Dam "Davis Dam" in honor of Arthur Powell Davis, first Director of the Bureau of Reclamation (at that time the Reclamation Service).

The plan of operation contemplates the coordination of water releases from Bullshead Reservoir with releases from Lake Mead, the reservoir created by Boulder Dam, and the coordination of power production at the Bullshead Dam power plant with that of the Parker Dam power plant.

Demands for power are outrunning present means of meeting them in the Southwest. The Bullshead Dam project, with the Parker Dam power project and other smaller developments which may follow, will meet the situation for some years, or until the Metropolitan Water District of Southern California exercises its rights to one-half of the power from the Parker plant.

Owing to the manner in which the Bullshead Dam project fits into the plan for the development of the lower Colorado River, no allocation of costs is made to benefits other than to power. Sales of electric energy are expected to yield revenues to cover the cost of operation and maintenance of the Bullshead Dam project, and to amortize the entire cost of the project in 40 years with interest at 3 percent, thus fulfilling the requirements of the Reclamation Project Act of 1939. The power will be sold at rates comparable with those established for the Parker Dam power project, thus spreading the benefits which follow low-cost power.

I find that the Bullshead Dam project is feasible as to its construction from an engineering point of view. I find that it will benefit in many ways the region and the people of the region, and that its economic benefits exceed the annual charges. I find that repayment of the entire cost of its construction with interest at 3 percent may confidently be expected within 40 years. The Bullshead Dam project, consequently, is authorized for construction under the provisions of section 9 of the Reclamation Project Act of 1939. Construction should be begun as soon as possible in order to meet a prospective serious power deficiency.

The Director of the Bureau of the Budget has informed me that authorization of the Bullshead Dam project at this time is in accord with the program of the President.

Sincerely yours,

E. K. BURLEW,
Acting Secretary of the Interior.

UNITED STATES DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, April 7, 1941.

The SECRETARY OF THE INTERIOR.

SIR: In conformity with section 15 of the Boulder Canyon Project Act (45 Stat. 1057), the Bureau of Reclamation has been conducting

extensive studies in the Colorado River Basin for the purpose of developing a comprehensive plan for the conservation and utilization of the waters of the main stream and its tributaries. The authorization contemplated that reports should be made from time to time on projects and plans.

Engineers of the Bureau of Reclamation have given special attention this past year to means of refining the general plan for development of the lower section of the Colorado River and of arranging to meet a prospective critical power shortage in the surrounding area. Demands upon the Boulder Dam power plant, even after it has been supplemented by the Parker Dam power plant and plants on the All-American Canal, will be such, owing to normal growth of load and to national-defense requirements, that an additional source of energy will be needed.

The engineering report shows that the situation can be met by construction of the Bullshead Dam project. Features of the project will be Bullshead Dam, an earth and rock-fill structure 338 feet high in the Colorado River about 67 miles below Boulder Dam; Bullshead Reservoir having a capacity of 1,600,000 acre-feet of active storage and extending to the tailrace of the Boulder Dam power plant; Bullshead Dam power plant having an initial installation of 180,000 kilowatts and an ultimate installation of 225,000 kilowatts; transmission lines interconnecting the Bullshead plant with the Parker Dam power project system and with market centers; and incidental and appurtenant works.

The Bullshead Dam project will serve important multiple purposes. Through reregulation of the flow of the main stream of the Colorado River below Boulder Dam it will contribute to flood reduction, navigation improvement, irrigation and domestic water supplies, power development, silt pollution reduction, recreation, and wild waterfowl protection, as well as other related conservation purposes. The Bullshead Dam will take its place as one of the great series of dams between the Grand Canyon and the point at which the Colorado River flows into Mexico. This series includes Boulder, Bullshead, Parker, Headgate Rock, Imperial, and Laguna Dams. The series, all Government dams, will develop this section of the river to a maximum for all purposes. Bullshead Dam will contribute in a major way to the development of the lower river for hydroelectric power. Although it serves other purposes as noted, since these purposes have been taken into consideration fully in the allocation of costs of other structures of the series, the entire cost of the Bullshead Dam project should be allocated to power. A prospective service of Bullshead Dam should be noted and emphasized. When an international agreement regarding the division of the waters of the Colorado River between the United States and Mexico is completed, the accurate

control which will be provided by Bullshead Dam will be essential to meter out the water to be passed downstream.

The creation of Bullshead Reservoir will enable the outlets at Boulder Dam to be operated for maximum power production in coordination with rapid fluctuations in the production at plants in southern California and in the demand for power in that area, which the Boulder plant principally serves. The power plant at Bullshead will be coordinated, however, with the Parker plant about 80 miles farther downstream, and will assist in serving the growing demands in southern Nevada, in western and central Arizona, and in southeastern California. The prospective power requirements of the market area are that 1,334,000,000 kilowatt-hours of energy will be needed annually in the near future. If the Bullshead Dam project is completed in 3 years, it will meet, with the Parker plant and certain small projects that may be developed, these requirements until such time as the Metropolitan Water District of Southern California exercises its right to one-half of the power from Parker Dam.

The cost of the Bullshead Dam project is estimated at \$41,200,000. The cost being allocated to power, it is expected to be repaid in 40 years with interest at 3 percent under section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187). The annual cost of amortizing the project on this basis will be \$1,782,400 and the annual cost of operation and maintenance will be \$380,000. Power rate and demand studies show that at rates comparable with those established for the Parker Dam power project, the energy from the Bullshead Dam project will yield sufficient revenue to guarantee the payment of the charges both for operation and maintenance and for amortization of the project.

The benefits to be derived from the construction of the Bullshead Dam project far exceed the annual costs, and the project clearly meets all the requirements of the Reclamation Project Act of 1939. I recommend, therefore, that you find the project feasible, and that the finding and the report be transmitted to the Congress in compliance with the provisions of the Reclamation Project Act of 1939.

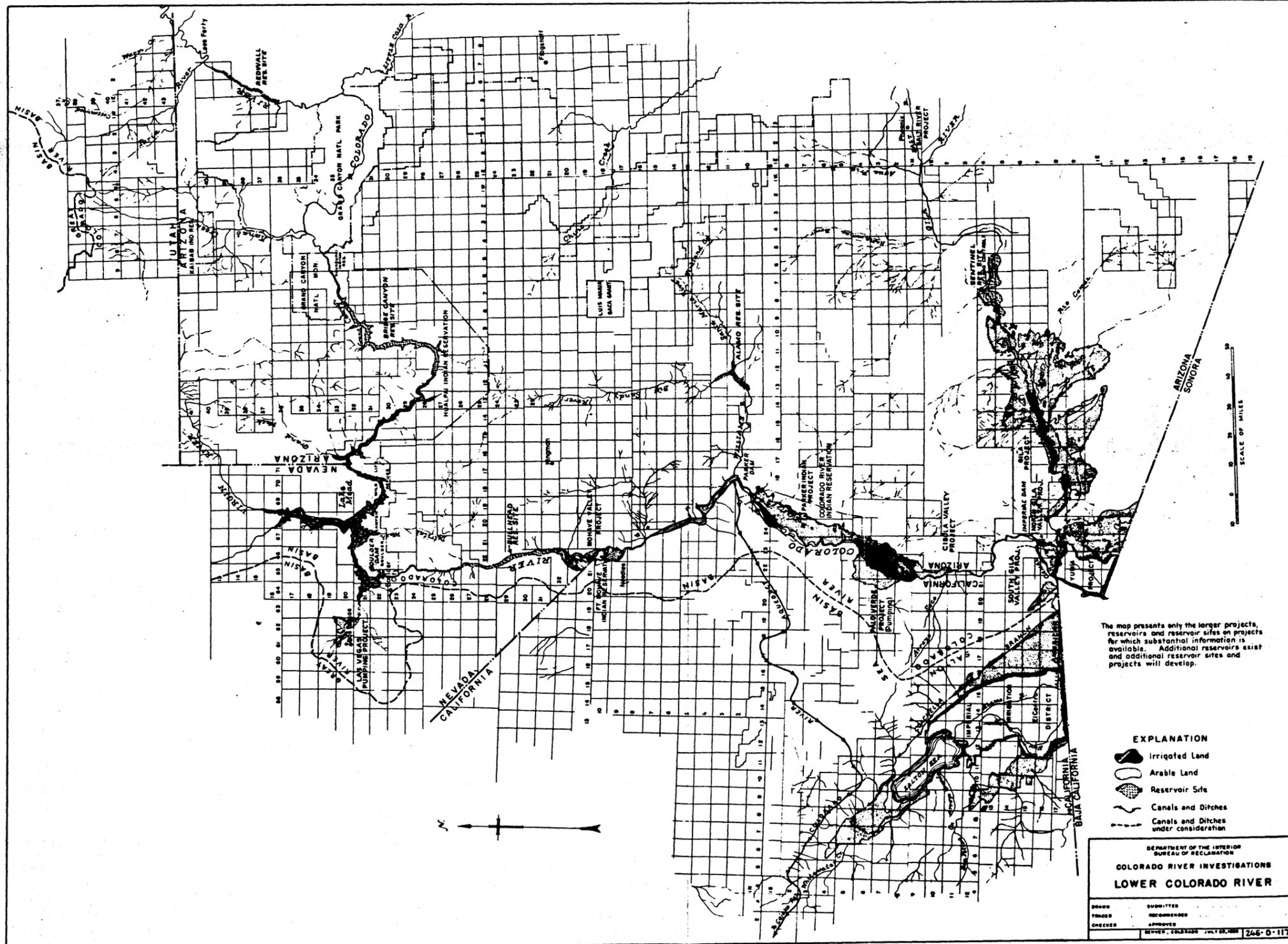
Respectfully,

JOHN C. PAGE, *Commissioner.*

REPORT ON BULLSHEAD (DAVIS) DAM PROJECT, ARIZONA-NEVADA

INTRODUCTION

The site of Bullshead Dam is approximately 67 miles downstream from Boulder Dam and about 80 miles upstream from Parker Dam on the Colorado River where that stream forms the boundary between Arizona and Nevada. It is one of a series of dam sites between the



The map presents only the larger projects, reservoirs and reservoir sites on projects for which substantial information is available. Additional reservoirs exist and additional reservoir sites and projects will develop.

EXPLANATION

- Irrigated Land
- Arable Land
- Reservoir Site
- Canals and Ditches
- Canals and Ditches under consideration

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

COLORADO RIVER INVESTIGATIONS
LOWER COLORADO RIVER

DRAWN	SUBMITTED
TRACED	RECORDED
CHECKED	APPROVED

NOV 26 1954

lower end of the Grand Canyon and the point at which the river flows from the United States into Mexico, others being Boulder Dam site, Parker Dam site, Headgate Rock Dam site, Imperial Dam site, and Laguna Dam site. Dams have been built at the Boulder, Parker, Imperial, and Laguna sites by the Bureau of Reclamation, and a dam is under construction at the Headgate Rock site by the Office of Indian Affairs, Department of the Interior.

Dams of this series will provide maximum regulation and control of the Colorado River in the lower reaches for flood reduction and control, navigation improvement, irrigation and domestic water supplies, hydroelectric power, recreation, wild waterfowl protection, pollution abatement, and related purposes.

The lower basin of the Colorado River is an area of extreme aridity, and the Colorado River is the most important irrigation stream in the Pacific Southwest. More details concerning the region and the river may be found in the reports which were made prior to the authorization of the Boulder Canyon project by the act of December 21, 1928.²

AUTHORITY

The investigations which resulted in this report were made pursuant to section 15 of the Boulder Canyon Project Act (45 Stat. 1057), which authorized and directed the Secretary of the Interior to make investigations and reports of the feasibility of projects for irrigation, generation of electric power, and other purposes in the States of Arizona, Nevada, Colorado, New Mexico, Utah, and Wyoming for the purposes of formulating a comprehensive scheme of control and the improvement and utilization of the waters of the Colorado River and its tributaries. This report was prepared in conformity with section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187).

DESCRIPTION OF PROJECT

The Bullshead Dam project includes Bullshead Dam, Bullshead Reservoir, Bullshead power plant, transmission lines, and incidental and appurtenant works. The dam will be an earth- and rock-fill structure 338 feet high above foundation. The reservoir will have a live storage capacity of 1,600,000 acre-feet of water and will back water up to the tailrace at the Boulder Dam power plant. The power plant will utilize the 140 feet of head available between the tailrace and the Bullshead site and will have an initial capacity of 180,000 kilowatts with the installation of four 45,000-kilowatt gener-

² See: In 65th Cong., 1st sess., S. Doc. v. 11, No. 103, Serial No. 7265; S. Doc. No. 142, 67th Cong., 2d sess.; S. Rept. 654, pt. 1, 69th Cong., 1st sess.; H. Rept. 1657, 69th Cong., 2d sess.; H. Rept. No. 918, 70th Cong., 1st sess.; H. Doc. No. 446, 70th Cong., 2d sess.

ators and an ultimate capacity of 225,000 kilowatts. The transmission lines, of 161,000-volt capacity, will connect with the Parker Dam plant and extend to market areas. Power from the Bullshead plant, augmented by power from the Parker plant, will serve commercial load centers at Phoenix, Tucson, and Yuma, Ariz., in the Imperial and Coachella Valleys in California, and it will serve the Gila project near Yuma.

WATER SUPPLY

The Bullshead Dam project will utilize the stream flow of the lower Colorado River after it has been regulated by and released from Lake Mead, the reservoir created by Boulder Dam. There are no tributaries entering the river between Boulder and Bullshead Dams. Lake Mead has a capacity of 32,359,274 acre-feet of water. It controls almost completely the main stream. Releases from Lake Mead are governed by the requirements of irrigation and domestic water users downstream, the requirements of flood control, and those of power generation. They are made in accordance with the Colorado River compact referred to in section 13 of the Boulder Canyon Project Act. The compact provides for the distribution of the waters of the Colorado River between the upper and lower basins of the river.

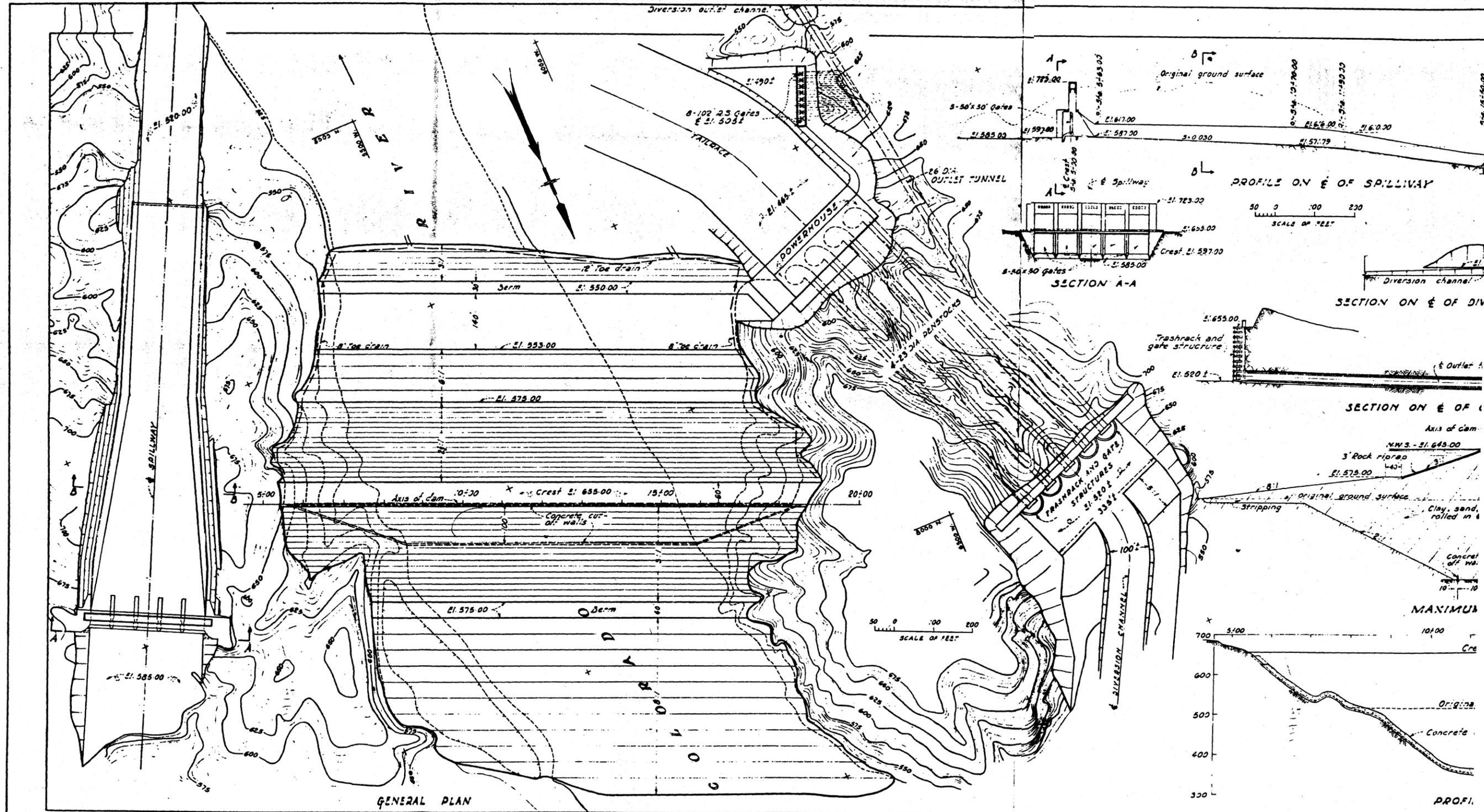
Reservoir operation studies have been made for Lake Mead based on run-off records for the 44-year period from 1897 to 1940. Irrigation diversions and the consumptive use of water in the upper basin will increase in the future until limitations provided in the Colorado River compact are reached; therefore, the water-supply studies for the Bullshead power plant are based on estimated average conditions of diversion and consumptive use as estimated for the year 1945 and for the year 1985. Table No. I which follows shows the estimated annual run-off at the Bullshead Dam site, corrected to reflect the estimated upstream use of water, in the years 1945 and 1985:

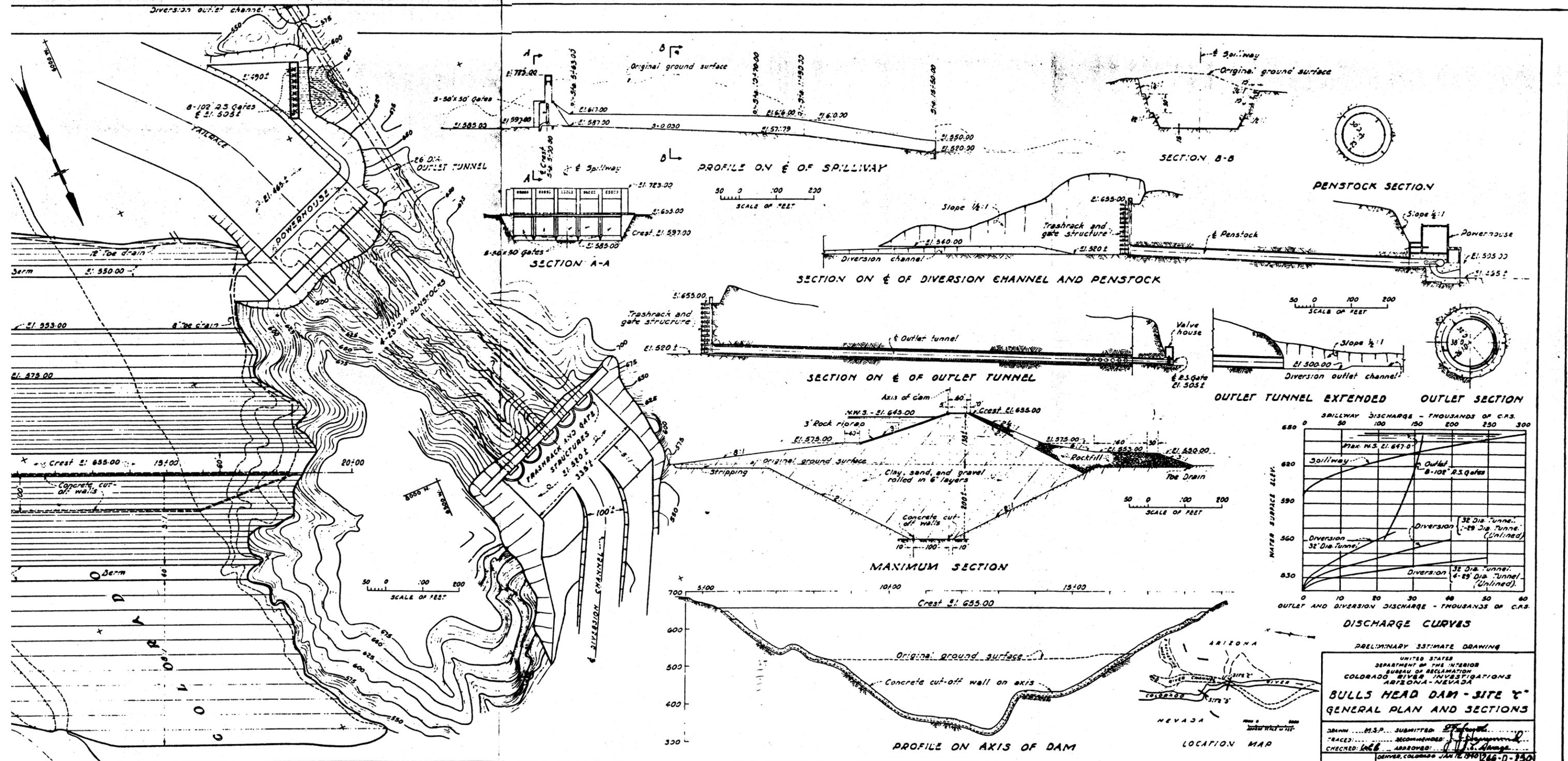
TABLE I.—*Extremes of run-off at Bullshead site*

	With 1945 conditions	With 1985 conditions
	<i>Acre-feet</i>	<i>Acre-feet</i>
Long-time (44-year) average.....	13, 200, 000	10, 000, 000
Average of low years ¹	10, 000, 000	8, 500, 000

¹ Series of years of low run-off, such as 1900 to 1905, or 1933 to 1940, inclusive, when only firm power is being produced at Boulder Dam.

In years of low run-off, the entire annual stream flow at Bullshead Dam can be used for power generation. In years of high run-off, part of the releases from Lake Mead will be made for flood-control purposes at discharges too high to be used for power generation at Bullshead Dam. The long-time average annual flow usable for power





PRELIMINARY ESTIMATE DRAWING

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLORADO RIVER INVESTIGATIONS
ARIZONA-NEVADA

BULLS HEAD DAM - SITE X
GENERAL PLAN AND SECTIONS

DRAWN BY: H.S.P. SUBMITTED: J.F. [Signature]
 TRACED BY: [Signature] RECOMMENDED: J.F. [Signature]
 CHECKED BY: L.C.B. APPROVED: J.F. [Signature]
 DENVER, COLORADO JAN. 1940 266-D-150

generation is estimated at 12,500,000 acre-feet with 1945 conditions and 9,500,000 acre-feet with 1985 conditions.

The firm power production at Boulder Dam is distributed throughout the year in such a manner that it can be coordinated with the power output available at power plants in Southern California to meet the load requirements in that area. Table II shows the estimated distribution of firm power output at Boulder Dam in years of low run-off in southern California. It shows the required releases at Bullshead Dam in 1945 and 1985 to meet downstream requirements for irrigation and other requirements and the storage capacity required at Bullshead to regulate Boulder Dam releases to conform with these downstream requirements.

TABLE II.—Storage capacity required at Bullshead

Month	Distribution of Boulder Canyon firm output in dry years (percent)	Bullshead operation 1945 conditions			Bullshead operation 1985 conditions		
		Inflow from Lake Mead in dry years ¹	Required release for downstream irrigation, etc. ¹	Storage capacity required for regulation ¹	Inflow from Lake Mead in dry years	Required release for downstream irrigation, etc. ¹	Storage capacity required for regulation ¹
January.....	8.8	880	350	-----	750	380	-----
February.....	9.3	930	370	-----	790	450	-----
March.....	7.2	720	520	-----	610	680	70
April.....	6.2	620	570	-----	530	830	300
May.....	5.8	580	630	50	490	920	430
June.....	8.9	890	680	-----	760	990	230
July.....	8.9	890	700	-----	760	990	230
August.....	9.0	900	650	-----	760	920	160
September.....	9.1	910	550	-----	770	830	60
October.....	8.9	890	490	-----	760	680	-----
November.....	9.0	900	420	-----	760	450	-----
December.....	8.9	890	370	-----	760	380	-----
Total.....	100.0	10,000	6,300	50	8,500	8,500	1,480

¹ Flow units and storage units are 1,000 acre-feet.

To allow for intramonthly fluctuations in the releases from Lake Mead and Bullshead Reservoir, and for variations in these quantities from year to year, the required storage capacity fully to coordinate Boulder Dam releases with downstream irrigation requirements is estimated to be 200,000 acre-feet with 1945 run-off conditions and 1,600,000 acre-feet with 1985 conditions. Initially, the available active capacity not needed to regulate water for irrigation and other purposes could be used to regulate releases from Bullshead Reservoir as nearly as practicable in conformity with needs of the power market. Since Bullshead Reservoir will smooth the fluctuations in the releases through the Boulder Dam power plant, operation of the two plants should be coordinated to insure the production of the maximum amount of firm power output, in conformity with market requirements

from both plants. Thus the entire output from Bullshead Dam power plant in years of low run-off will be classed as firm power.

FEATURES OF BULLSHEAD DAM PROJECT

Dam.—Geological examinations were made of several dam sites. At the most favorable site the river fill is composed of sand, gravel, and silt to a maximum depth of 200 feet to bedrock. This site is adequate for the construction of the earth-fill dam herein proposed providing a cut-off trench is excavated across the river and suitable cut-off walls are placed therein, as shown on plate II.

The dam will be of the earth- and rock-fill type, 1,350 feet long at the crest and 338 feet high above the lowest foundation. The crest of the dam will be at elevation 655 feet and will have a width of 60 feet. The upstream face will be paved with rock riprap on a 3-to-1 slope down to elevation 575, the lower limit of probable wave action. The downstream face of the earth fill will have a slope of 2 to 1, and will be protected by a heavy rock fill. The total thickness of the base of the dam will be about 1,400 feet. The earth fill will consist of selected clay, sand, and gravel rolled in 6-inch layers.

A cut-off trench having a bottom width of 120 feet and 2-to-1 side slopes will be excavated in the river fill to bedrock. Two concrete cut-off walls will be constructed in the trench and up the abutments to aid in preventing seepage beneath the dam.

The spillway will be of the open-chute type cut through the left abutment of the dam and will be provided with regulating gates. The spillway capacity will be 200,000 second-feet when the water surface of the reservoir is at elevation 647, 8 feet below the top of the dam. The chute will be about 1,100 feet long and will return the flow to the river about 400 feet downstream from the toe of the dam. It will be concrete lined.

During the construction of the dam the river will be diverted through a 32-foot concrete-lined tunnel and five unlined tunnels through the right abutment of the dam. A large steel outlet pipe will be installed for permanent use in the 32-foot outlet tunnel. This will discharge through valves into the tailrace and will serve to bypass water for irrigation and other purposes when the power plant is not operating.

Additional details of the dam and appurtenant works are shown on plate II. (Note that five 29-foot unlined tunnels are to be used in place of four 30-foot tunnels as shown on the drawing.)

Reservoir.—Topographic surveys have been made of the reservoir site. Table III shows the areas and capacities of the Bullshead Reservoir at various elevations determined from the plan and profile surveys of the Colorado River made by the Geological Survey in 1902-3 and 1920, supplemented by estimates for parts of the areas where the survey data were incomplete.

TABLE III.—Reservoir area and capacity

Elevation	Area (acres)	Capacity (1,000 acre- feet)	Elevation	Area (acres)	Capacity (1,000 acre- feet)
525 feet-----	0	0	600 feet-----	20,000	808
540 feet-----	3,000	23	610 feet-----	22,000	1,020
550 feet-----	7,000	73	620 feet-----	23,000	1,240
560 feet-----	12,000	168	630 feet-----	25,000	1,480
570 feet-----	14,000	298	640 feet-----	27,000	1,740
580 feet-----	16,000	448	647 feet-----	28,000	1,940
590 feet-----	18,000	618			

The reservoir will extend to the Boulder Dam tailrace.

Bullshead Dam power plant.—The headwater elevation at the Bullshead Dam will vary from a maximum of 647 feet, the original low-water elevation at Boulder Dam, to a minimum of 575 feet, which is the bottom of the live storage capacity required for regulation with 1985 conditions. This indicates an ultimate fluctuation of 72 feet. Initially, however, the average headwater fluctuations will probably not exceed 25 feet.

The original tailwater elevation when the Bullshead Dam is completed will be 525 feet. Some scouring in the river channel will take place after the completion of the dam. It is estimated that the static head at the plant under 1945 conditions of releases at Boulder Dam and consumptive use in the basin above Lake Mead will be 120 feet. Under the conditions of release and consumptive use as estimated for 1985 it is expected that the static head for the Bullshead plant will be 105 feet.

Bullshead Dam power plant will have an initial generating capacity of 180,000 kilowatts in four hydroelectric units. Penstocks will be installed and space provided in the powerhouse for the ultimate installation of five units of 45,000 kilowatts each.

The powerhouse will be located on the Nevada side of the river just downstream from the west abutment of the dam. A forebay will be constructed on the upstream side of the abutment with trashracks and emergency slide gates serving large-diameter steel penstocks, which will be placed in the tunnels, and backfilled with concrete. Each of the penstocks connecting to the powerhouse will be equipped with a surge tank near the downstream end. The building will be a reinforced concrete structure about 515 feet long and 75 feet wide, with a transformer deck and transformer transfer track along the upstream side of the main building.

The turbines will be spaced at about 71-foot centers and will have a capacity of 60,000 horsepower each at a net head of 105 feet.

The over-all efficiency of the plant is estimated to average 70 percent. On this basis, the average annual power output is estimated in table IV to be as follows:

TABLE IV.—*Estimated electric output*

	1945 conditions	1985 conditions	Average annual output during 40-year period
Average head:			
Long-time average annual release (acre-feet)-----	12, 500, 000	9, 500, 000	-----
Annual release for firm power (acre-feet)-----	10, 000, 000	8, 500, 000	-----
Possible average annual output:			
Firm power (million kilowatt-hours)-----	860	640	750
Secondary power (million kilowatt-hours)-----	215	75	145
Total power (million kilowatt-hours)-----	1, 075	715	895

Transmission lines.—Transmission lines to be constructed in connection with this plant will include as principal units of the net two 161,000-volt lines to the Parker Dam power plant, one additional line from the Parker plant to Phoenix, Ariz., and one additional line from Parker power plant to the substation of the Gila project, near Yuma, Ariz.

POWER MARKET

While the discharge from the reservoir at Bullshead Dam will be coordinated with that from Lake Mead for the purpose of regulating the flow to the best advantage of downstream irrigation and other uses, the power output will be interconnected with the Parker Dam power plant. The combined output of the Bullshead and Parker plants will be used to supply a large part of the power requirements of southern Nevada, central and southwestern Arizona, the Imperial and Coachella Valleys in California, and the Gila project.

The near future annual demands for electric energy in the area to be served by the Parker and Bullshead plants are estimated at 1,334,000,000 kilowatt-hours. Contracts for the supply of part of this load from the Parker Dam power plant have already been executed. The probable distribution of the demands on the two power plants is presented near the end of this report in table VII.

The output of the Parker plant and the output from the initial installation at the Bullshead plant will be approximately 1,567,000,000 kilowatt-hours annually as compared with the estimated initial demand of 1,334,000,000 kilowatt-hours. The estimated annual output of the two plants is based on the assumption that the full capacity of the Parker Dam power plant will be available to the United States. It must be emphasized that the Metropolitan Water District of Southern California has the right to one-half of the capacity of the Parker Dam power plant when the power is needed by the district

for the purpose of pumping water into and through its Colorado River aqueduct. When the metropolitan water district exercises this right, the amount of power available to the Government will be inadequate to supply the requirements of the area to be served by the combined power systems. Thus, even with the addition of Bullshead Dam, it is clear that the prospective demand in the market area of Parker and Bullshead power plants will absorb the full output of the two plants practically from the start.

PURPOSES OF PROJECT

The Bullshead Dam project combines multiple purposes for a maximum degree of conservation of the waters of the Colorado River. It will serve navigation; flood control; river regulation for irrigation, for municipal water supply, and for metering the water which may be passed downstream for use beyond the boundary of the United States; power development; recreation; silt-pollution control; wildlife; and related purposes.

POWER DEVELOPMENT

In the preceding paragraphs of this report the ways in which the Bullshead Dam project serve in the development of hydroelectric power have been set forth and discussed. In review here it should be mentioned that the project will increase the efficiency of the Boulder Dam power plant, will develop a large block of hydroelectric power at a plant to be situated immediately below Bullshead Dam, and will improve the supply from the Parker Dam power plant and improve the service rendered the Bullshead-Parker projects market area through coordination of its energy production with that of the Parker plant.

OTHER BENEFITS

Irrigation, River regulation.—Boulder Dam is operated in such a manner that the firm power production of the Boulder power plant can be coordinated with the power output of plants in southern California, its principal market area, to meet the load requirements there, as has been noted. At certain periods the resulting reservoir releases from Lake Mead are not ideally suited to meet the irrigation requirements of the present irrigated areas and the potentially irrigable areas below Boulder Dam. The Bullshead Reservoir, of a capacity of 1,600,000 acre-feet, will make possible regulation of discharges from Lake Mead more closely to conform to downstream irrigation requirements. Such regulation will benefit 1,000,000 acres of land in the All-American Canal system, 68,000 acres of land in the Yuma project, and 500,000 acres ultimately to be developed in the Gila project. In addition, this added control of irrigation supplies will benefit such areas as that to be developed by the Office of Indian

Affairs in the Colorado River Reservation and such private developments as the Palo Verde district; and it will enable eventually the development of comparatively small areas, now desert, near to and distant from Bullshead Dam. These benefits are not ascribed to Bullshead Dam alone. They have been considered in the long-range program for the development of the Colorado River and in connection with other features of the lower Colorado River development of which Bullshead Dam is a part. No allocation of costs of the Bullshead Dam project to irrigation, therefore, is proposed.

Flood control.—No major tributary of the Colorado River enters between Boulder Dam and the Bullshead site. Lake Mead will control most floods originating in the Colorado River Basin above Boulder Dam. Bullshead Reservoir will contribute to flood reduction in the lower Colorado River Basin on those rare occasions when the spillways at Boulder Dam are called upon to bypass the peaks of extraordinary flows. It also will smooth the flow below Boulder Dam, and in such an emergency as that created by the high, flash flood of September 7, 1939, originating below Boulder Dam, the Bullshead Dam will be used in cooperation with Parker and Imperial Dams to reduce downstream peaks. No allocation of costs of the Bullshead Dam project to flood control is proposed, however.

Navigation.—While navigation of the Colorado River between Bullshead Dam and Boulder Dam will be reestablished, no allocation of cost of the Bullshead Dam to navigation is proposed.

Municipal water supply.—The Bullshead Dam project will serve only incidentally to improve municipal water supplies as it reregulates the flow of the lower river for irrigation uses. The reservoir will contribute its part toward the elimination of silt pollution; it will provide a wild waterfowl refuge on a major flyway in an area where water is scarce; it will be stocked with fish; and, like Lake Mead, it will provide fine opportunities for recreation. While these benefits are important and have received consideration in the planning of the project, no allocation of costs is proposed to municipal water supply or any of these or other miscellaneous uses.

When the waters of the Colorado River are apportioned between the United States and Mexico by international agreement, Bullshead Dam will serve an important function in providing that fine degree of control needed in effect to meter out the water in accordance with the treaty or agreement. This potential future use has been taken into consideration and is a motivating factor in proposals to build the project, though no costs have been allocated to it.

ESTIMATED COSTS

Construction costs.—The construction costs of the Bullshead (Davis) Dam project are estimated in table V as follows:

TABLE V.—Costs of construction

Bullshead Dam and Reservoir ¹	\$21, 000, 000
Power plant (180,000 kilowatts) ²	15, 500, 000
Transmission lines.....	2, 000, 000
Substations (at Phoenix and on the Gila project; additions to Parker switching station, etc.).....	2, 700, 000
Total	41, 200, 000

¹ Includes pen stocks, trash racks, control gates, and appurtenances.

² Initial installation.

Operation and maintenance.—The cost of operating and maintaining the project including the cost of repairs and replacements is shown in Table VI.

TABLE VI.—Estimated annual cost of operation and maintenance

	Maintenance	Repairs and replacements	Total
Bullshead Dam.....	\$25, 000	\$25, 000	\$50, 000
Bullshead power plant.....	125, 000	50, 000	175, 000
Transmission lines (400 miles).....	40, 000	35, 000	75, 000
Substations (18,000 kilovolt-amperes).....	15, 000	30, 000	45, 000
Total operation and maintenance and repairs and replacements			345, 000
Overhead and general expense			35, 000
Total			380, 000

Annual charges.—It is contemplated that the cost of constructing the Bullshead Dam, the power plant, and the transmission lines will be repaid to the Government in accordance with the terms of the Reclamation Project Act of 1939, the repayment period to extend over a period of 40 years with interest at 3 percent. Amortization of the cost of the project, with 3 percent interest in a 40-year period, requires an annual charge of \$1,782,400. The annual operation and maintenance charge of \$380,000 added to this gives a total annual charge of \$2,162,400 which would be necessary to operate, maintain, and amortize the cost of the project in 40 years with interest at 3 percent.

ESTIMATED RETURNS FROM PROJECT

The Bullshead Dam power plant will be interconnected with the Parker Dam power plant and the output of the two plants will be combined for the service of the market area. Certain contracts already have been executed under which the United States furnishes power from the Parker plant. Estimates have been made of prospective-future requirements. Data relative to the power and energy require-

ments of the area and the probable revenues from fulfilling these requirements are shown in table VII which follows:

TABLE VII.—*Parker Dam power project and Bullshead (Davis) Dam project—prospective requirements and revenues*

Customer	Amount of reserved power	Estimated usage (millions of kilowatt-hours)	Readiness to serve (charge per month)	Energy rate (mills per kilowatt-hour)	Estimated annual revenue
Salt River Valley water users:					
Present.....	30,000	150	\$6,250	1.9	\$360,000
Contemplated additional.....	10,000	50	2,083	1.9	120,000
Central Arizona Light & Power Co.....	30,000	150	6,250	1.9	360,000
San Carolos Indian project.....	5,000	12	2,460	2.0	35,300
Tucson Gas, Electric Light & Power Co.....	15,000	60	9,300	2.0	188,400
Gila project pumping.....	214,000	865	-----	2.5	2,162,400
Imperial irrigation district.....	15,000	40	7,500	2.25	180,000
Gila Valley power district.....	1,000	3	750	(¹)	15,750
Yuma irrigation district.....	1,000	3	750	(¹)	15,750
City of Yuma or Arizona Edison Co.....	3,000	7	2,250	(¹)	42,750
Nevada-California Electric Corporation.....	5,000	12	3,750	(¹)	72,000
Total.....	-----	1,334	-----	-----	3,552,350

¹ First 50,000 kilowatt-hours per month at 4 mills per kilowatt-hour; next 100,000 kilowatt-hours per month at 3 mills per kilowatt-hour; all over 150,000 kilowatt-hours per month at 2.25 mills per kilowatt-hour.

RATIO OF COST TO REVENUE

In comparing the cost and revenues of the Bullshead Dam project consideration must be given to the annual charges necessary to amortize the Parker Dam power project. The annual charge for the Parker Dam power project and the Bullshead Dam project are given in table VIII.

TABLE VIII.—*Parker and Bullshead (Davis) annual charges combined*

Annual cost of Parker Dam power project.....	\$956,800
Annual cost of Bullshead Dam project.....	2,162,400
Total.....	3,119,200

With the cost of the Bullshead Dam project allocated to power, therefore, the ratio of project cost to estimated revenue is 1:1.14.

Appendix 1215

DAVIS DAM TRANSMISSION CIRCUITS

Davis Dam transmission circuits

Circuit terminals	Ownership	Length	Operat- ing voltage	Supporting structures	Number of 3 ϕ circuits	Conductor	Date in service
Davis-Coolidge.....	USBR	<i>Miles</i> 292	<i>Kilovolts</i> 230	Steel tower.....	Single.....	<i>Size</i> 795, 000 CM	Under construction.
Davis-Hoover.....	USBR	74	230	do.....	do.....	795, 000 CM	Do.
Davis-Parker.....	USBR	82	230	do.....	do.....	795, 000 CM	Do.
Davis-Kingman Line.....	USBR	28	69	Wood pole.....	do.....	2/0	January 1948.
Davis-Needles Line.....	USBR	12	69	do.....	do.....		May 20, 1946.
<i>Major extensions from above circuits:</i>							
Coolidge-ED-5.....	USBR	30	115	Wood H frame.....	do.....	336, 400 CM	Under construction.
Phoenix-Tucson No. 2.....	USBR	125	115	do.....	do.....	336, 400 CM	Do.
Tucson Cochise.....	USBR	80	115	do.....	do.....	336, 400 CM	Do.

Appendix 1216

DAVIS DAM

ALLOCATION OF ENERGY

June 23, 1948

JUNE 3, 1948.

Memorandum

To: Secretary J. A. Krug (through Division of Power).

From: Commissioner.

Subject: Proposed allocation of Davis power and energy to applicants therefor—Davis Dam project.

Following your approval on February 10, 1948, of the Interim Schedule of Rates for Wholesale Firm Power Service (Schedule R3-F3) for the Davis Dam project, Regional Director Moritz dispatched a letter to all prospective applicants for Davis power announcing your approval of the schedule of rates and requesting completion of an application form by March 31, 1948. The letter, which was dated February 27, 1948, is enclosed and marked "Exhibit A."

In response to the announcement and request, Mr. Moritz received applications for Davis power in a total amount far in excess of the 180,000 kilowatts that is expected to be available at load centers from the Davis power plant. The individual applications and a summary thereof by applicants are enclosed and marked respectively "Exhibits B and C." A summary of the applications filed, grouped by States, is shown in table 1.

TABLE 1.—*Summary of applications filed*
[Power in kilowatts and energy in millions of kilowatt-hours annually]

State	Classification of prospective customers				Total	
	Preference		Nonpreference		Power	Energy
	Power	Energy	Power	Energy		
Arizona.....	501, 325	2, 394	125, 500	584	626, 825	2, 978
California.....	222, 480	1, 149	66, 200	397	288, 680	1, 546
Nevada.....	60, 000	350	-----	-----	60, 000	350
Utah.....	10, 300	33	-----	-----	10, 300	33
Total.....	794, 105	3, 926	191, 700	981	985, 805	4, 907

Table 2 shows the summary of applications in table 1 after elimination of the apparent duplications.

TABLE 2.—*Summary of applications after elimination of apparent duplications*
[Power in kilowatts and energy in millions of kilowatt-hours annually]

State	Classification of prospective customers				Total	
	Preference		Nonpreference			
	Power	Energy	Power	Energy	Power	Energy
Arizona.....	300, 280	1, 193	22, 500	101	322, 780	1, 294
California.....	222, 480	1, 149	66, 200	397	288, 680	1, 546
Nevada.....	60, 000	350	-----	-----	60, 000	350
Utah.....	10, 300	33	-----	-----	10, 300	33
Total.....	593, 060	2, 725	88, 700	498	681, 760	3, 223

In view of the applications for Davis power far exceeding the amount which will be available, the power allotment of Davis capacity becomes a difficult problem. In considering this problem the Bureau has used the following priorities:

- (a) Fulfillment of commitments for power from other Colorado River sources in present contracts for Parker power.
- (b) Federal agencies within the Department of the Interior.
- (c) Other Federal agencies.
- (d) Certain small contractors which have preference under reclamation law and also are now served directly by the Parker power system.
- (e) Other applicants which have preference under reclamation law.
- (f) All other applicants.

Using these priorities and limiting allotments to applicants which could be either served directly by the Parker-Davis transmission system, which has been described to the Congress in requests for appropriations, or applicants in the State of California which manifestly could make transmission arrangements with other agencies, the Bureau has prepared and recommends the allotment shown in table 3.

TABLE 3.—*Allocation of Davis power (kilowatts)*

(a) Fulfillment of commitments in contracts for Parker power:	
Gila project.....	2, 500
Bagdad Copper Corp. (contract I2r-13919).....	4, 000
Colorado River Indian irrigation project (contract I1r-1398).....	2, 000
Imperial Irrigation District (contract I2r-11729).....	15, 000
San Carlos Indian irrigation project (contract I1r-1329).....	5, 000
Tucson Gas, Electric Light & Power Co. (contract I2r-11533)....	15, 000
Subtotal.....	43, 500

TABLE 3.—Allocation of Davis power (kilowatts)—Continued

(b) Federal agencies within the Department of the Interior:	
San Carlos Indian irrigation project.....	9,000
(c) Other Federal agencies:	
Army Engineer Board, Imperial Dam, Arizona.....	3,000
Army Air Force stations, California.....	15,000
Veterans' Administration Center, Whipple, Ariz.....	225
(d) Certain small contractors which have preference under reclamation law and also are now served directly by the Parker power system:	
Gila Valley Power District.....	2,000
Yuma Irrigation District.....	1,500
(e) Other applicants which have preference under reclamation law:	
State of Nevada through its Colorado River Commission.....	¹ 45,000
Imperial Irrigation District.....	² 15,000
State of Arizona through the Arizona Power Authority.....	³ 45,775
Total.....	180,000

¹ To be temporarily sold by the Bureau of Reclamation, as explained in the text.

² Subject to recapture by the Bureau if and when the Imperial Irrigation District places the proposed Pilot Knob power plant in operation.

³ Includes 14,000 kilowatts subject to withdrawal by the Bureau upon 2 years' notice for use in the operation of the Gila project.

After providing for the immediate requirements for operation of the pumping plants of the Gila project, the requirements of applicants having rights to power from other sources in contracts for Parker power to the extent of the commitments in such contracts, and the applications of the San Carlos Indian irrigation project, the Army Engineer Board, the Veterans' Administration center, and two districts now being served by the Parker power system, aggregating in total 59,225 kilowatts, there remains 120,775 kilowatts for allotment to other applicants. Of this amount, 45,000 kilowatts is recommended for the State of Nevada (Nevada has applied for 60,000 kilowatts or one-third of all Davis power), and 30,000 kilowatts is recommended for customers in the State of California. All of the remaining 45,775 kilowatts is recommended to be allotted to the State of Arizona because the most desperate need for power in the Davis market area, which has been described to the Congress as central and southern Arizona, southern Nevada, and southern California, is in Arizona.

It is understood that the State of Nevada does not contemplate immediate need for Davis power but is conducting a campaign for introduction of additional industries in the basic magnesium plant predicated on the availability of Davis power to supplement its power from Hoover Dam. In view of this situation, it is recommended that the allocation to the State of Nevada be temporarily sold by the Bureau to the municipalities of Los Angeles, Burbank, Glendale, and Pasadena subject to withdrawal by the State of Nevada upon 1 year's notice in such increments as the State may desire. Such power would be apportioned among the four California municipalities in the ratio of the amounts requested by those municipalities and withdrawals would be made in the same proportion.

One-half of the 30,000 kilowatts allotted for use in the State of California is recommended for the Imperial Irrigation District, a preference customer. Since the capacity of the proposed Pilot Knob power plant and the plants at the drops on the All-American Canal plus 15,000 kilowatts of Davis power under the commitment in the district's contract for Parker power would make ample hydroelectric capacity available to the district, it is recommended that the 15,000 kilowatts of Davis power over and above the 15,000-kilowatt Parker contract commitment be subject to recapture by the Bureau if and when the district places the proposed Pilot Knob power plant in operation.

The Arizona Power Authority has been allotted all of the 45,775 kilowatts recommended for Arizona to be made available to other applicants which have preference under reclamation law. After elimination of apparent duplication, such other preference applicants have applied to the Bureau for 228,000 kilowatts of Davis power. The authority is in a better position than the Bureau to apportion such 45,775 kilowatts among all such applicants because the authority can supplement Davis power and energy with its Hoover Dam energy for which it has not yet exercised its right to take. Such allotment of the entire amount to the authority was recommended to you by the Arizona Electric Coordinating Committee in its letter of March 26, 1948, and such allotment has been advocated by representatives of the Rural Electrification Administration. It will be the Bureau's proposal in contracting with the authority to require it to observe the preferences established in reclamation law in the resale of Davis power. It must be pointed out, however, that the preference provisions governing disposition of power by the authority (sec. 6 (b) of the Arizona Power Authority Act, as amended) are not in all respects identical with the preference provisions of the reclamation law, although the authority is itself a preference customer under reclamation law. Accordingly, without an amendment to its act, the authority could lawfully follow the preference provisions of reclamation law only to the extent that such law is consistent with the authority's powers under its own act.

In order to assure the use in Arizona of Davis power which will be required for the operation of the pumping plants of the Gila project as its development proceeds but which is not required at the present stage of development of the project, such increased requirements of the project for Davis power have been included in the 45,775 kilowatts allotted to the Arizona Power Authority. However, it is recommended that 14,000 kilowatts of the 45,775 kilowatts be subject to withdrawal by the Bureau upon 2 years' notice in such increments as are required for use in the operation of the Gila project.

A detailed analysis of the applications granted or rejected, including the amounts thereof and the reasons therefor, is enclosed and marked "Exhibit D."

It is recommended that you approve the allotment of Davis power shown in table 3 subject to the negotiation of acceptable contracts. Upon receipt of such approval the Bureau will immediately undertake negotiation of such contracts.

(Sgd.) MICHAEL W. STRAUS.

Enclosure 308.

I concur June 16, 1948.

[s] WALTON SEYMOUR,
Director, Division of Power.

I concur June 17, 1948.

[s] W. E. W.
[s] O. L. C.

Approved: June 23, 1948.

[s] J. A. KRUG,
Secretary of the Interior.

Copy for Division of Power.

cc—Reg. Dir., Boulder City, Nev.

Reg. Csl., Los Angeles, Calif.

(Exhibits "A" through "D" omitted to conserve space)

Appendix 1217

RELATED PROJECTS:

EXTRACTS FROM FLOOD CONTROL ACT OF 1944

(Act of December 22, 1944, 58 Stat. 887)

* * * * *

(a) Plans, proposals, or reports of the Chief of Engineers, War Department, for any works of improvement for navigation or flood control not heretofore or herein authorized, shall be submitted to the Congress only upon compliance with the provisions of this paragraph (a). Investigations which form the basis of any such plans, proposals, or reports shall be conducted in such a manner as to give to the affected State or States, during the course of the investigations, information developed by the investigations and also opportunity for consultation regarding plans and proposals, and, to the extent deemed practicable by the Chief of Engineers, opportunity to cooperate in the investigations. If such investigations in whole or part are concerned with the use or control of waters arising west of the ninety-seventh meridian, the Chief of Engineers shall give to the Secretary of the Interior, during the course of the investigations, information developed by the investigations and also opportunity for consultation regarding plans and proposals, and to the extent deemed practicable by the Chief of Engineers, opportunity to cooperate in the investigations. The relations of the Chief of Engineers with any State under this paragraph (a) shall be with the Governor of the State or such official or agency of the State as the Governor may designate. The term "affected State or States" shall include those in which the works or any part thereof are proposed to be located; those which in whole or part are both within the drainage basin involved and situated in a State lying wholly or in part west of the ninety-eighth meridian; and such of those which are east of the ninety-eighth meridian as, in the judgment of the Chief of Engineers, will be substantially affected. Such plans, proposals, or reports and related investigations shall be made to the end, among other things, of facilitating the coordination of plans for the construction and operation of the proposed works with other plans involving the waters which would be used or controlled by such proposed works. Each report submitting any such plans or proposals to the Congress shall set out therein, among other things, the relationship between the plans for

construction and operation of the proposed works and the plans, if any, submitted by the affected States and by the Secretary of the Interior. The Chief of Engineers shall transmit a copy of his proposed report to each affected State, and, in case the plans or proposals covered by the report are concerned with the use or control of waters which rise in whole or in part west of the ninety-seventh meridian, to the Secretary of the Interior. Within ninety days from the date of receipt of said proposed report, the written views and recommendations of each affected State and of the Secretary of the Interior may be submitted to the Chief of Engineers. The Secretary of War shall transmit to the Congress, with such comments and recommendations as he deems appropriate, the proposed report together with the submitted views and recommendations of affected States and of the Secretary of the Interior. The Secretary of War may prepare and make said transmittal any time following said ninety-day period. The letter of transmittal and its attachments shall be printed as a House or Senate document.

* * * * *

(c) The Secretary of the Interior, in making investigations of and reports on works for irrigation and purposes incidental thereto shall, in relation to an affected State or States (as defined in paragraph (a) of this section), and to the Secretary of War, be subject to the same provisions regarding investigations, plans, proposals, and reports as prescribed in paragraph (a) of this section for the Chief of Engineers and the Secretary of War. In the event a submission of views and recommendations, made by an affected State or by the Secretary of War pursuant to said provisions, sets forth objections to the plans or proposals covered by the report of the Secretary of the Interior, the proposed works shall not be deemed authorized except upon approval by an Act of Congress; and subsection 9 (a) of the Reclamation Project Act of 1939 (53 Stat. 1187) and subsection 3 (a) of the Act of August 11, 1939 (53 Stat. 1418), as amended, are hereby amended accordingly.

* * * * *

Part XIII

SUPREME COURT LITIGATION

Appendix No.		Page
1301	<i>Arizona v. California</i> et al. (283 U. S. 423 (1931))	A771
1302	<i>Arizona v. California</i> et al. (292 U. S. 341 (1934))	A783
1303	<i>United States v. Arizona</i> (295 U. S. 174 (1935))	A795
1304	<i>Arizona v. California</i> et al. (298 U. S. 558 (1936)); rehearing denied (299 U. S. 618 (1936))	A805

A769

Appendix 1301

**SUPREME COURT LITIGATION:
ARIZONA v. CALIFORNIA ET AL. (283 U. S. 423 (1931))**

SUPREME COURT OF THE UNITED STATES

NO. 19, ORIGINAL—OCTOBER TERM, 1930

STATE OF ARIZONA *v.* STATE OF CALIFORNIA ET AL.

[May 18, 1931]

Mr. Justice BRANDEIS delivered the opinion of the Court.

The Boulder Canyon Project Act, December 21, 1928 (c. 42, 45 Stat. 1057), authorizes the Secretary of the Interior, at the expense of the United States, to construct at Black Canyon on the Colorado River, a dam, a storage reservoir, and a hydroelectric plant; provides for their control, management, and operation by the United States; and declares that the authority is conferred "subject to the terms of the Colorado River compact," "for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking."

The Colorado River Compact is an agreement for the apportionment of the water of the river and its tributaries. After several years of preliminary informal discussion, Colorado, Wyoming, Utah, New Mexico, Arizona, Nevada, and California—the seven States through which the river system extends—appointed commissioners in 1921 to formulate an agreement; and Congress, upon request, gave its assent, and authorized the appointment of a representative to act for the United States. Act of August 19, 1921, c. 72 (42 Stat. 171). On November 24, 1922, these commissioners and the federal representative signed an agreement to become effective when ratified by Congress and the legislatures of all of these States. The Boulder Canyon Project Act approved this agreement subject to certain limitations and conditions, the approval to become effective upon the ratification of the compact, as so modified, by the legislatures of California and at least five of the six other States. The legislatures of all these

States except Arizona ratified the modified compact and the Act was accordingly declared to be in effect. Proclamation of June 25, 1929 (46 Stat. 20.)

On October 13, 1930, Arizona filed this original bill of complaint against Ray Lyman Wilbur, Secretary of the Interior, and the States of California, Nevada, Utah, New Mexico, Colorado and Wyoming. It charges that Wilbur is proceeding in violation of the laws of Arizona to invade its quasi-sovereign rights by building at Black Canyon on the Colorado River a dam, half of which is to be in Arizona, and a reservoir to store all the water of the river flowing above it in Arizona, for the purpose of diverting part of these waters from Arizona for consumptive use elsewhere; and of preventing the beneficial consumptive use in Arizona of the unappropriated water of the river now flowing in that State; that these things are being done under color of authority of the Boulder Canyon Project Act; that this Act purports to authorize the construction of the dam and reservoir, the diversion of the water from Arizona, and its perpetual use elsewhere; that the Act directs and requires Wilbur to permit no use or future appropriation of the unappropriated water of the main stream of the Colorado River, now flowing in Arizona and to be stored by the said dam and reservoir, except subject to the conditions and reservations contained in the Colorado River Compact; and that the Act thus attempts to enforce as against Arizona, and to its irreparable injury, the compact which it has refused to ratify. The bill prays that the compact and the Act "and each and every part thereof, be decreed to be unconstitutional, void and of no effect; that the defendants and each of them be permanently enjoined and restrained from enforcing or carrying out said compact or said act, or any of the provisions thereof, and from carrying out the three pretended contracts hereinabove referred to, or any of them, or any of their provisions, [meaning certain contracts executed by Wilbur on behalf of the United States for the use of the stored water and developed power after the project shall have been completed] and from doing any other act or thing pursuant to or under color of said Boulder Canyon Project Act."

Process was made returnable on January 12, 1931; and on that day all of the defendants moved that the bill be dismissed. The grounds assigned in the motions are (1) that the bill does not join the United States, an indispensable party; (2) that the bill does not present any case or controversy of which the Court can take judicial cognizance; (3) that the proposed action of the defendants will not invade any vested right of the plaintiff or of any of its citizens; (4) that the bill does not state facts sufficient to constitute a cause of action against any of the defendants. The case was heard on these motions.

The wrongs against which redress is sought are, first, the threatened invasion of the quasi-sovereignty of Arizona by Wilbur in building the dam and reservoir without first securing the approval of the State engineer as prescribed by its laws; and, second, the threatened invasion of Arizona's quasi-sovereign right to prohibit or to permit appropriation, under its own laws, of the unappropriated water of the Colorado River flowing within the State. The latter invasion, it is alleged, will consist in the exercise, under the Act and the compact, of a claimed superior right to store, divert, and use such water.

First. The claim that quasi-sovereign rights of Arizona will be invaded by the mere construction of the dam and reservoir rests upon the fact that both structures will be located partly within the State. At Black Canyon, the site of the dam, the middle channel of the river is the boundary between Nevada and Arizona. The latter's statutes prohibit the construction of any dam whatsoever until written approval of plans and specifications shall have been obtained from the State engineer; and the statutes declare in terms that this provision applies to dams to be erected by the United States. Arizona Laws 1929, (c. 102, §§ 1-4). See also Revised Code of 1928 (§§ 3280-3286). The United States has not secured such approval; nor has any application been made by Wilbur, who is proceeding to construct said dam in complete disregard of this law of Arizona.

The United States may perform its functions without conforming to the police regulations of a State. *Johnson v. Maryland*, 254 U. S. 51; *Hunt v. United States*, 278 U. S. 96. If Congress has power to authorize the construction of the dam and reservoir, Wilbur is under no obligation to submit the plans and specifications to the State engineer for approval.¹ And the federal Government has the power to create this obstruction in the river for the purpose of improving navigation if the Colorado River is navigable. *Pennsylvania v. Wheeling and Belmont Bridge Co.*, 18 How. 421, 430; *South Carolina v. Georgia*, 93 U. S. 4, 11; *Gibson v. United States*, 166 U. S. 269; *United States v. Chandler-Dunbar Water Power Co.*, 229 U. S. 53, 64; *Greenleaf Johnson Lumber Co. v. Garrison*, 237 U. S. 251, 258-68. Arizona contends both that the river is not navigable, and that it was not the purpose of Congress to improve navigation.

The bill alleges that "the river has never been, and is not now, a navigable river." The argument is that the question whether a stream is navigable is one of fact; and that hence the motion to

¹ The further allegation that the proposed dam, reservoir, and power plants, when completed, may not be subject to the taxing power of Arizona, may be disregarded. The Act provides that the title to such works shall remain forever in the United States, and such exemption is but an ordinary incident of any public undertaking by the federal government.

dismiss admits the allegation that the river is not navigable. It is true that whether a stream is navigable in law depends upon whether it is navigable in fact; *United States v. Utah*, 283 U. S. 64;² and that a motion to dismiss, like a demurrer, admits every well-pleaded allegation of fact, *Payne v. Central Pacific Ry. Co.*, 255 U. S. 228, 232. But a court may take judicial notice that a river within its jurisdiction is navigable. *United States v. Rio Grande Dam and Irrigation Co.*, 174 U. S. 690, 697; *Wear v. Kansas*, 245 U. S. 154, 158. We know judicially, from the evidence of history, that a large part of the Colorado River south of Black Canyon was formerly navigable,³ and that the main obstacles to navigation have been the accumulations of silt coming from the upper reaches of the river system, and the irregularity in the flow due to periods of low water.⁴

² Compare *The Daniel Ball*, 10 Wall. 557, 563; *The Montello*, 20 Wall. 430; *St. Anthony Falls Water Power Co. v. St. Paul Water Commissioners*, 168 U. S. 349; *Leory v. United States*, 177 U. S. 621; *Economy Light & Power Co. v. United States*, 256 U. S. 113; *Oklahoma v. Texas*, 258 U. S. 574, 590, 591; *Brewer-Elliott Oil & Gas Co. v. United States*, 260 U. S. 77, 86; *United States v. Holt State Bank*, 270 U. S. 49, 56, 57.

³ Navigability extended as far north as the mouth of the Virgin River at Black Canyon. See Report Upon the Colorado River of the West, H. R. Ex. Doc. No. 90, 36th Cong., 1st Sess., June 5, 1860, pts. I-II, and maps; H. R. Mis. Doc. No. 37, 42d Cong., 1st Sess., April 15, 1871; H. R. Ex. Doc. No. 18, 51st Cong., 2d Sess., December 2, 1890; H. R. Doc. No. 101, 54th Cong., 1st Sess., December 27, 1895; H. R. Doc. No. 67, 56th Cong., 2d Sess., December 5, 1900; Ann. Rep., Chief of Engineers, War Department, 1879, pp. 1773-85; Hodge, *Arizona As It Is* (1877), pp. 208-10; Hinton, *Handbook to Arizona* (1878), pp. 66-67, 371-72, and maps; Freeman, *The Colorado River* (1923), cc. I, V, VII, particularly pp. 146-67; Sloan, *History of Arizona* (1930), vol. i, pp. 216-36.

By the Act of July 5, 1884, c. 229, 23 Stat. 133, 144, Congress appropriated \$25,000 for the improvement of navigation on the Colorado River between Fort Yuma and a point thirty miles above Rioville, which was located at the mouth of the Virgin River. An additional \$10,000 for a levee at Yuma was appropriated by the Act of July 22, 1892, c. 158, 27 Stat. 88, 108-09. See H. R. Doc. Nos. 204 and 237, 58th Cong., 2d Sess., December 18, 1903. As to navigability north and east of Boulder Canyon, see *United States v. Utah*, 283 U. S. 64.

⁴ See Report by Director of Reclamation Service on Problems of Imperial Valley and Vicinity, Sen. Doc. No. 142, 67th Cong., 2d Sess., February 23, 1922, pp. 3-10, 240; Report of the Colorado River Board on the Boulder Dam Project, H. R. Doc. No. 446, 70th Cong., 2d Sess., December 3, 1928, pp. 12-14; Report of the All-American Canal Board, July 22, 1919, pp. 24-33. For the geological history of the lower Colorado area, see Information Presented to the House Committee on Irrigation and Reclamation in connection with H. R. 2903, 68th Cong., 1st Sess., 1924, pp. 135-43. All the former documents on the Colorado River Development were adopted as part of the hearings on Boulder Canyon Project Act. See Hearings Before the House Committee on Irrigation and Reclamation on H. R. 5773, 70th Cong., 1st Sess., January 6, 1928, pp. 8-10.

Commercial disuse resulting from changed geographical conditions and a Congressional failure to deal with them, does not amount to an abandonment of a navigable river or prohibit future exertion of federal control. *Economy Light & Power Co. v. United States*, 256 U. S. 113, 118, 124. We know from the reports of the committees of the Congress which recommended the Boulder Canyon project that, in the opinion of the government engineers, the silt will be arrested by the dam; that, through use of the stored water, irregularity in its flow below Black Canyon can be largely overcome; and that navigation for considerable distances both above and below the dam will become feasible.⁵ Compare *St. Anthony Falls Water Power Co. v. St. Paul Water Commissioners*, 168 U. S. 349, 359; *United States v. Cress*, 243 U. S. 316, 326.

The bill further alleges that the "recital in said act that the purpose thereof is the improvement of navigation" "is a mere subterfuge and false pretense." It quotes a passage in Art. IV of the compact, to which the Act is subject, which declares that "inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the development of its basin, the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes;" and alleges that "even if said river were navigable, the diversion, sale and delivery of water therefrom, as authorized in said act, would not improve, but would destroy, its navigable capacity."⁶

⁵ The House Committee on Irrigation and Reclamation stated that one of the purposes of the Act was to have the flow of the river below the dam "regulated and even" and thus "susceptible to use by power boats and other small craft. The great reservoir will, of course, be susceptible of navigation." See Boulder Canyon Project, H. R. Rep. 918, 70th Cong., 1st Sess., March 15, 1928, p. 6. As to control of silt deposits, see *id.*, pp. 16-17. A similar report was made to the Senate. See Boulder Canyon Project, Sen. Rep. 592, 70th Cong., 1st Sess., March 20, 1928, pp. 5-7, 16-20. The House Committee said in summary: "The proposed dam would improve navigation probably more than any other works which could be constructed. The dam will so regulate the flow as to make the river very practicable of navigation for 200 miles below and impound water above which could easily be navigated for more than 75 miles." H. R. Rep. 918, *supra*, p. 22. Compare Hearings before the House Committee on Irrigation and Reclamation on H. R. 5773, 70th Cong., 1st Sess., pt. 3, January 13-14, 1928, pp. 340-41; Hearings Before the Senate Committee on Irrigation and Reclamation on S. 728 and S. 1274, *id.*, January 17-21, 1928, pp. 368-77, 384, 420-21. Since below Black Canyon the Colorado River is a boundary stream, such navigation will be at least partially interstate.

⁶ Reliance is also had upon the fact that the bill as originally introduced contained no reference to navigation, but that the statements of this purpose, found in the Act, were inserted during the course of the hearings. See Minority Views, H. R. Rep. No. 918, 70th Cong., 1st Sess., pt. 3, pp. 14-18.

Into the motives which induced members of Congress to enact the Boulder Canyon Project Act, this Court may not enquire. *McCray v. United States*, 195 U. S. 27, 53-59; *Weber v. Freed*, 239 U. S. 325, 329-30; *Wilson v. New*, 243 U. S. 332, 358-59; *United States v. Doremus*, 249 U. S. 86, 93-94; *Dakota Central Telephone v. South Dakota*, 250 U. S. 163, 187; *Hamilton v. Kentucky Distilleries Co.*, 251 U. S. 146, 161; *Smith v. Kansas City Title & Trust Co.*, 255 U. S. 180, 210.⁷ The Act declares that the authority to construct the dam and reservoir is conferred, among other things, for the purpose of "improving navigation and regulating the flow of the river." As the river is navigable and the means which the Act provides are not unrelated to the control of navigation, *United States v. River Rouge Improvement Co.*, 269 U. S. 411, 419, the erection and maintenance of such dam and reservoir are clearly within the powers conferred upon Congress. Whether the particular structures proposed are reasonably necessary, is not for this Court to determine. Compare *Fong Yue Ting v. United States*, 149 U. S. 698, 712-14; *Oceanic Steam Navigation Co. v. Stranahan*, 214 U. S. 320, 340; *United States v. Chandler-Dunbar Water Power Co.*, 229 U. S. 53, 65, 72-73; *Everard's Breweries v. Day* 265 U. S. 545, 559. And the fact that purposes other than navigation will also be served could not invalidate the exercise of the authority conferred, even if those other purposes would not alone have justified an exercise of Congressional power. Compare *Veazie Bank v. Fenno* 8 Wall. 533, 548; *Kaukauna Water Power Co. v. Green Bay & Mississippi Canal Co.*, 142 U. S. 254, 275; *In re Kollock*, 165 U. S. 526, 536; *Weber v. Freed*, *supra*, *United States v. Doremus*, *supra*.

It is urged that the Court is not bound by the recital of purposes in the Act; that we should determine the purpose from its probable effect; and that the effect of the project will be to take out of the river, now non-navigable through lack of water, the last half of its remaining average flow. But the Act specifies that the dam shall be used: "First, for river regulation, improvement of navigation and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights * * *; and third, for power." It is true that the authority conferred is stated to be "subject to the Colorado River Compact," and that instrument makes the improvement of navigation subservient to all other purposes. But the specific statement of primary purpose in the Act governs the general references to the compact. This Court may not

⁷ Similarly, no inquiry may be made concerning the motives or wisdom of a State legislature acting within its proper powers. *United States v. Des Moines Navigation & Railway Co.*, 142 U. S. 510, 544; *Atchison, Topeka & Santa Fe R. R. Co. v. Matthews*, 174 U. S. 96, 102; *Calder v. Michigan*, 218 U. S. 591, 598; *Rast v. Van Deman & Lewis*, 240 U. S. 342, 357, 366. Compare *O'Gorman & Young, Inc. v. Hartford Fire Insurance Co.*, 282 U. S. 251, 258.

assume that Congress had no purpose to aid navigation, and that its real intention was that the stored water shall be so used as to defeat the declared primary purpose. Moreover, unless and until the stored water, which will consist largely of floodwaters now wasted, is consumed in new irrigation projects or in domestic use, substantially all of it will be available for the improvement of navigation. The possible abuse of the power to regulate navigation is not an argument against its existence. *Lottery Case*, 188 U. S. 321, 363; *Flint v. Stone Tracy Co.*, 220 U. S. 107, 168-69; *Wilson v. New*, 243 U. S. 332, 354; *Hamilton v. Kentucky Distilleries, supra*; *Alaska Fish Salting & By-Products Co. v. Smith*, 255 U. S. 44, 48:

Since the grant of authority to build the dam and reservoir is valid as an exercise of the Constitutional power to improve navigation, we have no occasion to decide whether the authority to construct the dam and reservoir might not also have been constitutionally conferred for the specified purpose of irrigating public lands of the United States.⁸ Compare *United States v. Rio Grande Dam and Navigation Co.*, 174 U. S. 690, 703; *United States v. Alford*, 274 U. S. 264. Or for the specified purpose of regulating the flow and preventing floods in this interstate river.⁹ Or as a means of conserving and apportioning its waters among the States equitably

⁸ "A large part of the land through which the Colorado River flows, or which is adjacent or tributary to it, is public domain of which the United States is the proprietor." Colorado River Compact, H. R. Doc. No. 605, 67th Cong., 4th Sess., March 2, 1923, p. 6. As to extent of this land and irrigation projects on it in connection with the Boulder Canyon Dam, see Report of the Director of the Reclamation Service on Problems of Imperial Valley and Vicinity, Sen. Doc. No. 142, 67th Cong., 2d Sess., February 23, 1922, appendices C-D. See also Department of Interior, Twenty-fifth Ann. Rep. Bureau of Reclamation (1926), pp. 2-29; Vacant Public Lands on July 1, 1929, Department of Interior, General Land Office, Circular No. 1197, pp. 3-10; Report of the International Water Commission, H. R. Doc. No. 359, 71st Cong., 2d Sess., April 21, 1930, pp. 98-177, and Bibliography, p. 97.

⁹ Compare the legislation for Mississippi river flood control, independent of navigation improvements. Joint Resolution of May 2, 1922, c. 175, 42 Stat. 504; Act of September 22, 1922, c. 427, §13, 42 Stat. 1038, 1047; Act of December 22, 1927, c. 5, 45 Stat. 2, 38; and particularly Act of May 15, 1928, c. 569, 45 Stat. 534.

entitled thereto. Or for purpose of performing international obligations.¹⁰ Compare *Missouri v. Holland*, 252 U. S. 416.

Second. The further claim is that the mere existence of the Act will invade quasi-sovereign rights of Arizona by preventing the State from exercising its right to prohibit or permit under its own laws the appropriation of unappropriated water flowing within or on its borders. The opportunity and need for further appropriations are fully set forth in the bill. Arizona is arid and irrigation is necessary for cultivation of additional land. The future growth and welfare of the State are largely dependent upon such reclamation. It is alleged that there are within Arizona 2,000,000 acres not now irrigated which are susceptible of irrigation by further appropriations from the Colorado River.¹¹ To appropriate water means to take and divert a specified quantity thereof and put it to beneficial use in accordance with the laws of the State where such water is found, and, by so doing, to acquire under such laws, a vested right to take and divert from the same source, and to use and consume the same quantity of water annually forever, subject only to the right of prior appropriations. Under the law of Arizona, the perfected vested right to appropriate water flowing within the State cannot be acquired without the performance of physical acts through which the water is and will in fact be diverted to beneficial use. Topographical conditions make it necessary that land in the State be irrigated in large projects. The Colorado River flows, both on the boundary between Arizona and

¹⁰ The Colorado River and its tributaries have frequently been the subject of treaties between the United States and Mexico. See Treaty of Guadalupe Hidalgo, February 2, 1848, Art. VII, in Malloy, *United States Treaties*, vol. i, pp. 1107, 1111; Gadsden Treaty, December 30, 1853, Art. IV, *id.*, pp. 1121, 1123; Boundary Convention of March 1, 1889, Arts. I, V, *id.*, pp. 1167-92. Compare the 1912 proposals reported in Hearings Before the House Committee on the Irrigation of Arid Lands, 66th Cong., 1st Sess., July 9-14, 1919, Append., pp. 323-26. As to Rio Grande River, see Convention of May 21, 1906, Treaty Series No. 455; 21 Op. Atty. Gen. 274, 282, 518; Sen. Doc. No. 154, 57th Cong., 2d Sess., February 14, 1903. For the international aspects of the proposed Colorado River Development, see Hearings Before the House Committee on Irrigation of Arid Lands, 66th Cong., 1st Sess., July 9-14, 1919 Append., pp. 323-48; Colorado River Compact, H. R. Doc. No. 605, 67th Cong., 4th Sess., March 2, 1923, pp. 5-6; Report of the All-American Canal Board, July 22, 1919, pp. 14-15; Report of International Water Commission, *supra* Note 8, pp. 17-23, 85-283.

¹¹ Of the total length of 1,293 miles of the Colorado River, 638 miles are within or on the boundaries of Arizona. After leaving Utah, the main river flows for 292 miles wholly in Arizona. Then, the middle of the channel forms the boundary between Arizona and Nevada for 145 miles; and for 235 miles, the boundary between Arizona and California. Tributaries of the river flow within Arizona for a combined length of 836 miles, and most of these enter the main stream below Black Canyon.

Nevada, and in Arizona alone, through an almost continuous series of deep canyons, the walls of which rise in Arizona to a height varying from a few hundred to more than 5000 feet. The cost of installing the dams, reservoirs, canals, and distribution works required to effect any diversion, will be very heavy; and financing on a large scale is indispensable. Such financing will be impossible unless it clearly appears that, at or prior to the time of constructing such works, vested rights to the permanent use of the water will be acquired.

The alleged interference with the right of the State to control additional appropriations is based upon the following facts. The average annual flow of the Colorado River system, including the tributaries, is 18,000,000 acre-feet.¹² Only 9,000,000 acre-feet have been appropriated by Arizona and the defendant States. Of this 3,500,000 acre-feet have been appropriated in Arizona under its laws, and the remaining 5,500,000 acre-feet by the other States. The 9,000,000 acre-feet unappropriated are now subject to appropriation in Arizona under its laws. It is alleged that there are numerous sites suitable for the construction, maintenance, and operation of dams and reservoirs required for the irrigation of land in Arizona; and that actual projects have been planned for the irrigation of 1,000,000 acres, including 100,000 acres owned by the State. For this purpose 4,500,000 acre-feet annually will be additionally required. Permits to appropriate this water have been granted by the State; and definite plans to carry out projects for the building of dams on that part of the river flowing in or on the borders of Arizona have been approved by the State engineer. It is stated that but for the passage of the Boulder Canyon Project Act, construction work would long since have commenced.

It is conceded that the continued use of the 3,500,000 acre-feet of water already appropriated in Arizona is not now threatened. And there is no allegation that at the present time the enjoyment of these rights is being interfered with in any way. The claim strenuously urged is that the existence of the Act, and the threatened exercise of the authority to use the stored water pursuant to its terms, will prevent Arizona from exercising its right to control the making of further appropriations. It is argued that such needed additional appropriations will be prevented because Wilbur proposes to store the entire unappropriated flow of the main stream of the Colorado River at the dam; that Arizona, and those claiming under it, will not be permitted to take any water from the reservoir except upon agreeing that the use shall be subject to the compact; that under the terms of the compact they will not be entitled to appropriate any water in

¹² An acre-foot is the quantity of water required to cover an acre to a depth of one foot—43,560 cubic feet. See *Wyoming v. Colorado*, 259 U. S. 419, 458.

excess of that to which there are now perfected rights in Arizona;¹³ and that in order to irrigate land in Arizona it is frequently necessary to utilize rights of way over lands of the United States, and since the Act provides that all such rights of way or other privileges to be granted by the United States shall be upon the express condition and with the express covenant that they shall be subject to the compact, the Act in effect prevents Arizona and those claiming under it from acquiring such rights.

This contention cannot prevail because it is based not on any actual or threatened impairment of Arizona's rights but upon assumed potential invasions. The Act does not purport to affect any legal right of the State, or to limit in any way the exercise of its legal right to appropriate any of the unappropriated 9,000,000 acre-feet which may flow within or on its borders. On the contrary, section 18 specifically declares that nothing therein "shall be construed as interfering with such rights as the States now have either to the waters within their borders or to adopt such policies and enact such laws as they may deem necessary with respect to the appropriation, control, and use of water within their borders, except as modified" by interstate agreement. As Arizona has made no such agreement, the Act leaves its legal rights unimpaired. There is no allegation of definite physical acts by which Wilbur is interfering, or will interfere, with the exercise by Arizona of its right to make further appropriations by means of diversions above the dam or with the enjoyment

¹³ The allegation is in substance this. Of the average annual flow of 18,000,000 acre-feet, the Act and compact permit the present final appropriation of only 15,000,000. This quantity must satisfy all existing appropriations as well as all future appropriations. Of these 15,000,000, one-half is apportioned to the so-called Upper Basin, which includes Utah, Colorado, Wyoming, and New Mexico. The remaining 7,500,000 acre-feet have been allotted to the so-called Lower Basin, which includes Arizona and parts of Nevada and California. Of the water thus allotted to the lower basin, 6,500,000 acre-feet have already been appropriated; and, under a contract made by Wilbur with the Metropolitan Water District of Southern California, the remaining 1,000,000 are to be diverted to it. Thus it is argued that consistently with the Act and compact, it will be impossible for Arizona to make any further appropriation, unless it be under the following provision. The compact provides that no part of the 3,000,000 acre-feet of the estimated annual flow, not now apportioned, shall be appropriated until after October 1, 1963, as such water may be required to satisfy rights of Mexico, through which country the river flows after leaving the United States. If the satisfaction of recognized Mexican rights reduces the unappropriated water below 1,000,000 acre-feet annually, the lower basin States may require the upper basin States to deliver from their apportionment, one-half of the amount required to meet the deficit. It is claimed that Arizona thus may use, but not legally appropriate, any unappropriated water which is available for use by it; and that this restricted right does not justify the expenditures necessary for putting the water to beneficial use in Arizona.

of water so appropriated.¹⁴ Nor any specific allegation of physical acts impeding the exercise of its right to make future appropriations by means of diversions below the dam, or limiting the enjoyment of rights so acquired, unless it be by preventing an adequate quantity of water from flowing in the river at any necessary point of diversion.

When the bill was filed, the construction of the dam and reservoir had not been commenced. Years must elapse before the project is completed. If by operations at the dam any then perfected right of Arizona, or of those claiming under it, should hereafter be interfered with, appropriate remedies will be available. Compare *Kansas v. Colorado*, 206 U. S. 46, 117. The bill alleges, that plans have been drawn and permits granted for the taking of additional water in Arizona pursuant to its laws. But Wilbur threatens no physical interference with these projects; and the Act interposes no legal inhibitions on their execution.¹⁵ There is no occasion for determining now Arizona's rights to interstate or local waters which have not yet been, and which may never be, appropriated. *New Jersey v. Sargent*.

¹⁴ There is in the bill a further allegation that, under color of the Act, Wilbur has seized and taken possession of all that part of the Colorado River which flows in Arizona and on the boundary thereof, and of the water now flowing therein, and of all the dam sites and reservoir sites suitable for irrigation of the Arizona land and for the generation of electric power "and now has said river, said water and said sites in his possession; and has excluded and is now excluding the State of Arizona, its citizens, inhabitants, and property owners from said river, said water and said sites, and from all access thereto; has prevented and is now preventing said State, its citizens, inhabitants and property owners from appropriating any of said 8,000,000 acre-feet of unappropriated water * * *". But from other parts of the bill and from the argument, it is clear that there has been no physical taking of possession of anything, and that Wilbur has not trespassed on lands belonging either to Arizona or any of its citizens. This allegation is thus merely a conclusion of law from the fact that Wilbur, in conformity with the provisions of the Act, has made plans for the construction of the dam and reservoir, promulgated regulations concerning the use of the water to be stored, and executed contracts for the use of some of it.

¹⁵ It is also argued that of the 7,500,000 acre-feet allotted by the compact to the upper basin States, only 2,500,000 have already been appropriated, and that thus the presently unused surplus of 5,000,000 acre-feet cannot be appropriated in Arizona. But Arizona is not bound by the compact as it has withheld ratification. If and when withdrawals pursuant to the compact by the upper basin States diminish the amount of water actually available for use in Arizona, appropriate action may then be brought.

The allegation that the inclusion in the compact of the waters of the Gila River (all of which are said to have been appropriated in Arizona) operates to reduce the amount of water which may be taken by that State, can likewise be disregarded. Not being bound by the compact, Arizona has not assented to this inclusion of the Gila appropriations in the allotment to the lower basin; and there is no allegation that Wilbur or any of the defendant States are interfering with perfected rights to the waters of that river, which enters the Colorado 286 miles below Black Canyon.

269 U. S. 328, 338. This Court cannot issue declaratory decrees. Compare *Texas v. Interstate Commerce Commission*, 258 U. S. 158, 162; *Liberty Warehouse v. Grannis*, 273 U. S. 70, 74; *Willing v. Chicago Auditorium Association*, 277 U. S. 274, 289-90. Arizona has, of course, no legal right to use, in aid of appropriation, any land of the United States, and it cannot complain of the provision conditioning the use of such public land. Compare *Utah Power & Light Co. v. United States*, 243 U. S. 389, 403-05.

As we hold that the grant of authority to construct the dam and reservoir is a valid exercise of Congressional power, that the Boulder Canyon Project Act does not purport to abridge the right of Arizona to make, or permit, additional appropriations of water flowing within the State or on its boundaries, and that there is now no threat by Wilbur, or any of the defendant States, to do any act which will interfere with the enjoyment of any present or future appropriation, we have no occasion to consider other questions which have been argued. The bill is dismissed without prejudice to an application for relief in case the stored water is used in such a way as to interfere with the enjoyment by Arizona, or those claiming under it, of any rights already perfected or with the right of Arizona to make additional legal appropriations and to enjoy the same.

Bill dismissed.

Mr. Justice McREYNOLDS is of the opinion that the motions to dismiss should be overruled and the defendants required to answer.

Appendix 1302

SUPREME COURT LITIGATION:

ARIZONA v. CALIFORNIA ET AL. (292 U. S. 341 (1934))

SUPREME COURT OF THE UNITED STATES

NO. ——— ORIGINAL.—OCTOBER TERM 1933

STATE OF ARIZONA, COMPLAINANT, v. STATE OF CALIFORNIA ET AL.

[May 21, 1934]

Mr. Justice BRANDEIS delivered the opinion of the Court.

On October 13, 1930, Arizona sought, by an original bill, a declaration that the Colorado River Compact and the Boulder Canyon Project Act be decreed to be unconstitutional and void; that the Secretary of the Interior and California, Nevada, Utah, New Mexico, Colorado, and Wyoming be permanently enjoined from carrying out said compact or said act; and that they be enjoined from performing contracts which had been executed by the Secretary on behalf of the United States for the use of stored water and developed power after the project shall have been completed, and from doing any other thing under color of the act. The bill was "dismissed without prejudice to an application for relief in case the stored water is used in such a way as to interfere with the enjoyment by Arizona, or those claiming under it, of any rights already perfected or with the right of Arizona to make additional legal appropriations and to enjoy the same." *Arizona v. California*, 283 U. S. 423, 464, 51 S. Ct. 522, 529, 75 L. Ed. 1154.

On February 14, 1934, Arizona moved for leave to file in this Court its original bill of complaint to perpetuate testimony in an action or actions arising out of the Boulder Canyon Project Act which "at some time in the future" it will commence in this Court against California, and others therein named as defendants.¹ The bill sets forth:

(a) The Act of Congress, August 19, 1921 (c. 72, 42 Stat. 171), which authorized Arizona, California, Colorado, Nevada, New

¹ Namely, Colorado, Nevada, New Mexico, Utah, Wyoming, Harold L. Ickes, Secretary of the Interior, Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley Water District, Metropolitan Water District of Southern California, City of Los Angeles, City of San Diego, and County of San Diego.

Mexico, Utah, and Wyoming to enter into a compact regarding the waters of the Colorado River; and the appointment of a representative to act for the United States.

(b) The Colorado River Compact dated November 24, 1922, signed by representatives of the seven states—to “become binding and obligatory when it shall have been approved by the legislature of each of the signatory States and by the Congress of the United States.”

(c) The Act of Congress, December 21, 1928, known as the Boulder Canyon Project Act, c. 42, 45 Stat. 1057 (43 USCA § 617 et seq.), which approved the Colorado River Compact subject to certain limitations and conditions, the approval to become effective upon the ratification of the compact, as so modified, by the Legislature of California and at least five of the other six states.

(d) The Act of California, c. 16, March 4, 1929 (St. Cal. 1929, p. 38) limiting its use of the waters of the Colorado river in conformity with the Boulder Canyon Project Act.

(e) The Proclamation of the President declaring the Boulder Canyon Project Act to be in effect, June 25, 1929, 46 Stat. 3000.

(f) The General Regulation of the Secretary of the Interior, concerning the storage of water in Boulder Dam Reservoir and the delivery thereof, dated April 23, 1930, as amended September 28, 1931.

The bill alleges, among other things:

That no right of Arizona has yet been interfered with; that attempts will be made hereafter to interfere with its rights; that it is not possible to bring the issues which will arise to an immediate judicial investigation or determination, and it may be years before this can be done, because “the cause or causes of action have not accrued and may not accrue for years to come”; that facts known only to certain named persons will be evidence material in the determination of such controversy or controversies; that these persons will be necessary witnesses in the prosecution of the action or actions which Arizona will be compelled to institute in order to protect its rights and those of persons claiming under it; and that all the persons with present knowledge of the present facts may not be available as witnesses when the cause or causes of action shall have accrued to the plaintiff. The prayer is for process to take the oral depositions and to perpetuate the testimony of these witnesses.

On February 20, 1934, a rule issued to those named as defendants to show cause why leave to file the bill should not be granted. All filed returns. Colorado, Nevada, New Mexico, Utah, and Wyoming stated that they have no objection to the filing of the bill or to the taking of any competent testimony; and prayed that to each state should be granted the right of cross-examination and the right to object to any such testimony on any ground either at the time of the

taking or of its presentation to this Court. California and the public agencies of that state expressed a doubt as to the existence of jurisdiction in this Court. They opposed the granting of the motion on the ground that the testimony, if taken, would not be admissible in evidence; opposed also on the ground that the United States is an indispensable party; and insisted that the bill should not be received in the absence of consent by the United States to be sued. The Secretary of the Interior conceded that this Court has jurisdiction, but objected on the same grounds as California to granting the motion. Thereupon a brief was filed by Arizona, reply briefs by respondents, and a brief *amicus curiae* by the city and county of Denver, Colo.

[1] First. No bill to perpetuate testimony has heretofore been filed in this Court; but no reason appears why such a bill may not be entertained in aid of litigation pending in this Court, or to be begun here. Bills to perpetuate testimony had been known as an independent branch of equity jurisdiction before the adoption of the Constitution.² Congress provided for its exercise by the lower federal courts.³ There the jurisdiction has been repeatedly invoked;⁴ and it has been recognized by this Court.⁵

[2] The sole purpose of such a suit is to perpetuate the testimony. To sustain a bill of this character, it must appear that the facts which the plaintiff expects to prove by the testimony of the witnesses sought to be examined will be material in the determination of the matter in controversy; that the testimony will be competent evidence; that depositions of the witnesses cannot be taken and perpetuated in the ordinary methods prescribed by law, because the then condition of the suit (if one is pending) renders it impossible, or (if no suit is then pending) because the plaintiff is not in a position to start one in which the issue may be determined; and that taking of the testimony on bill in equity is made necessary by the danger that it may be lost by delay.

The allegations of the bill presented by Arizona are sufficient to show danger of losing the evidence by delay; and also to show Ari-

² 1 Pomeroy's Equity Jurisprudence (4th Ed.) § 211; *West v. Lord Sackville* L. R. [1903] 2 Ch. Div. 378.

³ Revised Statutes, § 866 (28 USCA § 644): ". . . any circuit [district] court, upon application to it as a court of equity, may, according to the usages of chancery, direct depositions to be taken in perpetuam rei memoriam, if they relate to any matters that may be cognizable in any court of the United States. . . ."

⁴ *New York, etc., Coffee Polishing Co. v. New York Polishing Co.* (C. C.) 9 F. 578; *Id.* (C. C.) 11 F. 813; *Richter v. Jerome* (C. C.) 25 F. 679; *Westinghouse Machinery Co. v. Electric Storage Battery Co.* (C. C. A.) 170 F. 430, 25 L. R. A. (N. S.) 673, reversing (C. C.) 165 F. 992; *The West Ira* (D. C.) 24 F. (2d) 858; *Todd Engineering, etc., Co. v. United States* (C. C. A.) 32 F. (2d) 734; *Union Solvents Corp. v. Butacet Corp.* (D. C.) 2 F. Supp. 375.

⁵ *Richter v. Union Trust Co.*, 115 U. S. 55, 5 S. Ct. 1162, 29 L. Ed. 345; compare *Green v. Compagnia Generale, etc.* (D. C.) 82 F. 490, 494-495.

zona's inability to perpetuate the testimony by the ordinary methods prescribed by law for the taking of depositions. The only question which requires consideration is whether the testimony which it is proposed to take would be material and competent evidence in the litigation contemplated.

[3] Second. The action or actions which Arizona expects to bring may rest upon a claim that "the stored water is used in such a way as to interfere with the enjoyment by Arizona, or those claiming under it, of any rights already perfected or with the right of Arizona to make additional legal appropriations and to enjoy the same." Specifically, Arizona claims rights under section 4 (a) of the Boulder Canyon Project Act (43 USCA § 617c (a)); these rights, it is said, are governed in turn by the terms of the Colorado River Compact. Briefly, the compact apportions the waters of the Colorado river between a group of states, termed the upper basin, north of Lee Ferry, and a group south thereof, the lower basin, among which are Arizona and California. The interference apprehended will, it is alleged, arise out of a refusal of the respondents to accept as correct that construction of article III (b) of the compact which Arizona contends is the proper one. It claims that this paragraph, which declares:

"In addition to the apportionment in Paragraph (a), the lower basin is hereby given the right to increase its beneficial consumptive use of such waters by 1,000,000 acre-feet per annum," means, "that the waters apportioned by Article III (b) of said compact are for the sole and exclusive use and benefit of the State of Arizona."

The bill charges that the Secretary of the Interior and the other defendants refuse to accept such construction; and that, by certain contracts made between the Secretary and the California defendants, they are asserting a right to appropriate the said 1,000,000 acre-feet of water to California uses. The bill states that the decision in some future action construing paragraph (b) will materially affect rights of Arizona arising under the Boulder Canyon Project Act, in particular section 4 (a) thereof.⁶

Arizona seeks, as stated in the bill, to perpetuate, and proposes to introduce in support of its construction of paragraph (b) of article III of the compact, in the actions to be brought in the future, testimony to the following effect by those who in 1922 were connected with the negotiation of the compact:

"The representatives of all the States and the United States except the Arizona delegation were in agreement as to the definition of the

⁶ It is claimed that a future decision as to the meaning of article III (b) will affect rights also under (a) the Colorado River Compact, (b) the conditions required by the Boulder Canyon Project Act to be attached to patents, grants, contracts, concessions, leases, permits, rights of way, and other privileges from the United States, (c) the relative and respective rights of each of the parties (to the suit to perpetuate testimony) in the waters of the Colorado and its tributaries, and the use thereof and the burdens and restrictions upon such use.

Colorado River System, including the Gila River and its tributaries, and as to the division proposed, which substantially apportioned the waters of the Colorado River at Lee Ferry, the point selected as dividing the Upper Basin from the Lower Basin. The Arizona delegation refused and declined to accept the proposed compact because of the inclusion of the Gila River and its tributaries without any compensating provision to the State of Arizona in lieu of the waters thereof, which had already been appropriated and in which no other State could have any interest, on account of the further fact that the waters of the Gila River and its tributaries enter the Colorado River at Yuma, at a point so far down stream and of such low elevation that it was and is impossible to put the waters thereof to beneficial use in the United States after they reach the main stream of the Colorado River. Hence, the Arizona delegation pointed out that the conference was discussing something which had already been disposed of and in any event could not concern any State, other than Arizona. Several days elapsed in a discussion between the said representatives of this problem before a solution was found. The problem was finally thought solved by adding subdivision (b) of Article III to the compact as finally approved by said representatives which reads as follows:

“(b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum.”

“It was agreed between all the representatives of the various States and the representative of the United States, negotiating said compact, that said one million acre-feet apportioned by subdivision (b) of Article III of said compact was intended for and should go to the State of Arizona to compensate for the waters of the Gila River and its tributaries being included within the definition of the Colorado River System and the allocations of said compact, and that said one million acre-feet was to be used exclusively by and for the State of Arizona, that being the approximate amount of water then in use within the State of Arizona from the Gila River and its tributaries, and it was agreed that in view of the fact that no appropriation or allocation of water had otherwise been made by said compact directly to any State, the one million acre-feet for the State of Arizona should be included in said compact by an allocation for the Lower Basin. And it was further agreed that a supplemental compact between the States, California, Nevada and Arizona should be adopted and that such supplemental compact should so provide.

“The Arizona delegation stated that if it were agreed by all the representatives of the several States and of the United States that said million acre-feet should be for the exclusive benefit of the State of Arizona to provide compensation to Arizona on account of the inclusion of the waters of the Gila River and its tributaries in said compact, they would accept said compact, otherwise they would refuse to accept said compact. It was thereupon agreed by all representatives of all the States and of the United States, participating in said negotiations and conferences, that the waters apportioned by Article III, (b), of said compact were for the sole and exclusive use and benefit of the State of Arizona, and it was further agreed that a supplemental compact between the States of California, Nevada and Arizona should be adopted and that such supplemental compact should so provide:

Thereupon said compact was signed by the representatives of the several States and of the United States."

Third. In this suit Arizona asserts rights under the Boulder Canyon Project Act of 1928, not under the Colorado River Compact, which she has refused to ratify. That act approved the Colorado River Compact subject to certain limitations and conditions, the approval to become effective upon the ratification of the compact, as so modified, by the Legislatures of California and at least five of the six other states. It was so ratified. Arizona claims that section 4 (a) of that act imposing limitations on the use of water by California was intended for her benefit; that section 4 (a) embodies by reference article III (b), among others, of the compact for the purpose of defining the limitation, and that the proper interpretation of article III (b) will be, therefore, essential to a determination of Arizona's rights under the statute; that, read in the light of other sections of the compact, article III (b) is ambiguous; and that the testimony sought to be perpetuated will be material and admissible in removing the ambiguity. The elaborate argument in support of these contentions appears to be, in substance, as follows:

1. Colorado River Compact apportions the water of the Colorado River System between the upper and the lower basin. By article II it defines the terms used:

"(a) The term 'Colorado River system' means that portion of the Colorado River and its tributaries within the United States of America."

"(b) The term 'Colorado River Basin' means all of the drainage area of the Colorado River system and all other territory within the United States of America to which the waters of the Colorado River system shall be beneficially applied."

"(g) The term 'Lower Basin' means those parts of the States of Arizona, California, Nevada, New Mexico and Utah within and from which waters naturally drain into the Colorado River system below Lee Ferry and also all parts of said States located without the drainage area of the Colorado River system which are now or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry."

By article III the apportionment is made:

"(a) There is hereby apportioned from the Colorado River system in perpetuity to the upper basin and to the lower basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist."

"(b) In addition to the apportionment in Paragraph (a), the lower basin is hereby given the right to increase its beneficial consumptive use of such waters by 1,000,000 acre-feet per annum."

"(d) The States of the upper division [Colorado, New Mexico, Utah, and Wyoming] will not cause the flow of the river at Lee Ferry

to be depleted below an aggregate of 75,000,000 acre-feet for any period of 10 consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact."

Article III does not in terms apportion as between the upper and the lower basin the surplus waters in excess of the amounts specifically allocated. But it recognizes in paragraph (c) that there may be "surplus" waters in the river, applicable to the lower basin.⁷

2. The Colorado River Compact does not purport to apportion between the states of the lower basin the share of each in the waters of the Colorado River System; but Boulder Canyon Project Act makes some provision for such apportionment. By section 4 (a) it provides that:

"California, by act of its legislature, shall agree irrevocably and unconditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as an express covenant and in consideration of the passage of this chapter, that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the State of California, including all uses under contracts made under the provisions of this chapter and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact."

And that section authorizes Arizona, California, and Nevada to enter into an agreement which, among other things, shall provide:

"(1) That of the 7,500,000 acre-feet annually apportioned to the lower basin by paragraph (a) of Article III of the Colorado River compact, there shall be apportioned to the State of Nevada 300,000 acre-feet and to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity, and (2) that the State of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River compact, and (3) that the State of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of said State * * * (7) said agreement to take effect upon the ratification of the Colorado River compact by Arizona, California, and Nevada."

⁷ Paragraph (c) provides: "If, as a matter of international comity, the United States of America, shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River system, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the upper basin and the lower basin, and whenever necessary the States of the upper division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d)."

3. Arizona refused to ratify the Colorado River Compact, and the authority conferred upon Arizona, Nevada, and California by the Boulder Canyon Project Act to enter into an agreement for apportioning the waters has not been acted on. But California bound itself, by the act of its Legislature, March 16, 1929, to the limitation of 4,400,000 acre-feet, plus one-half of the surplus; Arizona claims that the limitation on California's use must have been enacted for the benefit solely of Arizona, since geographically she alone could use waters in the lower basin which California may not use; and that, because it is embodied in a statute, the limitation imposed by Congress on California's use confers rights upon Arizona, although she failed to sign either the principal or the subsidiary compact.

4. In support of the contention that article III (b) of the compact has a bearing on the interpretation of the limitation of section 4 (a) of the act, Arizona points to the fact that, while the Boulder Canyon Project Act makes no mention of the 1,000,000 acre-feet assigned to the lower basin by article III (b) of the compact, section 4 (a) of the act limits California, in terms, to 4,400,000 acre-feet of the waters apportioned to the lower basin under article III (a) of the compact plus one-half of the "surplus waters unapportioned by said compact"; that section 4 (a) declares that such uses by California are "always to be subject to the terms of said compact"; that California claims that, in addition to the waters already mentioned, she is entitled, as one of the parties to the compact, to draw upon the article III (b) waters; and that, acting upon this assumption, the Secretary of the Interior has already contracted with California users for delivery of 5,362,000 acre-feet of water per annum from the main stream of the Colorado river, though this water is not yet being delivered; whereas Arizona contends that by a proper interpretation of article III (b) California is excluded from all the waters thereunder in favor of Arizona.

5. In support of the contention that article III (b) is ambiguous, Arizona points out that, whereas the compact awards to the lower basin, in the aggregate, 8,500,000 acre-feet of water,⁸ article III (d) of the compact shows that only 7,500,000 of this is to come from the main stream of the Colorado river, since that section provides:

"The States of the upper division will not cause the flow of the River at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of 10 consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact."

It argues that the 75,000,000 was doubtless arrived at through multiplying by ten the 7,500,000 acre-feet per annum apportioned to the lower basin under article III (a); that, though the lower basin is

⁸ That is, the 7,500,000 of the article III (a) waters and the 1,000,000 of the article III (b) waters.

entitled to 8,500,000 acre-feet, it can only call on the upper basin to release 7,500,000 acre-feet from the main stream; that the only other waters below Lee Ferry which are available to the lower basin come from tributaries entirely in Arizona; that these waters enter the Colorado river at a point so far south that they could not be used in the United States after they enter the Colorado; and they have in fact been appropriated for use in Arizona; that therefore what has in terms been awarded to the lower basin is in practical effect available only to that part of the lower basin constituted by Arizona.

Fourth. It is clear that the meaning of the compact, considered merely as a contract, can never be material in the contemplated litigation, since Arizona refused to ratify the compact. Arizona rests her rights wholly upon the acts of Congress and of California. Arizona claims that California's construction of section 4 (a) of the statute would allow her water which under the compact has been assigned to Arizona, and that a conflict is thus raised between the statute and the compact which the suggested testimony is competent to resolve. But the resolution of this alleged conflict can never be material to any case based on the compact considered as contract, since Arizona neither has nor claims any contractual right.

Fifth. Nor does Arizona show that article III (b) of the compact is relevant to an interpretation of section 4 (a) of the Boulder Canyon Project Act upon which she bases her claim of right. It may be true that the Boulder Canyon Project Act leaves in doubt the apportionment among the states of the lower basin of the waters to which the lower basin is entitled under article III (b). But the act does not purport to apportion among the states of the lower basin the waters to which the lower basin is entitled under the compact. The act merely places limits on California's use of waters under article III (a) and of surplus waters; and it is "such" uses which are "subject to the terms of said compact."

There can be no claim that article III (b) is relevant in defining surplus waters under section 4 (a) of the act; for both Arizona and California apparently consider the waters under article III (b) as apportioned.⁹ It is true that Arizona alleges (not in the bill however but in her brief) that she "hopes to be able to show in the case hereafter to be brought" by evidence of Congressional Committee hearings and other legislative history that the failure in the statute to apportion the 1,000,000 acre-feet of waters was due to an understanding by Congress that article III (b) of the compact had already assigned these waters to Arizona, and that the limitation on California was passed in the light of this understanding. This hope, if fulfilled,

⁹ The Secretary of the Interior in his brief seems to be of the opinion that waters under Article III (b) might be surplus waters under section 4 (a) of the act.

would not make article III (b) relevant. The allegation is, not that Congress incorporated article III (b) into the act; it is that Congress understood that article III (b) had allotted all the waters therein to Arizona.

Sixth. The considerations to which Arizona calls attention do not show that there is any ambiguity in article III (b) of the compact. Doubtless the anticipated physical sources of the waters which combine to make the total of 8,500,000 acre-feet are as Arizona contends, but neither article III (a) nor (b) deal with the waters on the basis of their source. Paragraph (a) apportions waters "from the Colorado River system," i. e., the Colorado and its tributaries, and (b) permits an additional use "of such waters." The compact makes an apportionment only between the upper and lower basin; the apportionment among the states in each basin being left to later agreement. Arizona is one of the states of the lower basin, and any waters useful to her are by that fact useful to the lower basin. But the fact that they are solely useful to Arizona, or the fact that they have been appropriated by her, does not contradict the intent clearly expressed in paragraph (b) (nor the rational character thereof) to apportion the 1,000,000 acre-feet to the states of the lower basin and not specifically to Arizona alone. It may be that, in apportioning among the states the 8,500,000 acre-feet allotted to the lower basin, Arizona's share of waters from the main stream will be affected by the fact that certain of the waters assigned to the lower basin can be used only by her; but that is a matter entirely outside the scope of the compact.

The provision of article III (b), like that of article III (a), is entirely referable to the main intent of the compact, which was to apportion the waters as between the upper and lower basins. The effect of article III (b) (at least in the event that the lower basin puts the 8,500,000 acre-feet of water to beneficial uses) is to preclude any claim by the upper basin that any part of the 7,500,000 acre-feet released at Lee Ferry to the lower basin may be considered as "surplus" because of Arizona waters which are available to the lower basin alone. Congress apparently expected that a complete apportionment of the waters among the states of the lower basin would be made by the subcompact which it authorized Arizona, California, and Nevada to make. If Arizona's rights are in doubt, it is, in large part, because she has not entered into the Colorado River Compact or into the suggested subcompact.

Seventh. Even if the construction to be given paragraph (b) of the compact were relevant to the interpretation of any provision in the Boulder Canyon Project Act, and such provision were ambiguous, the evidence sought to be perpetuated is not of a character which would be competent to prove that Congress intended by section 4 (a)

of the 1928 act to exclude California entirely from the waters allotted by article III (b) to the states of the lower basin and to reserve all of those waters to Arizona. The evidence sought to be perpetuated is not documentary. It is testimony as to what divers persons said six years earlier while negotiating a compact with a view to preparing the proposal for submission to the Legislatures of the seven states and to Congress for approval—a proposal which Arizona has not ratified and which the six other states and Congress did ratify, as later modified, by statutes enacted in 1928 and 1929. The Boulder Canyon Project Act rests, not upon what was thought or said in 1922 by negotiators of the compact, but upon its ratification by the six states.

[4, 5] It has often been said that, when the meaning of a treaty is not clear, recourse may be had to the negotiations, preparatory works, and diplomatic correspondence of the contracting parties to establish its meaning, *Nielsen v. Johnson*, 279 U. S. 47, 52, 49 S. Ct. 223, 73 L. Ed. 607. Compare *United States v. Texas*, 162 U. S. 1, 16 S. Ct. 725, 40 L. Ed. 867; *Terrace v. Thompson*, 263 U. S. 197, 223, 44 S. Ct. 15, 68 L. Ed. 255; *Cook v. United States*, 288 U. S. 102, 53 S. Ct. 305, 77 L. Ed. 641. See Yü, *The Interpretation of Treaties*, pp. 138, 192; Chang, *The Interpretation of Treaties*, p. 59 et seq. But that rule has no application to oral statements made by those engaged in negotiating the treaty which were not embodied in any writing and were not communicated to the government of the negotiator or to its ratifying body. There is no allegation that the alleged agreement between the negotiators made in 1922 was called to the attention of Congress in 1928 when enacting the act; nor that it was called to the attention of the Legislatures of the several states.

As Arizona has failed to show that the testimony which she seeks to have perpetuated could conceivably be material or competent evidence bearing upon the construction to be given article III, paragraph (b), in any action which may hereafter be brought, the motion for leave to file the bill should be denied. We have no occasion to determine whether leave to file the bill should be denied also because the United States was not made a party and has not consented to be sued.

Leave to file bill denied.

Appendix 1303

**SUPREME COURT LITIGATION:
UNITED STATES v. ARIZONA (295 U. S. 174 (1935))**

SUPREME COURT OF THE UNITED STATES

NO. 18. ORIGINAL.—OCTOBER TERM, 1934

UNITED STATES OF AMERICA v. STATE OF ARIZONA

[April 29, 1935]

Mr. Justice BUTLER delivered the opinion of the Court.

September 10, 1934, the United States, acting through Harold L. Ickes, Secretary of the Interior and Federal Emergency Administrator of Public Works, caused to be commenced the construction of the Parker Dam in the main stream of the Colorado River, the thread of which for a distance of about 237 miles is the boundary between Arizona and California. The site is 150 miles below the Boulder Dam, half a mile below the place where the Williams River flows into the Colorado, and 10 miles north of the Colorado River Indian Reservation. Its ends rest on public lands of the United States in Arizona and California. Arizona objects to the construction of the dam, asserts that it may not lawfully be built without her consent, and threatens the use of military force to stop the work. January 14, 1935, the United States filed its bill in equity perpetually to enjoin interference by the State. On plaintiff's motion this court directed defendant to show cause why a restraining order should not issue pending the final determination of the suit. Arizona filed a return consisting of an affidavit of the Governor setting forth the grounds on which the State claims the right to prevent the construction of the dam in the part of the river bed that is easterly of the thread of the stream, a motion to dismiss the bill, and a supporting brief. We heard counsel on plaintiff's application for a temporary injunction and defendant's motion to dismiss.

We come first to the question whether the complaint alleges facts sufficient to warrant an injunction against the State. The allegations will be better understood after brief reference to the Colorado River Compact¹ and the Boulder Canyon Project Act, 45 Stat. 1057.

The Compact was made by California, Colorado, Nevada, New Mexico, Utah, and Wyoming. Arizona was not a party. It was made to provide an equitable apportionment of the waters of the

¹ Printed in California Statutes, 1929, c. 1, § 1.

Colorado River system among the interested States, establish relative importance of different beneficial uses and secure the development of the Colorado River basin, the storage of its waters and protection against floods. After apportionment between defined basins lying above and below Lee Ferry and a declaration that the Colorado has ceased to be navigable for commerce and that the use of its waters for purposes of navigation should be subservient to uses for domestic, agricultural and power purposes, the Compact authorizes the waters of the system to be impounded and used for the generation of power and declares that use subservient to uses for agricultural and domestic purposes. It was approved by § 13 (a) of the Boulder Canyon Project Act and, by presidential proclamation, it took effect June 25, 1929. 46 Stat. 3000. The Act authorizes the Secretary of the Interior to construct a dam and incidental works in the Colorado at Boulder Canyon adequate to create a reservoir having a capacity of not less than 20,000,000 acre feet "and a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam, or other suitable diversion dam, which the Secretary . . . is hereby authorized to construct if deemed necessary or advisable by him upon engineering or economic considerations, with the Imperial and Coachella Valleys in California." § 1.² In a suit in this Court against the Secretary of the Interior and the States which were parties, Arizona unsuccessfully sought to have ratification of the Compact decreed to be unconstitutional and to enjoin construction of the Boulder Dam and the doing of anything under color of that Act. *Arizona v. California*, 283 U. S. 423.

The bill alleges that February 10, 1933, the United States, acting through the Secretary of the Interior, entered into a contract with the Metropolitan Water District of Southern California. The District agrees to pay to the United States the entire cost of the dam, assumed not to exceed \$13,000,000. By the use of this money the United States agrees that, under the Reclamation Act, June 17, 1902, 32 Stat. 388, and supplemental Acts, particularly those of April 21, 1904, 33 Stat. 224, March 4, 1921, 41 Stat. 1404, and December 21, 1928 (The Boulder Canyon Project Act)³ it will construct the Parker Dam.

² By §§ 12 and 14 of the Boulder Canyon Project Act, the Reclamation Law is defined to mean the Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof and supplemental thereto, including the Boulder Canyon Project Act.

³ Other amendatory and supplemental acts are: Acts of February 25, 1905, 33 Stat. 814; March 3, 1905, 33 Stat. 1032; April 16, 1906, 34 Stat. 116; June 12, 1906, 34 Stat. 259; June 27, 1906, 34 Stat. 519; June 11, 1910, 36 Stat. 465; June 25, 1910, 36 Stat. 835; February 21, 1911, 36 Stat. 925; February 24, 1911, 36 Stat. 930; August 13, 1914, 38 Stat. 686; June 12, 1917, 40 Stat. 149; October 2, 1917, § 10, 40 Stat. 300; February 25, 1920, § 35, 41 Stat. 450; May 20, 1920, 41 Stat. 605; June 10, 1920, § 17, 41 Stat. 1072; December 5, 1924, § 4, 43 Stat. 701; June 6, 1930, 46 Stat. 522.

The District is to have one-half the power privilege and the right to divert specified quantities of water. The United States is to have the right to the rest of the power, to divert water, to transmit power at cost over the District's lines from Boulder to Parker, and, by means of canals, to connect Parker Dam with lands in the Colorado River Indian Reservation in Arizona and with other lands in that State and in California.

Parker Dam will intercept waters discharged at Boulder Dam and the inflow of tributaries of the Colorado below that dam; raise the river level 72 feet and create a reservoir about 20 miles long, having capacity of 717,000 acre feet, and permit generation of approximately 85,000 horsepower of electricity. Operated with Boulder Dam, it will "reregulate and equate, in aid of navigation and river regulation," the waters discharged at Boulder Dam for flood control, power generation and irrigation; allow, for generation of power, the discharge at Boulder Dam of water which otherwise would have to be retained there in storage and also conserve the waters there discharged.

The bill also alleges that heavy flash floods of the Williams River are a menace to the Colorado River Indian Reservation, to United States public lands and to navigation below Parker. The dam is designed to promote reclamation of the reservation lands and of public lands of the United States. The power privilege reserved by the United States is for the purpose of pumping water for irrigation of these lands.

To disclose grounds on which the United States claims the right to construct the dam, the bill sets out that at various times Congress has made appropriations amounting in all to more than \$1,359,000 for construction of irrigation and diversion works for the reservation; that the above mentioned Act of April 21, 1904, authorized the Secretary of the Interior to divert the waters of the Colorado and to reclaim, utilize and dispose of land in the reservation which might be made irrigable by works constructed under the Reclamation Act, and that the Boulder Canyon Project Act appropriated moneys for surveys of

⁴ Act of March 2, 1867, 14 Stat. 514, appropriated \$50,000 "For expense of collecting and locating the Colorado River Indians in Arizona, on a reservation set apart for them by" § 1, Act of March 3, 1865, 13 Stat. 559, "including the expense of constructing a canal for irrigating said reservation." For completing the canal, \$50,000 was appropriated by the Act of July 27, 1868, 15 Stat. 222, and \$20,000 by the Act of May 29, 1872, 17 Stat. 188.

Section 3, Act of April 4, 1910, 36 Stat. 273, appropriated \$50,000 "For the construction of a pumping plant to be used for irrigation purposes on the Colorado River Reservation, together with the necessary canals and laterals, for the utilization of water in connection therewith, for the purpose of securing an appropriation of water for the irrigation of approximately one hundred and fifty thousand acres of land . . . to be reimbursed from the sale of the surplus lands of the reservation." To complete and maintain the work commenced by the 1910 Act, Congress has since appropriated \$888,710.

the Parker-Gila reclamation project, which, it is said, embraces the Indian reservation and certain public lands of the United States. And it is asserted that the Parker Dam project has been included by the Administrator in the comprehensive program of public works authorized by § 202, National Industrial Recovery Act, 48 Stat. 201; that, pursuant to that Act, the Chief of Engineers of the United States Army has recommended the construction and his recommendation has received the approval of the Secretary of War.

1. The bill alleges that the stretch of the Colorado between Arizona and California is navigable, and the motion to dismiss is dealt with on that basis. Arizona owns the part of the river bed that is east of the thread of the stream. *New Jersey v. Delaware*, 291 U. S. 361, 379 *et seq.* Her jurisdiction in respect of the appropriation, use and distribution of an equitable share of the waters flowing therein is unaffected by the Compact or federal reclamation law. But the title of the State is held subject to the power granted to Congress by the commerce clause, *United States v. Holt State Bank*, 270 U. S. 49, 54-55, and under that clause Congress has power to cause to be built a dam across the river in aid of navigation. The Boulder Canyon Project Act is an example of the exertion of that power. *Arizona v. California*, *supra*, 451, 455-457. But no Act of Congress specifically authorizes the construction of the Parker Dam. Subject to an exception with which we have no concern, § 9 of the Act of March 3, 1899, forbids the construction of any bridge, dam, dike or causeway over or in any port, roadstead, haven, harbor, canal, navigable river or other navigable water of the United States until the consent of Congress shall have been obtained and until the plans shall have been submitted to and approved by the Chief of Engineers and by the Secretary of War. 33 U. S. C., § 401. And § 12 makes violations of § 9 punishable by fine or imprisonment or both and provides for the removal of unauthorized structures. 33 U. S. C., § 406. These provisions unmistakably disclose definite intention on the part of Congress effectively to safeguard rivers and other navigable waters against the unauthorized erection therein of dams or other structures for any purpose whatsoever. The plaintiff maintains that the restrictions so imposed apply only to work undertaken by private parties. But no such intention is expressed, and we are of opinion that none is implied. The measures adopted for the enforcement of the prescribed rule are in general terms and purport to be applicable to all. No valid reason has been or can be suggested why they should apply to private persons and not to federal and state officers. There is no presumption that regulatory and disciplinary measures do not extend to such officers. Taken at face value the language indicates the purpose of Congress to govern conduct of its own officers and employees as well as that of others. *Donnelley v. United States*, 276 U. S. 505, 516. If still

in force, § 9 unquestionably makes "consent of Congress" essential to the valid authorization of the Parker Dam. There has been no express repeal of that section and, as will presently appear, it is not inconsistent with subsequent legislation on which plaintiff relies.

2. Plaintiff, unable to cite any statute specifically authorizing the Secretary to construct the dam turns to § 25 of the Act of April 21, 1904, 33 Stat. 224. That section is a part of the reclamation laws which are enacted—not under the commerce clause, Art. I, § 8, cl. 3, but in the exertion of power granted by Art. IV, § 3, cl. 2: "The Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States." *United States v. Hanson*, 167 Fed. 881, 883. *Kansas v. Colorado*, 206 U. S. 46, 88, *et seq.* The part of § 25 relied on follows: "That in carrying out any irrigation enterprise which may be undertaken under the provisions of the reclamation Act . . . and which may make possible and provide for, in connection with the reclamation of other lands, the reclamation of all or any portion of the irrigable lands on the Yuma and Colorado River Indian Reservations in California and Arizona, *the Secretary of the Interior is hereby authorized to divert the waters of the Colorado River* and to reclaim, utilize, and dispose of any lands in said reservations which may be irrigable by such works in like manner as though the same were a part of the public domain." The immediate question is whether the italicized clause can reasonably be construed as adequate to carry the burden that plaintiff would have us lay upon it. The purpose was not to prescribe or regulate the means to be employed to divert water from the Colorado but to extend the reclamation law to the Indian reservations named. It was merely to empower the Secretary, if the circumstances stated should arise, to reclaim lands in these reservations by use of water to be taken from that river. The authority granted was no more than permission to appropriate them for the purpose specified. No dam is shown to have been necessary. Water is frequently taken from streams for the purposes of irrigation without putting dams across them. Failure specifically to authorize a dam or even approximately to fix location or to require use calculated to aid navigation makes strongly against the plaintiff.

In support of the construction for which it contends, plaintiff asserts that it was under this Act that the Secretary of the Interior built the Laguna Dam across the Colorado. But it does not appear that either riparian State objected or that the validity of his authority has ever been drawn in question. Congress has made appropriations for the benefit of the project of which it is a part⁵ and so recognized

⁵ See e. g., Acts of July 1, 1916, 39 Stat. 304; June 12, 1917, 40 Stat. 148, and July 1, 1918, 40 Stat. 674, making appropriations for the Yuma Project, Arizona-California, which includes the Laguna Dam. See e. g., Reclamation Service Report 13, p. 73, *et seq.*; Report 15, p. 68, *et seq.*

and approved the building of the dam. *Wisconsin v. Duluth*, 96 U. S. 379, 386. There has been cited no other instance of the construction, without the consent of the Congress, of a dam across a navigable interstate river. Indeed, it is not certain that that part of the Colorado was then deemed to be navigable.⁶ We find no merit in the contention that § 25 of the Act of April 21, 1904, is the "consent of Congress" required by § 9 of the Act of March 3, 1899. And plainly without force is the suggestion that by making appropriations for irrigation of lands in Indian reservations Congress authorized this dam.

3. The clause of § 1 of the Boulder Canyon Project Act empowering the Secretary to construct a main canal connecting the Laguna Dam "or other suitable diversion dam" with the Imperial and Coachella Valleys does not authorize the building or in any respect apply to the proposed Parker Dam. The latter is about 70 miles upstream from the Laguna and the canal proposed to be built to bring water to the valleys named.⁷ The contract alleged to have been made by the United States and the Metropolitan Water District, a copy of which is attached to plaintiff's brief, shows that the purpose immediately to be served by the Parker Dam is to enable the United States in fulfillment of earlier contracts to deliver waters at that place into the aqueduct of the District. And while that instrument specifies other uses to which the United States may put the waters by means of the dam, transmission by canal to either of these valleys is not mentioned. Indeed, the plaintiff does not, and it could not reasonably, claim that § 1 of the Boulder Canyon Project Act authorizes the construction of this dam. Nor does it make any contention in respect of the allegation of the bill that § 11 of the Act authorizes surveys of the Parker-Gila reclamation project.

4. Parker Dam was not approved by the President as required by § 4 of the Act of June 25, 1910, 43 U. S. C., § 413. That section declares that no irrigation project contemplated by the Reclamation Act "shall be begun unless and until the same shall have been recommended by the Secretary of the Interior and approved by the direct order of the President of the United States." The project in question rightly may be deemed to have been begun on the date, February 10, 1933, of the contract made by the United States and the Water District for the construction of the dam. There is no allegation that any project including the dam was ever recommended, submitted to or in any manner approved by the President. But plaintiff maintains that the approval required in the section has been given through executive action under the National Industrial Recovery

⁶ See Art. IV (a), Colorado River Compact.

⁷ Wilbur and Ely, *The Hoover Dam Contracts*, United States Department of the Interior, 1933, pp. II, 71, 325.

Act. It relies on §§ 201 a, 202 and 203 of the Act and Executive Order No. 6252. The first of these authorizes the President to delegate any of his powers under Title II of the Act to such agents as he may designate. Section 202 provides that the Administrator under the direction of the President shall prepare a comprehensive program of public works "which shall include . . . construction of river and harbor improvements . . . *Provided*, That no river or harbor improvements shall be carried out unless they shall have heretofore or hereafter been adopted by the Congress or are recommended by the Chief of Engineers . . ." Section 203 authorizes the President "through the Administrator . . . to construct . . . any public-works project included in the program prepared pursuant to section 202." The Executive Order delegates authority to the Administrator "to construct . . . any public-works project included in the program." The contract here involved was made more than four months before the passage of that Act. Plaintiff asserts that the project was included in the comprehensive program, that the Administrator commenced construction about September 10, 1934, and that on November 10 following, Arizona interfered forcibly to prevent plaintiff from doing the work. The alleged recommendation by the Chief of Engineers and approval by the Secretary of War were not made until January 5, 1935,⁸ nine days before plaintiff filed its bill. These facts do not constitute approval "by direct order of the President" as required by § 4. Plaintiff does not allege or claim that the President has directly authorized the dam or specifically empowered the Administrator to include it in the comprehensive program. We find nothing in the Recovery Act that reasonably may be held to repeal the requirement of that section. It follows that the construction of the dam has not been authorized as required by the Reclamation Law.

5. Plaintiff's contention that the dam is being built under authority of the Recovery Act is without force.

The chronology just given, when taken in connection with the citations in the contract of the Acts relied on, shows the claim to be an afterthought born of the controversy disclosed by the complaint and about to be here submitted. Section 25 of the Act of April 21, 1904, does not authorize this dam. Plaintiff does not assert that it was otherwise adopted by Congress. It therefore remains only to consider whether the dam was recommended by the Chief of Engineers within the meaning of the proviso of § 202. When the Recovery Act

⁸ The complaint does not show the date of the alleged inclusion of the dam in the comprehensive program of public works authorized by § 202 of the Recovery Act. It also fails to give the date of the recommendation of the Chief of Engineers and approval by the Secretary of War. A copy of the certificate attached to the complaint furnishes that date, January 5, 1935.

was passed, the phrases "adopted by the Congress" and "recommended by the Chief of Engineers," when used in Acts of Congress relating to river and harbor improvements, had well-understood and definite technical meanings. The statutes, at least in the 40 years next preceding the passage of the Recovery Act, disclose: It has been the general, if not indeed the uniform, practice of Congress specifically to authorize all river and harbor improvements carried out by the United States,⁹ and to base its action upon the recommendation of the Chief of Engineers.¹⁰ That officer makes such recommendation only after preliminary examinations followed by surveys.¹¹ Congress expressly

⁹ The Rivers and Harbors Acts prior to that of September 22, 1922, authorized surveys and improvements and made appropriations. A typical provision was: "That the following sums . . . are hereby appropriated . . . to be expended under the direction of the Secretary of War and the supervision of the Chief of Engineers, for the construction, completion, repair, and preservation of the public works hereinafter named. . . ." Act of August 8, 1917, 40 Stat. 250. The Act of September 22, 1922, omitted appropriations and adopted specified improvements: "That the following works of improvement are hereby adopted and authorized, to be prosecuted under the direction of the Secretary of War and supervision of the Chief of Engineers in accordance with the plans recommended in the reports hereinafter designated. . . ." 42 Stat. 1038. The same language is used in § 1 of the Acts of March 3, 1925, 43 Stat. 1186; January 21, 1927, 44 Stat. 1010, and July 3, 1930, 46 Stat. 918. See also 79 Cong. Rec., p. 5454.

¹⁰ ". . . The Committee on Rivers and Harbors has pursued an invariable rule of requiring all rivers and harbors projects to have the approval and recommendation of the Corps and Chief of Engineers before we considered them eligible for consideration." Remarks of chairman of that committee in the Committee of the Whole House considering bill for river and harbor improvements, 79 Cong. Rec., p. 5441, see also pp. 5460, 5465, 5466. Cf. § 9, Act of September 22, 1922 (33 U. S. C., § 568): "No project shall be considered by any committee of Congress with a view to its adoption, except with a view to a survey, if five years have elapsed since a report upon a survey of such project has been submitted to Congress pursuant to law."

¹¹ To secure greater uniformity in the recommendations and reports required of Chief of Engineers (See H. Rep. No. 795, 57th Cong., 1st session, p. 3), Congress created in his office a Board of Engineers for Rivers and Harbors, § 3, Act of June 13, 1902, 32 Stat. 372. Subsequent legislation in respect of this Board, material here, is found in § 3, Act of June 25, 1910, 36 Stat. 668; §§ 3 and 4, Act of March 4, 1913, 37 Stat. 825; § 2, June 5, 1920, 41 Stat. 1010; § 9, September 22, 1922, 42 Stat. 1043. 33 U. S. C., §§ 541, 542, 545, 546, 547, 568.

Preliminary examinations are first made, unless Congress expressly directs a survey and estimate, and if, upon such examination, the improvement is not thought advisable, no further action may be taken unless Congress so directs. 33 U. S. C., § 545. The subsequent detailed survey report is made by the district engineer, it is reviewed by the division engineer, by the Board of Engineers for Rivers and Harbors and finally by the Chief of Engineers who submits to Congress a report containing information of a character specified by the above statutes, together with his recommendation. As shown in footnote 10, a congressional committee may not consider a project with a view to its adoption if five years have elapsed since submission of a report on a survey. See 79 Cong. Rec., p. 5439, *et seq.* 1922 Report of Chief of Engineers, pp. 99, 100.

directs the making of these examinations and surveys¹² and prohibits any which it has not authorized.¹³

"As a general rule, where the legislation dealing with a particular subject consists of a system of related general provisions indicative of a settled policy, new enactments of a fragmentary nature on that subject are to be taken as intended to fit into the existing system and to be carried into effect conformably to it, excepting as a different purpose is clearly shown." *United States v. Jefferson Electric Co.*, 291 U. S. 386, 396. In the light of that rule it is clear the general language of the Recovery Act on which plaintiff relies does not evidence intention on the part of Congress to change its well established policy. In respect of the required recommendation by the Chief of Engineers there is no inconsistency between the proviso and the statutes upon which rests the practice of his office. The Recovery Act may, and therefore it must, be read in harmony with the purposes evidenced by the provisions of the Rivers and Harbors Acts to which reference has been made. When so read the proviso requires that the recommendation of the Chief of Engineers be based on examinations, surveys and reports made in pursuance of these Acts and submitted to the Congress for its consideration when determining whether the project should be undertaken. The only change effected by the Recovery Act is that the improvement may be made if either "adopted by the Congress" or "recommended by the Chief of Engineers" whereas the prior practice required not only recommendation by the Chief of Engineers but also adoption by Congress; that is, the Recovery Act amounts merely to the adoption of projects that have been heretofore or hereafter may be recommended to Congress by the Chief of Engineers under the established practice.¹⁴

¹² Since September 22, 1922, the Acts authorizing preliminary examinations and surveys employ the following language: "The Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys to be made at the following-named localities. . . ." § 12, 42 Stat. 1043.

¹³ "That no preliminary examination, survey, project, or estimate for new works other than those designated in this or some prior Act or joint resolution shall be made." § 12, Act of September 22, 1922, 42 Stat. 1043. Typical language in the Acts appropriating for rivers and harbors is: "That no funds shall be expended for any preliminary examination, survey, project, or estimate not authorized by law." It is found, for example, in the Act of April 26, 1934, 48 Stat. 639-640, making appropriations for the fiscal year ending June 30, 1935.

¹⁴ When the Recovery Act was enacted, Congress had before it the report of the Chief of Engineers for the fiscal year ended June 30, 1932. This report disclosed (p. 3) that 954 projects authorized by Congress were in force, that active operations were in progress upon 361 (p. 4), that reports on 242 preliminary examinations and surveys had been transmitted to Congress during the past fiscal year (p. 6), and that the Chief of Engineers had under consideration 302 investigations authorized by river and harbor and flood control acts. (p. 22.)

In accordance with definite policy long pursued by it, the Congress has committed to the Secretary of War and Chief of Engineers all investigations, surveys and work in aid of navigation. The Recovery Act discloses no intention to require that the Chief of Engineers' recommendations in respect of proposed improvements shall be made to the Administrator instead of to the Congress. The provisions of the Act brought forward by plaintiff make no such change. Plainly they are not sufficient to empower the Administrator to initiate preliminary examinations and surveys or to determine whether the Parker Dam or any work in aid of navigation shall be undertaken.

It is not shown that Congress ever directed a preliminary examination or survey by the Chief of Engineers of any project that includes this dam. This is a condition precedent to the recommendation required by the proviso. Failure to allege compliance warrants the conclusion that the recommendation relied upon lacks the support of examination and survey by army officers and review by the board of engineer officers required by law.

6. As the complaint fails to show that the construction of the dam is authorized, there is no ground for the granting of an injunction against the State, and therefore the complaint must be

Dismissed.

Appendix 1304

SUPREME COURT LITIGATION:

ARIZONA v. CALIFORNIA ET AL. (298 U. S. 558 (1936))

SUPREME COURT OF THE UNITED STATES

NO. — ORIGINAL—OCTOBER TERM, 1935

STATE OF ARIZONA, COMPLAINANT, *v.* STATE OF CALIFORNIA, STATE
OF COLORADO, STATE OF NEVADA, STATE OF NEW MEXICO, STATE
OF UTAH AND STATE OF WYOMING

[May 25, 1936]

Mr. Justice STONE delivered the opinion of the Court.

This case arises upon the petition of the State of Arizona for leave to file in this Court her bill of complaint against the several states named as defendants and upon their returns to the order of this Court, 297 U. S. 699, 988, directing them to show cause why the prayer of the petition should not be granted. The returns raise numerous objections to the sufficiency of the proposed bill of complaint, only two of which we find it necessary to consider. One is that the proposed bill fails to present any justiciable case or controversy within the jurisdiction of the Court. The other is that the United States, which is not named as a defendant and has not consented to be sued, is an indispensable party to any decree granting the relief prayed by the bill.

The relief sought is: (1) That the quantum of Arizona's equitable share of the water flowing in the Colorado River, subject to diversion and use, be fixed by this Court, and that the petitioner's title thereto be quieted against adverse claims of the defendant states. (2) That the State of California be barred from having or claiming any right to divert and use more than an equitable share of the water flowing in the river, to be determined by the Court, and not to exceed the limitation imposed upon California's use of such water by the Boulder Canyon Project Act, 45 Stat. 1057, and the Act of the California legislature of March 4, 1929, Ch. 16. Stats. of Calif., 1929, p. 38. (3) That it be decreed that the diversion and use by any of the defendant states of any part of the equitable share of the water decreed to Arizona pending its diversion and use by her shall not constitute a prior appropriation or confer upon the appropriating

state any right in the water superior to that of Arizona. (4) That any right of the Republic of Mexico to an equitable share in any increased flow of water in the Colorado River made available by works being constructed by or for California, shall be supplied from California's equitable share of the water, and that neither petitioner nor the defendant states other than California shall be required to contribute to it from their equitable shares as adjudicated by the Court.

The proposed bill thus, in substance, seeks a judicial apportionment among the states in the Colorado River basin of the unappropriated water of the river, with the limitation that the share of California shall not exceed the amount to which she is limited by the Boulder Canyon Project Act and by her statute, and with the proviso that any increase in the flow of water to which the Republic of Mexico may be entitled shall be supplied from the amount apportioned to California. Our consideration of the case is restricted to an examination of the facts alleged in the proposed bill of complaint and of those of which we may take judicial notice.

The Colorado River, a navigable stream, see *Arizona v. California*, 283 U. S. 423, having a total length of 1,293 miles, rises in Colorado and flows through that state 245 miles, then through Utah 285 miles, then through Arizona 292 miles, then on the boundary between Arizona and Nevada 145 miles, then on the boundary between Arizona and California 235 miles, then on the boundary between Arizona and Mexico 16 miles, and then through the Republic of Mexico to the Gulf of California 75 miles. For 688 miles, more than half its length, the river flows in Arizona or upon her boundary.

Two dams have been built across the Colorado River by the Secretary of the Interior, acting under authority of acts of Congress. One, Boulder Dam, 378 miles below the intersection of the river with the boundary between Arizona and Utah, creates Boulder Reservoir, extending along the bed of the river 115 miles above the dam. The other, Laguna Dam, is located 18 miles above the point where the Colorado River becomes the boundary between Arizona and Mexico. Two other dams are projected and in course of construction under contracts entered into by the Secretary of the Interior, pursuant to acts of Congress. Boulder Canyon Project Act, § 1; United States Session Laws, 1935, p. 1039; see *United States v. Arizona*, 295 U. S. 174. Both are in that part of the river which flows between Arizona and California. One, Parker Dam, is approximately 150 miles south of Boulder Dam, and the other, Imperial Dam, is 4½ miles above Laguna Dam.

The average annual undepleted flow of the Colorado River in Arizona, at Imperial Dam, is approximately 16,840,000 acre feet.¹ Of the total undepleted flow approximately 6,100,000 acre feet per annum have been appropriated and put to beneficial use in the United States and the Mexican Republic.² After deducting all existing appropriations there remains in the river subject to future appropriation a net average annual flow of at least 9,720,000 acre feet.³

About 2,027,000 acres of land are under irrigation by water diverted from the Colorado River and its tributaries other than the Gila, of which 72,120 acres are in Arizona.⁴ There are more than 2,000,000 acres of land in Arizona that are not irrigated, but are susceptible of economic irrigation from the unappropriated water of the Colorado River and its tributaries other than the Gila, and which cannot be irrigated from any other source. There are 5,000,000 additional acres of land in Arizona "potentially susceptible of economic irrigation" from the waters of the river. There are pending projects to irrigate more than 1,000,000 acres of this unirrigated but irrigable land of which more than 100,000 acres are owned by the State of Arizona. The amount of water required for such irrigation is in excess of 4,000,000 acre feet annually.

¹ At Lees Ferry, twenty-three miles below the point where the river enters Arizona from Utah, the average undepleted annual flow is 16,660,000 acre feet. At Boulder Dam it is 17,720,000 acre feet. At the Imperial Dam it is 16,840,000. Non-diversion river losses and evaporation below Lees Ferry aggregate 1,400,000 acre feet annually and are about offset by the river's gains between Lees Ferry and Boulder Dam.

² Of this amount approximately 2,500,000 acre feet are diverted annually above Lees Ferry, and are used and consumed in Utah, New Mexico, Colorado, and Wyoming, and 3,600,000 acre feet are diverted annually below Lees Ferry from the river and its tributaries other than the Gila. The average annual diversions taking place below the southern boundary of Utah, stated in acre feet are as follows: Arizona, 585,000; California, 2,475,000; Nevada, 40,000; Mexican Republic 500,000.

³ At Lees Ferry 10,500,000 acre feet, at Boulder Dam 11,100,000 acre feet, at Imperial Dam 9,720,000 acre feet. Allowing for estimated increase in use of the water now appropriated for irrigation of land above Boulder Dam and for diversions by projects now under construction in Colorado, it is estimated that the flow of the Colorado River into and out of the Boulder Dam will, in 1938, average 15,069,000 acre feet per year.

⁴ The acreage under irrigation by water diverted from the Colorado River and its tributaries, other than the Gila, is distributed among the Colorado River basin states as follows: Arizona 72,120; California 464,653; Colorado 856,413; New Mexico 45,937; Nevada 12,308; Utah 347,452; Wyoming 228,699. Approximately 525,000 acres of land in the Gila River basin are irrigated from the waters of that river and its tributaries, of which 520,000 acres are located in Arizona.

By the Colorado River Compact, see *Arizona v. California, supra*, entered into by the defendant states and approved by Congress, but to which Arizona is not a party, the undepleted flow of water of the Colorado River is apportioned between the upper basin and the lower basin of the river valley, the point of division being Lees Ferry, 23 miles below the southern boundary of Utah. To each basin there is apportioned 7,500,000 acre feet per annum and the lower basin has the additional right to increase its "beneficial consumptive use" of the water by 1,000,000 feet per annum.

By the Boulder Canyon Project Act, the Secretary of the Interior was authorized, subject to the terms of the Colorado River Compact, to construct, operate and maintain a dam and incidental works at the present site of Boulder Dam, with an appurtenant hydro-electric plant, and to use and dispose of the water stored above the dam for irrigation and for the development of power. The Act also provided that no authority should be exercised under it until six of the states in the Colorado River basin, including California, should ratify the Compact, and unless the State of California, by act of its Legislature, should agree with the United States, for the benefit of all the states in the river basin, that the aggregate annual use of water from the river by the State of California should not exceed 4,400,000 acre feet annually, plus one-half of any excess of surplus waters unapportioned by the Compact. The Compact was duly ratified by the six defendant states, and the limitation upon the use of the water by California, was duly enacted into law by the California Legislature by Act of March 4, 1929, *supra*. By its provisions the use of the water by California is restricted to 5,484,500 acre feet annually.⁵

The Secretary of the Interior, acting under authority of § 5 of the Boulder Canyon Project Act, has entered into contracts with California corporations for the storage in the Boulder Dam reservoir and the delivery, for use in California,⁶ of 5,362,000 acre-feet of water annually, for a stipulated compensation. The proposed bill of complaint charges that, notwithstanding the limitation upon the use of the water by California, certain California corporations, with the aid of the United States, propose to divert from the river and use con-

⁵ The surplus water of the river in the lower basin, unapportioned by the Compact, is 2,171,000 acre feet, one-half of which, or 1,085,500 acre feet, California is entitled, under the Boulder Canyon Project Act, and her own statute, to add to the 4,400,000 acre feet which they specifically allot to her, making a total allotment of 5,485,500 acre feet annually.

⁶ See the following:

Metropolitan Water District.....	1,100,000 acre-feet
Imperial Valley and others.....	3,850,000 acre-feet
City of San Diego.....	112,000 acre-feet
Palo Verdi.....	300,000 acre-feet
Total.....	5,362,000 acre-feet

sumptively in California an aggregate amount of 14,330,000 acre-feet annually, including that which the Secretary of the Interior has contracted to deliver; or 8,444,500 acre-feet in excess of the amount which California is permitted to take by the Boulder Canyon Project Act and her own statute, and sufficient to use all but about 1,000,000 acre-feet of the unappropriated annual flow of the river.⁷

Arizona asserts that she is damaged by the impending appropriations of water by California by reason of the fact that future reclamation of land in Arizona can be accomplished only by large-scale projects, contemplating the irrigation of large areas to be operated and administered as a single unit, and, because of the great cost of diversion works and large expenditures required to establish such projects, it will be impossible to finance them "unless water for the irrigation of said land can be appropriated and unclouded, undisputed and incontestable rights to the permanent use thereof acquired at or prior to the time of constructing such works."

It is conceded both by the bill of complaint and the returns that all the states in the Colorado River basin except California, and California so far as material to the present case, apply the doctrine of appropriation to the waters of flowing streams in their respective territories. Under this doctrine, diversion and application of water to a beneficial use constitute an appropriation, and entitle the appropriator to a continuing right to use the water, to the extent of the appropriation, but not beyond that reasonably required and actually used. The appropriator first in time is prior in right over others upon the same stream, and the right, when perfected by use, is deemed effective from the time the purpose to make the appropriation is definitely formed and actual work upon the project is begun, or from

⁷ By way of specification of this general statement it is alleged that such corporations have made application to the Division of Water Resources, Department of Public Works of the State of California, for permits to divert and appropriate annually from the river quantities of water aggregating more than 12,670,000 acre-feet, and that the State of California will grant the permits so applied for, upon completion by such corporations of the necessary diversion works. In addition, it is alleged that the Secretary of the Interior, pursuant to § 1 of the Boulder Canyon Project Act, has entered into a contract with the Imperial Irrigation District, a California corporation, in connection with the building of the Imperial Dam for the construction of a main canal known as the "All-American Canal," to connect the dam with the Imperial and Coachella Valleys, which provides for the delivery to the United States, at the Imperial Dam, of 1,460,000 acre-feet per year, to be used for irrigation and power. Approximately 200,000 acre-feet of this amount will be used for the irrigation of lands in the United States Yuma Reclamation Project in Arizona. The remainder will be used for irrigation of the Yuma Indian Reservation in California and for power. An additional 400,000 acre-feet will be used for desilting the canal. The water to be used for desilting and power will be returned to the river at a point where it cannot be recaptured for further use in the United States.

the time statutory requirements of notice of the proposed appropriation are complied with, provided the work is carried to completion and the water is applied to a beneficial use with reasonable diligence.

See *Arizona v. California, supra*; *Kansas v. Colorado*, 206 U. S. 46; *Wyoming v. Colorado*, 259 U. S. 419.

Arizona, by her proposed bill of complaint, asserts no right arising from her own appropriation of the waters of the Colorado River. No infringement of her rights acquired by appropriation is alleged, and no relief for their protection is prayed. While it is alleged that definite plans have been made for the irrigation of 1,000,000 acres of unirrigated land in Arizona, and a right to share in the water for that purpose is asserted, it does not appear that any initial step toward appropriation of water for such a project has been taken.

The right of the California corporations to withdraw from the river a total of 5,362,000 acre feet annually under the contracts with the Secretary of the Interior, is challenged only insofar as the prayer for relief asks that the unappropriated water of the river be equitably apportioned among Arizona and the defendant states, and that any increased amount to which the Republic of Mexico may be entitled be directed to be supplied from the amount to which California may otherwise be found to be equitably entitled.

Arizona does not assert any right to the benefit of the undertaking of California, in conformity to the Boulder Canyon Project Act, to restrict its own use of the water. The brief for Arizona disclaims the assertion of any rights under "the Boulder Canyon Project Act, the Colorado River Compact, or the Boulder Project itself."

The allegations and prayer of the bill are of significance only if Arizona, in advance of any act of appropriation, and independently of any rights which she may have acquired under the Boulder Canyon Project Act, may demand a judicial decree exempting the available water of the river, or some of it, from appropriation by other states until the indefinite time in the future when she or her inhabitants may see fit to appropriate it. A justiciable controversy is presented only if Arizona, as a sovereign state, or her citizens, whom she represents, have present rights in the unappropriated water of the river, or if the privilege to appropriate the water is capable of division and when partitioned may be judicially protected from appropriations by others pending its exercise.

The defendant states deny that there is any such right or privilege upon which this Court can act judicially in advance of appropriation. While California, by statement of her attorney general in brief and argument, disclaims any purpose to take more than the water to which she is restricted by the Boulder Canyon Project Act and by her own statute, she, and the other defendant states, nevertheless maintain that the authority of this Court is limited to the application of

the local law of appropriation in adjudicating their rights. They deny that Arizona and her inhabitants have or can assert any right in the water before its appropriation, and challenge the jurisdiction of the Court to make any division of the unexercised privilege among the states entitled to share in the unappropriated water. Pursued to its logical end, their contention is that California, save as she may have renounced the privilege, is free, subject to prior appropriations, to appropriate to her own use the entire flow of the water in the river, to the exclusion of any future beneficial enjoyment of it by Arizona.

Arizona insists that this court, in adjudicating the rights of states in the water of interstate streams, has declared that it will not hold itself restricted to rigid application of local rules of law governing private rights; that independently of those rules it may have recourse to applicable principles of international law and equity tending to secure to sovereign states equality of right in such water. *Kansas v. Colorado*, 185 U. S. 125, 146; *Missouri v. Illinois*, 200 U. S. 496, 520; *Kansas v. Colorado*, 206 U. S. 46, 97, *et seq.*; *Wyoming v. Colorado*, *supra*, 465, 470; *Connecticut v. Massachusetts*, 282 U. S. 660, 670; *New Jersey v. New York*, 283 U. S. 336, 342, 343. It points out that departure from the local formula may be compelled where the contending states apply, locally, different and irreconcilable doctrines, *Kansas v. Colorado*, *supra*, and that the common law of private riparian rights has been modified, even in suits between states adhering to it, by the application of principles of equitable apportionment. *Missouri v. Illinois*, *supra*, 526; *Connecticut v. Massachusetts*, *supra*, 671; *New Jersey v. New York*, *supra*, 343. But we have no occasion to consider the arguments urged upon us in support of the adoption, in this case, of a different rule from that of appropriation, as applied locally, for we are of the opinion that in the circumstances disclosed by the bill of complaint there can be no adjudication of rights in the unappropriated water of the Colorado River without the presence, as a party, of the United States, which, without its consent is not subject to suit even by a state. *Kansas v. United States*, 204 U. S. 331, 343.

The Colorado River is a navigable stream of the United States. The privilege of the states through which it flows and their inhabitants to appropriate and use the water is subject to the paramount power of the United States to control it for the purpose of improving navigation. *Arizona v. California*, *supra*. The Boulder Canyon Project Act, § 1, authorized the Secretary of the Interior to construct, at the expense of the United States, the Boulder Dam, with storage reservoir, and a hydro-electric plant. It provides, §§ 5, 6, for control, management and appropriation of the water by the United States, and declares, §§ 1, 8, (a), that this authority is conferred subject to the terms of the Colorado River Compact "for the purpose

of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generating of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking."

To carry out the purpose of the Act, § 1 directs the creation of a storage reservoir of a capacity of not less than 20,000,000 acre feet. According to the allegations of the proposed bill, the actual capacity of the completed reservoir is 30,500,000 acre feet, which is nearly twice the undepleted annual flow of the river, and four and one-half times the amount of water remaining unappropriated after deducting that which California is to receive under the contracts with the Secretary of the Interior.

By § 6 of the Act the dam and reservoir are directed to be used "first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights . . . ; and third, for power." Section 5 provides that "no person shall have or be entitled to have the use for any purpose of the water stored as aforesaid except by contract made as herein stated." Section 5 also provides that the Secretary of the Interior may contract for the storage of water and for delivery thereof upon charges which will provide revenue, and § 5 (c) directs that "Contracts for the use of water . . . shall be made with responsible applicants therefor who will pay the price fixed by the Secretary with a view to meeting the revenue requirements herein provided for." Acting under this authority the Secretary of the Interior has substantially completed the project and has entered into contracts, so the bill of complaint alleges, for the delivery of 5,362,000 acre feet of stored water to California corporations, and for the financing and construction of Parker and Imperial Dams and the All American Canal to facilitate the use of this water in California.

Without more detailed statement of the facts disclosed, it is evident that the United States, by Congressional legislation and by acts of its officers which that legislation authorizes, has undertaken, in the asserted exercise of its authority to control navigation, to impound, and control the disposition of, the surplus water in the river not already appropriated. The defendant states contend, and Arizona does not deny, that the natural dependable flow of the river is already over-appropriated, and it does not appear that without the storage of the impounded water any substantial amount of water would be available for appropriation.

The decree sought has no relation to any present use of the water thus impounded which infringes rights which Arizona may assert subject to superior but unexercised powers of the United States. Cf. *Wisconsin v. Illinois*, 278 U. S. 367; see *Arizona v. California*, *supra*, 464; *United States v. Arizona*, *supra*, 183. The prayer is for a decree of equitable division of the privilege of future appropriation. The relief asked, and that which upon the facts alleged would alone be of benefit to Arizona, is a decree adjudicating to petitioners the "unclouded . . . rights to the permanent use of" the water. Such a decree could not be framed without the adjudication of the superior rights asserted by the United States. The "equitable share" of Arizona in the unappropriated water impounded above Boulder Dam could not be determined without ascertaining the rights of the United States to dispose of that water in aid and support of its project to control navigation, and without challenging the dispositions already agreed to by the Secretary's contracts with the California corporations, and the provision as well of § 5 of the Boulder Canyon Project Act that no person shall be entitled to the stored water except by contract with the Secretary.

It is argued that the constitutional power of the United States to exert any control over the water stored at Boulder Dam is subject to the rights of Arizona to an equitable share in the unappropriated water "until such a time as commerce is actually moving on the river," and that in any case Congress has subordinated that power to Arizona's rights by the provisions of § 4 (a) of the Boulder Canyon Project Act, which authorizes Arizona, California and Nevada to enter into an agreement as to their relative rights in the water or the river. But these and similar contentions, so far as they were not answered adversely to Arizona in *Arizona v. California*, *supra*, 456, cannot be judicially determined in a proceeding to which the United States is not a party and in which it cannot be heard.

Every right which Arizona asserts is so subordinate to and dependent upon the rights and the exercise of an authority asserted by the United States that no final determination of the one can be made without a determination of the extent of the other. Although no decree rendered in its absence can bind or affect the United States, that fact is not an inducement for this Court to decide the rights of the states which are before it by a decree which, because of the absence of the United States, could have no finality. *California v. Southern Pacific Co.*, 157 U. S. 229, 251, 257; *Minnesota v. Northern Securities Co.*, 184 U. S. 199, 235, 245-247; *International Postal Supply Co. v. Bruce*, 194 U. S. 601, 606; *Texas v. Interstate Commerce Commission*, 258 U. S. 158, 163. A bill of complaint will not be entertained which, if filed, could only be dismissed because of the absence of the United States as a party. *Louisiana v. McAdoo*, 234 U. S. 627.

The petition to file the proposed bill of complaint is denied. We leave undecided the question whether an equitable division of the unappropriated water of the river can be decreed in a suit in which the United States and the interested states are parties. Arizona will be free to assert such rights as she may have acquired, whether under the Boulder Canyon Project Act and California's undertaking to restrict her own use of the water or otherwise, and to challenge, in any appropriate judicial proceeding, any act of the Secretary of the Interior or others, either states or individuals, injurious to it and in excess of their lawful authority.

Petition denied.

Part XIV

THE MEXICAN WATER TREATY AND RELATED DATA

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Appendix 1401

**THE MEXICAN WATER TREATY:
AUTHORIZATION FOR NEGOTIATION**

(Act of May 13, 1924, 43 Stat. 118, as amended by act of March 3, 1927, 44 Stat. 1403, by act of August 19, 1935, 49 Stat. 660, and by act of May 22, 1936, 49 Stat. 1370)

[PUBLIC—No. 286—74TH CONGRESS]

[H. R. 6453]

AN ACT To amend the Act of May 13, 1924, entitled "An Act providing for a study regarding the equitable use of the waters of the Rio Grande," and so forth, as amended by the public resolution of March 3, 1927

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act of May 13, 1924, entitled "An Act providing for a study regarding the equitable use of the waters of the Rio Grande below Fort Quitman, Texas, in cooperation with the United States of Mexico", as amended by the public resolution of March 3, 1927, is hereby amended to read as follows:

"The President is hereby authorized to designate the American Commissioner on the International Boundary Commission, United States and Mexico, or other Federal agency, to cooperate with a representative or representatives of the Government of Mexico in a study regarding the equitable use of the waters of the lower Rio Grande and the lower Colorado and Tia Juana Rivers, for the purpose of obtaining information which may be used as a basis for the negotiation of a treaty with the Government of Mexico relative to the use of the waters of these rivers and to matters closely related thereto. On completion of such study the results shall be reported to the Secretary of State.

"SEC. 2. The Secretary of State, acting through the American Commissioner, International Boundary Commission, United States and Mexico, is further authorized to conduct technical and other investigations relating to the defining, demarcation, fencing, or monumentation of the land and water boundary between the United States and Mexico, to flood control, water resources, conservation, and utilization of water, sanitation and prevention of pollution,

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channel rectification, and stabilization and other related matters upon the international boundary between the United States and Mexico; and to construct and maintain fences, monuments and other demarcations of the boundary line between the United States and Mexico, and sewer systems, water systems, and electric light, power and gas systems crossing the international border, and to continue such work and operations through the American Commissioner as are now in progress and are authorized by law.

"The President is authorized and empowered to construct, operate, and maintain on the Rio Grande River below Fort Quitman, Texas, any and all works or projects which are recommended to the President as the result of such investigations and by the President are deemed necessary and proper.

"SEC. 3. (a) The President is further authorized to construct any project or works which may be provided for in a treaty entered into with Mexico and to repair, protect, maintain, or complete works now existing or now under construction or those that may be constructed under the treaty provisions aforesaid; and to construct any project or works designed to facilitate compliance with the provisions of treaties between the United States and Mexico; and (b) to operate and maintain any project or works so constructed or, subject to such rules and regulations for continuing supervision by the said American Commissioner or any Federal agency as the President may cause to be promulgated, to turn over the operation and maintenance of such project or works to any Federal agency, or any State, county, municipality, district, or other political subdivision within which such project or works may be in whole or in part situated, upon such terms, conditions, and requirements as the President may deem appropriate.

"SEC. 4. In order to carry out the provisions of this Act, the President, or any Federal agency he may designate is authorized, (a) in his discretion, to enter into agreements with any one or more of said political subdivisions, in connection with the construction of any project or works provided for in section 2, paragraph 2, and section 3 of this Act, under the terms of which agreements there shall be furnished to the United States, gratuitously, except for the examination and approval of titles, the lands or easements in lands necessary for the construction, operation, and maintenance in whole or in part of any such project or works, or for the assumption by one or more of any such political subdivisions making such agreement, of the operation and maintenance of such project or works in whole or in part upon the completion thereof: *Provided, however,* That when an agreement is reached that necessary lands or easements shall be provided by any such political subdivision and for the future operation and maintenance by it of a project or works or a part thereof, in the discretion of the

President the title to such lands and easements for such projects or works need not be required to be conveyed to the United States but may be required only to be vested in and remain in such political subdivision; (b) to acquire by purchase, exercise of the power of eminent domain, or by donation, any real or personal property which may be necessary; (c) to withdraw from sale, public entry or disposal of such public lands of the United States as he may find to be necessary and thereupon the Secretary of the Interior shall cause the lands so designated to be withdrawn from any public entry whatsoever, and from sale, disposal, location or settlement under the mining laws or any other law relating to the public domain and shall cause such withdrawal to appear upon the records in the appropriate land office having jurisdiction over such lands, and such lands may be used for carrying out the purposes of this Act: *Provided*, That any such withdrawal may subsequently be revoked by the President; and (d) to make or approve all necessary rules and regulations.

“SEC. 5. Any moneys contributed by or received from the United Mexican States for the purpose of cooperating or assisting in carrying out the provisions of this Act shall be available for expenditure in connection with any appropriation which may be made for the purposes of this Act.”

Appendix 1402

**THE MEXICAN WATER TREATY:
LEGISLATION AUTHORIZING SALE, LEASES, ETC.,
OF LAND ACQUIRED UNDER TREATY, ETC.**

(Act of August 27, 1935, 49 Stat. 906, as amended by act of June 19,
1939, 53 Stat. 841)

[PUBLIC—No. 370—74TH CONGRESS]

[H. R. 7927]

AN ACT To authorize the Secretary of State to lease to citizens of the United States any land heretofore or hereafter acquired under any Act, Executive order or treaty in connection with projects, in whole or in part constructed or administered by the Secretary of State through the International Boundary Commission, United States and Mexico, American section

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of State be, and he is hereby, authorized to lease to citizens of the United States any land heretofore or hereafter acquired under any Act, Executive order, or treaty in connection with projects, in whole or in part, constructed or administered by the Secretary of State through the said American Commissioner, or to dispose of such lands to American citizens when no longer needed, by sale at public auction, after thirty days advertisement, at a price not less than that which may be fixed by three disinterested appraisers, to be designated by the Secretary of State, or by private sale, or otherwise, at not less than such appraised value: *Provided*, That any of such land as shall have been donated to the United States and which is no longer needed may be reconveyed, without cost, to the grantor or his heirs: *Provided further*, That the lease or disposal of any land pursuant hereto may, in the discretion of the Secretary of State, be subject to reservations in favor of the United States for rights-of-way for irrigation, drainage, river work, and other purposes, and any such disposal may be conditioned upon and made subject to inclusion of such lands in any existing irrigation district in the vicinity of such lands, the proceeds of any such lease or sale to be covered into the Treasury of the United States: *And provided further*, That in, the discretion of the Secretary of State, and subject to such conditions*

as he may deem appropriate, conveyances of any other of such lands not needed by the United States may be made to the State to which they lie adjacent or to any similarly situated county, city, or other governmental subdivision of such State, without cost, for use for public purposes.

The Secretary of State is further authorized to issue revokable licenses for public or private use for irrigation or other structures or uses not inconsistent with the use of such lands made, or to be made, by the United States, across any lands retained by the United States, and to execute all necessary leases, title instruments, and conveyances, in order to carry out the provisions of this Act.

Whenever the construction of any project or works undertaken or administered by the Secretary of State through the International Boundary Commission, United States and Mexico, results in the interference with or necessitates the alteration or restoration of constructed and existing irrigation or water-supply structures, sanitary or sewage disposal works, or other structures or physical property belonging to any municipal or private corporation, company, association, or individual, the Secretary of State may cause the restoration or reconstruction of such works, structures, or physical property or the construction of others in lieu thereof or he may compensate the owners thereof to the extent of the reasonable value thereof as the same may be agreed upon by the American Commissioner with such owner.

The Secretary of State acting through such officers as he may designate, is further authorized to consider, adjust, and pay from funds appropriated for the project, the construction of which resulted in damages, any claim for damages accruing after March 31, 1937, caused to owners of lands or other private property of any kind by reason of the operations of the United States, its officers or employees, in the survey, construction, operation, or maintenance of any project constructed or administered through the American Commissioner, International Boundary Commission, United States and Mexico, if such claim for damages does not exceed \$1,000 and has been filed with the American Commissioner within one year after the damage is alleged to have occurred, and when in the opinion of the American Commissioner such claim is substantiated by a report of a board appointed by the said Commissioner.

Appendix 1403

**THE MEXICAN WATER TREATY:
TRANSMITTAL OF TREATY: MESSAGE FROM THE
PRESIDENT AND REPORT OF THE SECRETARY
OF STATE**

(Extracts from Ex. A, 78th Cong., 2d sess.)

**TREATY WITH MEXICO RELATING TO THE UTILIZATION
OF THE WATERS OF CERTAIN RIVERS**

MESSAGE FROM THE PRESIDENT OF THE UNITED STATES, TRANSMITTING A TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNITED MEXICAN STATES, SIGNED AT WASHINGTON ON FEBRUARY 3, 1944, RELATING TO THE UTILIZATION OF THE WATERS OF THE COLORADO AND TIJUANA RIVERS AND OF THE RIO GRANDE FROM FORT QUITMAN, TEX., TO THE GULF OF MEXICO

FEBRUARY 15, 1944.—Treaty was read the first time and referred to the Committee on Foreign Relations and, together with the message of transmittal and the accompanying report, ordered to be printed for the use of the Senate. The injunction of secrecy was today removed from the treaty and the accompanying report.

THE WHITE HOUSE,
February 15, 1944.

To the Senate of the United States:

With a view to receiving the advice and consent of the Senate to ratification, I transmit herewith a treaty between the United States of America and the United Mexican States, signed at Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Tex., to the Gulf of Mexico.

I also transmit for the information of the Senate a report on the treaty made to me by the Secretary of State.

FRANKLIN D. ROOSEVELT.

(Enclosure: (1) Report of the Secretary of State; (2) treaty¹ between the United States and Mexico, February 3, 1944.)

¹ See appendix 1405.

DEPARTMENT OF STATE,
Washington, February 9, 1944.

The PRESIDENT,
The White House:

The undersigned, the Secretary of State, has the honor to lay before the President, with a view to its transmission to the Senate to receive the advice and consent of that body to ratification, if his judgment approve thereof, a treaty between the United States of America and the United Mexican States, signed at Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Tex., to the Gulf of Mexico.

The treaty consists of a preamble and 7 parts, and contains 28 articles.

Part I, with three articles, contains preliminary provisions. Article 1 defines certain important terms used in the treaty. Article 2 prescribes the general powers and functions of the International Boundary and Water Commission. By the provisions of article 2 the general administration of the treaty is entrusted to the International Boundary Commission organized under the convention of March 1, 1889, between the United States of America and Mexico, the name of the Commission being changed to International Boundary and Water Commission. The Commission is given the status of an international body, consisting of a United States section and a Mexican section, and it is provided that each Government shall accord diplomatic status to the Commissioner and certain of the other officers of the section of the other Government. Article 2 specifies the Department of State of the United States of America and the Ministry of Foreign Relations of Mexico as the agencies to represent the two Governments in every case wherein action by the Governments is required. Article 3 prescribes an order of preferences for the joint use of international waters.

Part II, consisting of five articles, has particular relation to the Rio Grande (Rio Bravo). Of the waters of this river below Fort Quitman the United States, by article 4, is allotted—

1. All of the waters contributed to the main stream by the measured United States tributaries, chiefly by the Pecos and Devils Rivers.

2. One-half of the flow in the Rio Grande below the lowest major international reservoir so far as this flow is not otherwise specifically allotted by the treaty.

3. One-third of the flow reaching this river from the measured Mexican tributaries above the Alamo River, provided that this one-third shall never be less than 350,000 acre-feet each year as an average in 5-year cycles.

4. One-half of all other flows occurring in the main channel of the Rio Grande.

The quantity thus allotted will not only supply existing uses but also will permit, by an efficient use of the water, considerable expansion of irrigated areas in Texas.

The remaining articles in part II make provision for the construction and operation of international works on the Rio Grande. Of chief importance is the provision, in article 5, for construction, by the two sections of the Commission, of three major international storage dams between the Big Bend and the head of the Lower Valley of Texas to provide capacity for water storage, for flood control and for the retention of silt. This article also makes provision for the construction of international auxiliary works in the Rio Grande. The cost of storage dams is to be divided in proportion to the conservation capacity allotted to each country, and the cost of other works is to be prorated in proportion to the benefits each country is to receive from each of these works. Articles 6 and 7 authorize the Commission to study, investigate, and prepare plans for flood-control works and for international hydroelectric plants on the Rio Grande. Articles 8 and 9 charge the Commission, subject to the approval of the Governments, with the preparation of rules and regulations for the storage, conveyance, and delivery of the waters of the Rio Grande, including the assignment to each country of capacities in the reservoirs. The Commission also is entrusted with the keeping of records of the waters belonging to each country and of all uses, diversions, and losses of these waters.

Part III, which is divided into six articles, prescribes the rules that are to govern the allocation and delivery to Mexico of a portion of the waters of the Colorado River. By article 10 the United States guarantees to Mexico a minimum quantity of 1,500,000 acre-feet of water each year, this water to be delivered in accordance with schedules to be furnished in advance by the Mexican section of the Commission. Beyond this minimum quantity the United States will allocate to Mexico, whenever the United States section decides there is a surplus of water, an additional quantity up to a total, including the 1,500,000 acre-feet, of not more than 1,700,000 acre-feet per year. Mexico may use any other waters that arrive at her points of diversion but can acquire no right to any quantity beyond the 1,500,000 acre-feet. These quantities, which may be made up of any waters of the Colorado River from any and all sources, whether direct river flows, return flow, or seepage, will be delivered by the United States in the boundary portion of the Colorado River, except that until 1980 Mexico may receive 500,000 acre-feet annually, and after that year 375,000 acre-feet annually through the All-American Canal as part of the guaranteed quantity. By another provision the

United States will undertake, if the Mexican diversion dam is located entirely in Mexico, to deliver up to 25,000 acre-feet, out of the total allocation, at the Sonora land boundary near San Luis.

In order to facilitate the delivery and diversion of Mexico's allocation, Mexico, as provided in article 12, is to build at its expense, within 5 years from the date the treaty enters into force, a main diversion structure in the Colorado River below the upper boundary line. If this dam is built in the limitrophe section of the river, its plans and construction must be approved by the Commission. Wherever it is built, there shall be constructed at the same time, at Mexico's expense, the works which, in the opinion of the Commission, may be necessary to protect lands in the United States against damage from floods and seepage which might result from the construction, operation, and maintenance of this dam. The United States, as provided in article 12, is to build a regulating dam, known as Davis Dam, at a point between Boulder Dam and Parker Dam, and is to use a portion of the capacity of this dam and reservoir to make possible the regulation, at the boundary, of water allotted to Mexico. Furthermore, the Commission is to make all necessary measurements of water flows, and the data obtained as to deliveries and flows are to be periodically compiled and exchanged between the two sections. Article 12 provides also that the United States, through its section of the Commission, is to acquire or construct and permanently own, operate, and maintain the works required for the delivery of Colorado River waters to Mexican diversion points on the land boundary. Article 13 provides that the Commission shall study, investigate, and prepare plans for flood control on the Lower Colorado. Article 14 provides that Mexico is to pay an equitable part of the construction, maintenance, and operating costs of Imperial Dam and the Imperial Dam Pilot Knob section of the All-American Canal, and is to pay all of such costs of works used entirely by Mexico. Article 15, relating to the annual schedules of deliveries to Mexico of Colorado River waters, provides that Mexico, in advance of each calendar year, is to supply two schedules, one to deal with the water to be delivered in the Colorado River and the other to deal with the water to be delivered through the All-American Canal. These schedules are subject to certain limitations, especially in regard to rates of flow at different times of the year, in order to provide assurance that the United States, in the period of ultimate development, will obtain credit for practically all of the flows that will be expected in the river as the result of United States uses and operations.

Part IV, consisting solely of article 16, places upon the Commission the duty of making investigations and reports regarding the most feasible projects for the conservation and use of the waters of the Tijuana River system and of submitting a recommendation for the allocation of these waters between the two countries.

The nine articles of part V contain provisions of a general nature relating to certain uses of the river channels and of the surfaces of artificial international lakes, to the international works, and to the Commission. By article 20 the two Governments, through their respective sections of the Commission, agree to carry out the construction of works allotted to them. By article 23 the two Governments undertake to acquire all private property necessary for the construction, maintenance, and operation of the works and to retain, through their respective sections, ownership and jurisdiction, each in its own territory, of all works, appurtenances, and other property required for the carrying out of the treaty provisions regarding the three rivers. However, the jurisdiction of each section of the Commission is definitely restricted to the territory of its own country.

Article 24 entrusts to the Commission certain powers and duties in addition to those specifically provided in the treaty. These powers and duties include the making of investigations and preparation of plans for works and the control thereof; the exercise of jurisdiction by the respective sections over all works; the discharge of the specific powers and duties entrusted to the Commission by this and other treaties; the prevention of any violation of the terms of the treaty; the settlement of all differences that may arise regarding the treaty; the preparation of reports and the making of recommendations to the respective Governments; and the construction, operation, and maintenance of all necessary gaging stations.

It is provided in article 25 that the Commission shall conduct its proceedings in accordance with the rules laid down by articles III and VII of the convention of March 1, 1889. In general, the Commission is to retain all duties, powers, and obligations assigned to it by previous treaties and agreements, so that the present treaty merely augments the Commission's powers, duties, and obligations.

Part VI, having two articles, contains transitory provisions. By article 26 Mexico undertakes, during a period of 8 years from the effective date of the treaty or until the beginning of operation of the lowest major international reservoir on the Rio Grande, to cooperate with the United States to relieve, in times of drought, water shortages in the Lower Rio Grande Valley of Texas. To this end Mexico, if requested, will release up to a total of 160,000 acre-feet of water during these 8 years from El Azúcar Reservoir on the San Juan River for the use of such lands in Texas, provided that Mexico shall be under no obligation to release for this purpose more than 40,000 acre-feet in any one year. By article 27, during the 5 years before Davis Dam and the Mexican diversion dam are built, the United States will permit Mexico, at its own expense, to build, under proper safeguards, a temporary diversion structure in the Colorado River for the purpose of diverting water into the present Alamo Canal. Furthermore, the

United States undertakes to cooperate with Mexico to the end that the Mexican irrigation requirements during this temporary period may be set for the lands under irrigation during 1943, provided that the water needed therefor is not currently required in the United States.

Part VII, consisting solely of article 28, contains the final provisions relating to ratification, entry into force, and termination. It is provided that the treaty shall enter into force on the day of the exchange of ratifications, and that it shall continue in force until terminated by another treaty concluded for that purpose between the two Governments.

Finally, it should be noted that the treaty provides that, in case of drought or serious accident to the hydraulic works in the United States, deliveries of Colorado River water to Mexico will be curtailed in the same proportion as uses in the United States are reduced, and that, if for similar reasons Mexico cannot provide the minimum 350,000 acre-feet from its measured tributaries of the Rio Grande, the deficiency is to be made up from these tributaries during the following 5-year cycle.

Respectfully submitted.

CORDELL HULL.

(Enclosure: Treaty between the United States and Mexico, February 3, 1944, relating to waters of the Colorado and Tijuana Rivers and of the Rio Grande.)

(NOTE.—The text of the treaty, which accompanied this message, is omitted here as it appears in full in Treaty Series 994, printed as Appendix 1405 in this volume.)

Appendix 1404

**THE MEXICAN WATER TREATY:
TRANSMITTAL OF PROTOCOL**

(S. Ex. H, 78th Cong., 2d sess.)

**PROTOCOL SUPPLEMENTARY TO THE TREATY WITH
MEXICO RELATING TO THE UTILIZATION OF THE
WATERS OF CERTAIN RIVERS**

MESSAGE FROM THE PRESIDENT OF THE UNITED STATES, TRANSMITTING A PROTOCOL, SIGNED IN WASHINGTON ON NOVEMBER 14, 1944, WHICH IS SUPPLEMENTARY TO THE TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNITED MEXICAN STATES, SIGNED AT WASHINGTON ON FEBRUARY 3, 1944, RELATING TO THE UTILIZATION OF THE WATERS OF THE COLORADO AND TIJUANA RIVERS AND OF THE RIO GRANDE FROM FORT QUITMAN, TEX., TO THE GULF OF MEXICO

NOVEMBER 24, 1944.—Protocol was read the first time and referred to the Committee on Foreign Relations and, together with the message of transmittal and the accompanying report, ordered to be printed for the use of the Senate. The injunction of secrecy was today removed from this protocol and the accompanying papers.

THE WHITE HOUSE,
November 24, 1944.

To the Senate of the United States:

With a view to receiving the advice and consent of the Senate to ratification I transmit herewith a protocol, signed in Washington on November 14, 1944, supplementary to the treaty between the United States of America and the United Mexican States relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande (Rio Bravo) which was signed in Washington on February 3, 1944.

I also transmit for the information of the Senate a report on the protocol made to me by the Acting Secretary of State.

FRANKLIN D. ROOSEVELT.

(Enclosures: (1) Report of the Acting Secretary of State; (2) protocol,¹ signed November 14, 1944, supplementary to treaty between United States and Mexico signed February 3, 1944.)

¹ See Appendix 1405.

DEPARTMENT OF STATE,
Washington, November 22, 1944.

The PRESIDENT,
The White House:

The undersigned, the Acting Secretary of State, has the honor to lay before the President, with a view to its transmission to the Senate to receive the advice and consent of that body to ratification, if his judgment approve thereof, a protocol, signed in Washington on November 14, 1944, supplementary to the treaty between the United States of America and the United Mexican States relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande (Rio Bravo) which was signed in Washington on February 3, 1944.

The treaty of February 3, 1944, was transmitted to the Senate by the President with his message of February 15, 1944, with a view to receiving the advice and consent of the Senate to ratification thereof. The text of the treaty and of the President's message, together with the text of the report of the Secretary of State dated February 9, 1944, have been printed in Senate Executive A, Seventy-eighth Congress, second session. The treaty was referred to the Committee on Foreign Relations of the Senate on February 15, 1944.

The purpose of the protocol is to clarify the meaning and application of those provisions of the treaty which relate to the functions and jurisdiction of the respective sections of the International Boundary and Water Commission in connection with the construction or use of works for storage or conveyance of water, flood control, stream gaging, or for any other purpose.

By its own terms the protocol is to be regarded as an integral part of the treaty of February 3, 1944, and shall be effective beginning with the day of the entry into force of the treaty, continuing effective so long as the treaty remains in force. Accordingly, after such time as the Senate may have given its advice and consent to the ratification of the treaty and protocol, the protocol should be ratified together with the treaty. It is provided in the protocol, as in the treaty, that the ratifications shall be exchanged in Washington.

Respectfully submitted.

EDWARD R. STETTINIUS, Jr.,
Acting Secretary of State.

(NOTE.—The text of the protocol, which accompanied this message, is omitted here as it appears in full in Treaty Series 994, printed as appendix 1405 in this volume.)

Appendix 1405

THE MEXICAN WATER TREATY:

TREATY SERIES 994 (59 STAT. 1219)

**UTILIZATION OF WATERS OF THE COLORADO
AND TIJUANA RIVERS AND OF THE RIO GRANDE**

TREATY BETWEEN THE UNITED STATES OF AMERICA AND MEXICO RESPECTING UTILIZATION OF WATERS OF THE COLORADO AND TIJUANA RIVERS AND OF THE RIO GRANDE, SIGNED AT WASHINGTON, FEBRUARY 3, 1944; AND PROTOCOL SIGNED AT WASHINGTON, NOVEMBER 14, 1944; RATIFICATION ADVISED BY THE SENATE OF THE UNITED STATES OF AMERICA, APRIL 18, 1945. SUBJECT TO CERTAIN UNDERSTANDINGS: RATIFIED BY THE PRESIDENT OF THE UNITED STATES OF AMERICA, NOVEMBER 1, 1945, SUBJECT TO SAID UNDERSTANDINGS; RATIFIED BY MEXICO, OCTOBER 16, 1945; RATIFICATIONS EXCHANGED AT WASHINGTON, NOVEMBER 8, 1945; PROCLAIMED BY THE PRESIDENT OF THE UNITED STATES OF AMERICA, NOVEMBER 27, 1945. SUBJECT TO SAID UNDERSTANDINGS; EFFECTIVE NOVEMBER 8, 1945

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

WHEREAS a treaty between the United States of America and the United Mexican States relating to the utilization of the waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico, was signed by their respective Plenipotentiaries in Washington on February 3, 1944, and a protocol supplementary to the said treaty was signed by their respective Plenipotentiaries in Washington on November 14, 1944.

the originals of which treaty and protocol, in the English and Spanish languages, are word for word as follows:

The Government of the United States of America and the Government of the United Mexican States: animated by the sincere spirit of cordiality and friendly cooperation which happily governs the relations between them; taking into account the fact that Articles VI and VII of the Treaty of Peace, Friendship and Limits between the United States of America and the United Mexican States signed at Guadalupe Hidalgo on February 2, 1848, [1] and Article IV of the boundary treaty between the two countries signed at the City of Mexico December 30, 1853, [2] regulate the use of the waters of the Rio Grande (Rio Bravo) and the Colorado River for purposes of navigation only; considering that the utilization of these waters for other purposes is desirable in the interest of both countries, and desiring, moreover, to fix and delimit the rights of the two countries with respect to the waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, United States of America, to the Gulf of Mexico, in order to obtain the most complete and satisfactory utilization thereof, have resolved to conclude a treaty and for this purpose have named as their plenipotentiaries:

The President of the United States of America:	El Presidente de los Estados Unidos de América:
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¹ [Treaty Series 207; 9 Stat. 922; 18 Stat. (pt. 2, Public Treaties) 492.]

² [Treaty Series 208; 10 Stat. 1031; 18 Stat. (pt. 2, Public Treaties) 503.]

Cordell Hull, Secretary of State of the United States of America, George S. Messersmith, Ambassador Extraordinary and Plenipotentiary of the United States of America in Mexico, and Lawrence M. Lawson, United States Commissioner, International Boundary Commission, United States and Mexico; and.

The President of the United Mexican States:

Francisco Castillo Nájera, Ambassador Extraordinary and Plenipotentiary of the United Mexican States in Washington, and Rafael Fernández MacGregor, Mexican Commissioner, International Boundary Commission, United States and Mexico; who, having communicated to each other their respective Full Powers and having found them in good and due form, have agreed upon the following:

Al Señor Cordell Hull, Secretario de Estado de los Estados Unidos de América, al Señor George S. Messersmith, Embajador Extraordinario y Plenipotenciario de los Estados Unidos de América en México, y al Señor Ingeniero Lawrence M. Lawson, Comisionado de los Estados Unidos en la Comisión Internacional de Límites entre los Estados Unidos y México; y

El Presidente de los Estados Unidos Mexicanos:

Al Señor Dr. Francisco Castillo Nájera, Embajador Extraordinario y Plenipotenciario de los Estados Unidos Mexicanos en Washington, y al Señor Ingeniero Rafael Fernández MacGregor, Comisionado Mexicano en la Comisión Internacional de Límites entre los Estados Unidos y México; quienes, después de haberse comunicado sus respectivos Plenos Poderes y haberlos encontrado en buena y debida forma, convienen en lo siguiente:

I—PRELIMINARY PROVISIONS

I—DISPOSICIONES PRELIMINARES

ARTICLE 1

ARTICULO 1

For the purposes of this Treaty it shall be understood that:

(a) "The United States" means the United States of America.

(b) "Mexico" means the United Mexican States.

(c) "The Commission" means the International Boundary and Water Commission, United States and Mexico, as described in Article 2 of this Treaty.

Para los efectos de este Tratado se entenderá:

a) Por "los Estados Unidos", los Estados Unidos de América.

b) Por "Mexico", los Estados Unidos Mexicanos.

c) Por "La Comisión", la Comisión Internacional de Límites y Aguas entre los Estados Unidos y México, según se define en el Artículo 2 de este Tratado.

- (d) "To divert" means the deliberate act of taking water from any channel in order to convey it elsewhere for storage, or to utilize it for domestic, agricultural, stock-raising or industrial purposes whether this be done by means of dams across the channel, partition weirs, lateral intakes, pumps or any other methods.
- (e) "Point of diversion" means the place where the act of diverting the water is effected.
- (f) "Conservation capacity of storage reservoirs" means that part of their total capacity devoted to holding and conserving the water for disposal thereof as and when required, that is, capacity additional to that provided for silt retention and flood control.
- (g) "Flood discharges and spills" means the voluntary or involuntary discharge of water for flood control as distinguished from releases for other purposes.
- (h) "Return flow" means that portion of diverted water that eventually finds it (*sic*) way back to the source from which it was diverted.
- (i) "Release" means the deliberate discharge of stored water for conveyance elsewhere or for direct utilization.
- (j) "Consumptive use" means the use of water by evaporation, plant transpiration or other manner whereby the water is consumed and does not return to its source of supply. In general it is
- d) Por "derivar", el acto deliberado de tomar agua de cualquier cauce con objeto de hacerla llegar a otro lugar y almacenarla, o aprovecharla con fines domésticos, agrícolas, ganaderos o industriales; ya sea que dicho acto se lleve a cabo utilizando presas construidas a través del cauce, partidores de corriente, bocatomas alterales, bombas o cualesquier otros medios.
- e) Por "punto de derivación", el lugar en que se realiza el acto de derivar el agua.
- f) Por "capacidad útil de las presas de almacenamiento", aquella parte de la capacidad total que se dedica a retener y conservar el agua para disponer de ella cuando sea necesario, o sea, la capacidad adicional a las destinadas al azolve y al control de avenidas.
- g) Por "desfogue" y por "desfogue", la salida voluntaria o involuntaria de agua para controlar las avenidas o con cualquier otro propósito que no sea de los especificados para la extracción.
- h) Por "retornos", la parte de un volumen de agua derivada de una fuente de abastecimiento, que finalmente regresa a su fuente original.
- i) Por "extracción", la salida del agua almacenada, deliberadamente realizada para su conducción a otro lugar o para su aprovechamiento directo.
- j) Por "consumo", el agua evaporada, transpirada por las plantas, retenida o por cualquier medio perdida y que no puede retornar a su cauce de escurrimiento. En general se mide por

measured by the amount of water el monto del agua derivada menos diverted less the part thereof el volumen que retorna al cauce. which returns to the stream.

(k) "Lowest major international dam or reservoir" means the k) Por "presa inferior principal internacional de almacenamiento", la presa internacional principal major international dam or reser- la presa internacional principal voir situated farthest downstream. situada más aguas abajo.

(l) "Highest major internation- l) Por "presa superior principal al dam or reservoir" means the internacional de almacenamiento", la presa internacional principal major international dam or res- la presa internacional principal ervoir situated farthest upstream. situada más aguas arriba.

ARTICLE 2

ARTICULO 2

The International Boundary Commission established pursuant to the provisions of the Convention between the United States and Mexico signed in Washington March 1, 1889 [1] to facilitate the carrying out of the principles contained in the Treaty of November 12, 1884 [2] and to avoid difficulties occasioned by reason of the changes which take place in the beds of the Rio Grande (Rio Bravo) and the Colorado River shall hereafter be known as the International Boundary and Water Commission, United States and Mexico, which shall continue to function for the entire period during which the present Treaty shall continue in force. Accordingly, the term of the Convention of March 1, 1889 shall be considered to be indefinitely extended, and the Convention of November 21, 1900 [3] between the United States and Mexico regarding that Convention shall be considered completely terminated.

La Comisión Internacional de Límites establecida por la Convención suscrita en Washington, por los Estados Unidos y México, el primero de marzo de 1889, para facilitar la ejecución de los principios contenidos en el Tratado de 12 de noviembre de 1884, y para evitar las dificultades ocasionadas con motivo de los cambios que tienen lugar en el cauce de los ríos Bravo (Grande) y Colorado, cambiará su nombre por el de Comisión Internacional de Límites y Aguas, entre los Estados Unidos y México, la que continuará en funciones por todo el tiempo que el presente Tratado esté en vigor. En tal virtud se considera prorrogado indefinidamente el término de la Convención de primero de marzo de 1889 y se deroga, por completo, la de 21 de noviembre de 1900, entre los Estados Unidos y México, relativa a aquella Convención.

¹ [Treaty Series 232; 26 Stat. 1512.]

² [Treaty Series 226; 24 Stat. 1011.]

³ [Treaty Series 244; 31 Stat. 1936.]

The application of the present Treaty, the regulation and exercise of the rights and obligations which the two Governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise are hereby entrusted to the International Boundary and Water Commission, which shall function in conformity with the powers and limitations set forth in this Treaty.

The Commission shall in all respects have the status of an international body, and shall consist of a United States Section and a Mexican Section. The head of each Section shall be an Engineer Commissioner. Wherever there are provisions in this Treaty for joint action or joint agreement by the two Governments, or for the furnishing of reports, studies or plans to the two Governments, or similar provisions, it shall be understood that the particular matter in question shall be handled by or through the Department of State of the United States and the Ministry of Foreign Relations of Mexico.

The Commission or either of its two Sections may employ such assistants and engineering and legal advisers as it may deem necessary. Each Government shall accord diplomatic status to the Commissioner, designated by the other Government. The Commissioner, two principal engineers, a legal adviser, and a secretary, designated by each Government as members of its Section of the Commission, shall be entitled

La aplicación del presente Tratado, la reglamentación y el ejercicio de los derechos y el cumplimiento de las obligaciones que los dos Gobiernos adquieren en virtud del mismo, y la resolución de todos los conflictos que originen su observancia y ejecución, quedan confiados a la Comisión Internacional de Límites y Aguas que funcionará de conformidad con las facultades y restricciones que se fijan en este Tratado.

La Comisión tendrá plenamente el carácter de un organismo internacional y estará constituida por una Sección de los Estados Unidos y por una Sección Mexicana. Cada Sección será encabezada por un Comisionado Ingeniero. Cuando en este Tratado se establece acción conjunta o el acuerdo de los dos Gobiernos o la presentación a los mismos de informes, estudios o proyectos, u otras estipulaciones similares, se entenderá que dichos asuntos serán de la competencia de la Secretaría de Estado de los Estados Unidos y de la Secretaría de Relaciones Exteriores de México o que se tratarán por su conducto.

La Comisión y cada una de las Secciones que la constituyen podrán emplear a los auxiliares y consejeros técnicos, de ingeniería y legales, que estimen necesarios. Cada Gobierno reconocerá carácter diplomático al Comisionado del otro, y el Comisionado, dos ingenieros principales, un consejero legal y un secretario, designados por el otro Gobierno como miembros de su Sección de la Comisión, tendrán derecho a todos

in the territory of the other country to the privileges and immunities appertaining to diplomatic officers. The Commission and its personnel may freely carry out their observations, studies and field work in the territory of either country.

The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary, each Section of the Commission retaining jurisdiction over that part of the works located within the limits of its own country. Neither Section shall assume jurisdiction or control over works located within the limits of the country of the other without the express consent of the Government of the latter. The works constructed, acquired or used in fulfillment of the provisions of this Treaty and located wholly within the territorial limits of either country, although these works may be international in character, shall remain, except as herein otherwise specifically provided, under the exclusive jurisdiction and control of the Section of the Commission in whose country the works may be situated.

The duties and powers vested in the Commission by this Treaty shall be in addition to those vested in the International Boundary Commission by the Convention of March 1, 1889 and other pertinent treaties and agreements in force between the two countries except

los privilegios e inmunidades pertenecientes a funcionarios diplomáticos. La Comisión y su personal podrán llevar a cabo, con toda libertad, sus observaciones, estudios y trabajos de campo en el territorio de cualquiera de los dos países.

La jurisdicción de la Comisión se ejercerá sobre los tramos limítrofes del río Bravo (Grande) y del río Colorado, sobre la línea divisoria terrestre entre los dos países y sobre las obras construídas en aquéllos y en ésta. Cada una de la Secciones tendrá jurisdicción sobre la parte de las obras situadas dentro de los límites de su nación y ninguna de ellas ejercerá jurisdicción o control sobre obras construídas o situadas dentro de los límites del país de la otra Sección sin el expreso consentimiento del Gobierno de esta última. Las obras construídas, adquiridas o usadas en cumplimiento de las disposiciones de este Tratado y que se encuentren ubicadas totalmente dentro de los límites territoriales de cualquiera de los dos países, aunque de carácter internacional, quedarán, con las excepciones expresamente señaladas en este Tratado, bajo la exclusiva jurisdicción y control de la Sección de la Comisión en cuyo país se encuentren dichas obras.

Las facultades y obligaciones que impone a la Comisión este Tratado serán adicionales a las conferidas a la Comisión Internacional de Límites por la Convención del primero de marzo de 1889 y los demás tratados y convenios pertinentes en vigor entre

as the provisions of any of them may be modified by the present Treaty.

Each Government shall bear the expenses incurred in the maintenance of its Section of the Commission. The joint expenses, which may be incurred as agreed upon by the Commission, shall be borne equally by the two Governments.

ARTICLE 3

In matters in which the Commission may be called upon to make provision for the joint use of international waters, the following order of preferences shall serve as a guide:

1. Domestic and municipal uses.
2. Agriculture and stock-raising.
3. Electric power.
4. Other industrial uses.
5. Navigation.
6. Fishing and hunting.
7. Any other beneficial uses which may be determined by the Commission.

All of the foregoing uses shall be subject to any sanitary measures or works which may be mutually agreed upon by the two Governments, which hereby agree to give preferential attention to the solution of all border sanitation problems.

II—RIO GRANDE (RIO BRAVO)

ARTICLE 4

The waters of the Rio Grande (Rio Bravo) between Fort Quitman, Texas and the Gulf of Mex-

los dos países, con excepción de aquellas estipulaciones de cualquiera de ellos que este Tratado modifica.

Los gastos que demande el sostenimiento de cada Sección de la Comisión serán sufragados por cuenta del Gobierno del cual dependa. Los gastos comunes que acuerde la Comisión serán cubiertos por mitad por ambos Gobiernos.

ARTICULO 3

En los asuntos referentes al uso común de las aguas internacionales, acerca de los cuales deba resolver la Comisión, servirá de guía el siguiente orden de preferencias:

- 1°.—Usos domésticos y municipales.
- 2°.—Agricultura y ganadería.
- 3°.—Energía eléctrica.
- 4°.—Otros usos industriales.
- 5°.—Navegación.
- 6°.—Pesca y caza.
- 7°.—Cualesquiera otros usos benéficos determinados por la Comisión.

Todos los usos anteriores estarán sujetos a las medidas y obras sanitarias que convengan de común acuerdo los dos Gobiernos, los cuales se obligan a resolver preferentemente los problemas fronterizos de saneamiento.

II—RIO BRAVO (GRANDE)

ARTICULO 4

Las aguas del río Bravo (Grande) entre Fort Quitman, Texas, y el Golfo de México se asignan a los

ico are hereby allotted to the two countries in the following manner:

A. To Mexico:

(a) All of the waters reaching the main channel of the Rio Grande (Rio Bravo) from the San Juan and Alamo Rivers, including the return flow from the lands irrigated from the latter two rivers.

(b) One-half of the flow in the main channel of the Rio Grande (Rio Bravo) below the lowest major international storage dam, so far as said flow is not specifically allotted under this Treaty to either of the two countries.

(c) Two-thirds of the flow reaching the main channel of the Rio Grande (Rio Bravo) from the Conchos, San Diego, San Rodrigo, Escondido and Salado Rivers and the Las Vacas Arroyo, subject to the provisions of subparagraph (c) of paragraph B of this Article.

(d) One-half of all other flows not otherwise allotted by this Article occurring in the main channel of the Rio Grande (Rio Bravo), including the contributions from all the unmeasured tributaries, which are those not named in this Article, between Fort Quitman and the lowest major international storage dam.

B. To the United States:

(a) All of the waters reaching the main channel of the Rio Grande (Rio Bravo) from the Pecos and Devils Rivers, Goodenough Spring, and Alamito,

dos países de la siguiente manera:

A.—A México:

a) La totalidad de las aguas que lleguen a la corriente principal del río Bravo (Grande), de los ríos San Juan y Alamo; comprendiendo los retornos procedentes de los terrenos que rieguen estos dos últimos ríos.

b) La mitad del escurrimiento del cauce principal del río Bravo (Grande) abajo de la presa inferior principal internacional de almacenamiento, siempre que dicho escurrimiento no esté asignado expresamente en este Tratado a alguno de los dos países.

c) Las dos terceras partes del caudal que llegue a la corriente principal del río Bravo (Grande) de los ríos Conchos, San Diego, San Rodrigo, Escondido y Salado y Arroyo de Las Vacas, en concordancia con lo establecido en el inciso c) del párrafo B de este Artículo.

d) La mitad de cualquier otro escurrimiento en el cauce principal del río Bravo (Grande), no asignado específicamente en este Artículo, y la mitad de las aportaciones de todos los afluentes no aforados—que son aquellos no denominados en este Artículo—entre Fort Quitman y la presa inferior principal internacional.

B. A los Estados Unidos:

a) La totalidad de las aguas que lleguen a la corriente principal del río Bravo (Grande) procedentes de los ríos Pecos, Devils, manantial Goodenough y

Terlingua, San Felipe and Pinto Creeks.

(b) One-half of the flow in the main channel of the Rio Grande (Rio Bravo) below the lowest major international storage dam, so far as said flow is not specifically allotted under this Treaty to either of the two countries.

(c) One-third of the flow reaching the main channel of the Rio Grande (Rio Bravo) from the Conchos, San Diego, San Rodrigo, Escondido and Salado Rivers and the Las Vacas Arroyo, provided that this third shall not be less, as an average amount in cycles of five consecutive years, than 350,000 acre-feet (431,721,000 cubic meters) annually. The United States shall not acquire any right by the use of the waters of the tributaries named in this subparagraph, in excess of the said 350,000 acre-feet (431,721,000 cubic meters) annually, except the right to use one-third of the flow reaching the Rio Grande (Rio Bravo) from said tributaries, although such one-third may be in excess of that amount.

(d) One-half of all other flows not otherwise allotted by this Article occurring in the main channel of the Rio Grande (Rio Bravo), including the contributions from all the unmeasured tributaries, which are those not named in this Article, between Fort Quitman and the

arroyos Alamito, Terlingua, San Felipe y Pinto.

b) La mitad del escurrimiento del cauce principal del río Bravo (Grande) abajo de la presa inferior principal internacional de almacenamiento, siempre que dicho escurrimiento no esté asignado expresamente en este Tratado a alguno de los dos países.

c) Una tercera parte del agua que llegue a la corriente principal del río Bravo (Grande) procedente de los ríos Conchos, San Diego, San Rodrigo, Escondido, Salado y Arroyo de Las Vacas; tercera parte que no será menor en conjunto, en promedio y en ciclos de cinco años consecutivos, de 431 721 000 metros cúbicos (350 000 acres pies) anuales. Los Estados Unidos no adquirirán ningún derecho por el uso de las aguas de los afluentes mencionados en este inciso en exceso de los citados 431 721 - 000 metros cúbicos (350 000 acres pies), salvo el derecho a usar de la tercera parte del escurrimiento que llegue al río Bravo (Grande) de dichos afluentes, aunque ella exceda del volumen aludido.

d) La mitad de cualquier otro escurrimiento en el cauce principal del río Bravo (Grande), no asignado específicamente en este Artículo, y la mitad de las aportaciones de todos los afluentes no aforados—que son aquéllos no denominados en este Artículo—entre Fort Quit-

lowest major international storage dam.

In the event of extraordinary drought or serious accident to the hydraulic systems on the measured Mexican tributaries, making it difficult for Mexico to make available the run-off of 350,000 acre-feet (431,721,000 cubic meters) annually, allotted in subparagraph (c) of paragraph B of this Article to the United States as the minimum contribution from the aforesaid Mexican tributaries, any deficiencies existing at the end of the aforesaid five-year cycle shall be made up in the following five-year cycle with water from the said measured tributaries.

Whenever the conservation capacities assigned to the United States in at least two of the major international reservoirs, including the highest major reservoir, are filled with waters belonging to the United States, a cycle of five years shall be considered as terminated and all debits fully paid, whereupon a new five-year cycle shall commence.

ARTICLE 5

The two Governments agree to construct jointly, through their respective Sections of the Commission, the following works in the main channel of the Rio Grande (Rio Bravo):

I. The dams required for the conservation, storage and regulation of the greatest quantity of the annual flow of the river in a way to ensure the continuance of

man y la presa inferior principal internacional.

En casos de extraordinaria sequía o de serio accidente en los sistemas hidráulicos de los afluentes mexicanos aforados que hagan difícil para México dejar escurrir los 431 721 000 metros cúbicos (350 000 acres pies) anuales que se asignan a los Estados Unidos como aportación mínima de los citados afluentes mexicanos, en el inciso c) del párrafo B de este Artículo, los faltantes que existieren al final del ciclo aludido de cinco años, se repondrán en el ciclo siguiente con agua procedente de los mismos tributarios.

Siempre que la capacidad útil asignada a los Estados Unidos de por lo menos dos de las presas internacionales principales, incluyendo la localizada más aguas arriba, se llene con aguas pertenecientes a los Estados Unidos, se considerará terminado un ciclo de cinco años y todos los débitos totalmente pagados, iniciándose, a partir de ese momento, un nuevo ciclo.

ARTICULO 5

Los dos Gobiernos se comprometen a construir conjuntamente, por conducto de sus respectivas Secciones de la Comisión, las siguientes obras en el cauce principal del río Bravo (Grande):

I.—Las presas que se requieran para el almacenamiento y regulación de la mayor parte que sea posible del escurrimiento anual del río en forma de asegurar los

existing uses and the development of the greatest number of feasible projects, within the limits imposed by the water allotments specified.

II. The dams and other joint works required for the diversion of the flow of the Rio Grande (Rio Bravo).

One of the storage dams shall be constructed in the section between Santa Helena Canyon and the mouth of the Pecos River; one in the section between Eagle Pass and Laredo, Texas (Piedras Negras and Nuevo Laredo in Mexico); and a third in the section between Laredo and Roma, Texas (Nuevo Laredo and San Pedro de Roma in Mexico). One or more of the stipulated dams may be omitted, and others than those enumerated may be built in either case as may be determined by the Commission, subject to the approval of the two Governments.

In planning the construction of such dams the Commission shall determine:

(a) The most feasible sites;
 (b) The maximum feasible reservoir capacity at each site;
 (c) The conservation capacity required by each country at each site, taking into consideration the amount and regimen of its allotment of water and its contemplated uses;

(d) The capacity required for retention of silt;

(e) The capacity required for flood control.

The conservation and silt capacities of each reservoir shall be as-

provechamientos existentes y llevar a cabo el mayor número de proyectos factibles, dentro de los límites impuestos por las asignaciones estipuladas de agua.

II.—Las presas y las otras obras comunes que se requieran para la derivación de las aguas del río Bravo (Grande).

Una de la presas de almacenamiento se construirá en el tramo entre el Cañón de Santa Elena y la desembocadura del río Pecos; otra, en el tramo comprendido entre Piedras Negras, Coahuila y Nuevo Laredo, Tamaulipas (Eagle Pass y Laredo en los Estados Unidos) y una tercera, en el tramo entre Nuevo Laredo, Tamaulipas y San Pedro de Roma, Tamaulipas (Laredo y Roma en los Estados Unidos). A juicio de la Comisión, sujeto a la aprobación de los dos Gobiernos, podrán omitirse una o más de las presas estipuladas y, en cambio, podrán construirse otras que no sean de las enumeradas.

Al planear la construcción de dichas presas, la Comisión determinará:

a) Los sitios más adecuados;
 b) La máxima capacidad factible en cada sitio;
 c) La capacidad útil requerida por cada país en cada sitio tomando en consideración el monto y régimen de su asignación de agua y sus usos previstos;

d) La capacidad requerida para la retención de azolves;

e) La capacidad requerida para el control de avenidas.

La capacidad útil y la requerida para la retención de azolves, serán

signed to each country in the same proportion as the capacities required by each country in such reservoir for conservation purposes. Each country shall have an undivided interest in the flood control capacity of each reservoir.

asignadas a cada uno de los dos países en cada presa, en la misma proporción que las capacidades requeridas para almacenamiento útil, por cada país, en la misma presa. Ambos países tendrán un interés común indivisible en la capacidad de cada presa para el control de avenidas.

The construction of the international storage dams shall start within two years following the approval of the respective plans by the two Governments. The works shall begin with the construction of the lowest major international storage dam, but works in the upper reaches of the river may be constructed simultaneously. The lowest major international storage dam shall be completed within a period of eight years from the date of the entry into force of this Treaty.

La construcción de las presas internacionales de almacenamiento principiará dentro de los dos años siguientes a la aprobación por los dos Gobiernos de los planos correspondientes. Los trabajos empezarán por la construcción de la presa inferior principal internacional de almacenamiento, pero se podrán llevar a cabo, simultáneamente, obras en los tramos superiores del río. La presa inferior principal internacional deberá quedar terminada en un plazo máximo de ocho años a partir de la fecha en que entre en vigor este Tratado.

The construction of the dams and other joint works required for the diversion of the flows of the river shall be initiated on the dates recommended by the Commission and approved by the two Governments.

La construcción de las presas y otras obras comunes requeridas para la derivación del caudal del río, se iniciará en las fechas determinadas por la Comisión y aprobadas por los dos Gobiernos.

The cost of construction, operation and maintenance of each of the international storage dams shall be prorated between the two Governments in proportion to the capacity allotted to each country for conservation purposes in the reservoir at such dam.

El costo de construcción de cada una de las presas internacionales de almacenamiento y los costos de su operación y mantenimiento se dividirán entre los dos países en proporción a las respectivas capacidades útiles que en la presa de que se trate se asignen a cada uno de ellos.

The cost of construction, operation and maintenance of each of the dams and other joint works required for the diversion of the

El costo de construcción de cada una de las presas y de las otras obras comunes necesarias para la derivación de las aguas del

flows of the river shall be prorated between the two Governments in proportion to the benefits which the respective countries receive therefrom, as determined by the Commission and approved by the two Governments.

río y los costos de su operación y mantenimiento, serán prorrateados entre los dos países en proporción de los beneficios que reciban, respectivamente, de cada una de dichas obras, de acuerdo con lo que determine la Comisión y aprueben los dos Gobiernos.

ARTICLE 6

ARTICULO 6

The Commission shall study, investigate, and prepare plans for flood control works, where and when necessary, other than those referred to in Article 5 of this Treaty, on the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico. These works may include levees along the river, floodways and grade-control structures, and works for the canalization, rectification and artificial channeling of reaches of the river. The Commission shall report to the two Governments the works which should be built, the estimated cost thereof, the part of the works to be constructed by each Government, and the part of the works to be operated and maintained by each Section of the Commission. Each Government agrees to construct, through its Section of the Commission, such works as may be recommended by the Commission and approved by the two Governments. Each Government shall pay the costs of the works constructed by it and the costs of operation and maintenance of the part of the works assigned to it for such purpose.

Siempre que sea necesario, la Comisión estudiará, investigará y preparará los proyectos para las obras—distintas de aquéllas a que se refiere el Artículo 5 de este Tratado—de control de las avenidas del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México. Estas obras podrán incluir bordos a lo largo del río, cauces de alivio, estructuras de control de pendiente y la canalización, rectificación o encauzamiento de algunos tramos del río. La Comisión informará a los dos Gobiernos acerca de las obras que deberán construirse, de la estimación de sus costos, de la parte de aquéllas que deberá quedar a cargo de cada uno de ellos y de la parte de las obras que deberá ser operada y mantenida por cada Sección de la Comisión. Cada Gobierno conviene en construir, por medio de su Sección de la Comisión, las obras que recomiende la Comisión y que aprueben los dos Gobiernos. Cada Gobierno pagará los costos de las obras que construya y los costos de operación y mantenimiento de la parte de las obras que se le asigne con tal objeto.

ARTICLE 7

ARTICULO 7

The Commission shall study, La Comisión estudiará, investigate and prepare plans for gará y preparará los proyectos plants for generating hydro-electric energy which it may be para las plantas de generación de energía hidroeléctrica que fuere feasible to construct at the inter- factible construir en las presas national storage dams on the Rio internacionales de almacenamiento Grande (Rio Bravo). The Com- en el río Bravo (Grande). La mission shall report to the two Comisión informará a los dos Governments in a Minute the Gobiernos, mediante un acta, works which should be built, the acerca de las obras que deberán estimated cost thereof, and the construirse, de la estimación de part of the works to be con- sus costos y de la parte de aquéllas structed by each Government. que deberá quedar a cargo de Each Government agrees to con- cada uno de ellos. Cada Gobierno struct, through its Section of the conviene en construir, por medio Commission, such works as may de su Sección de la Comisión, be recommended by the Com- las obras que le recomiende la mission and approved by the two Comisión y que aprueben los dos Governments. Both Govern- Gobiernos. Las plantas hidro- ments, through their respective eléctricas serán operadas y men- Sections of the Commission, shall tenidas conjuntamente por ambos operate and maintain jointly such Gobiernos por conducto de sus hydroelectric plants. Each Gov- respectivas Secciones de la Comi- ernment shall pay half the cost sión. Cada Gobierno pagará la of the construction, operation and mitad del costo de construcción, maintenance of such plants, and operación y mantenimiento de the energy generated shall be estas plantas y en la misma assigned to each country in like proporción será asignada a cada proportion. uno de los dos países la energía hidroeléctrica generada.

ARTICLE 8

ARTICULO 8

The two Governments recog- Los dos Gobiernos reconocen nize that both countries have a que ambos países tienen un interés common interest in the conserva- común en la conservación y en el tion and storage of waters in the almacenamiento de las aguas en the international reservoirs and in the las presas internacionales y en el maximum use of these structures el mejor uso de dichas presas, con for the purpose of obtaining the objeto de obtener el más benéfico most beneficial, regular and con- regular y constante aprovecha- stant use of the waters belong- miento de las aguas que les co- ing to them. Accordingly, within the rresponden. Con tal fin, la Comi- year following the placing in sión, dentro del año siguiente de

operation of the first of the major international storage dams which is constructed, the Commission shall submit to each Government for its approval, regulations for the storage, conveyance and delivery of the waters of the Rio Grande (Rio Bravo) from Fort Quitman, Texas to the Gulf of Mexico. Such regulations may be modified, amended or supplemented when necessary by the Commission, subject to the approval of the two Governments. The following general rules shall severally govern until modified or amended by agreement of the Commission, with the approval of the two Governments:

(a) Storage in all major international reservoirs above the lowest shall be maintained at the maximum possible water level, consistent with flood control, irrigation use and power requirements.

(b) Inflows to each reservoir shall be credited to each country in accordance with the ownership of such inflows.

(c) In any reservoir the ownership of water belonging to the country whose conservation capacity therein is filled, and in excess of that needed to keep it filled, shall pass to the other country to the extent that such country may have unfilled conservation capacity, except that one country may at its option temporarily use the conservation capacity of the other country not currently being used in any of the upper reservoirs; pro-

haber sido puesta en operación la primera de las presas principales internacionales que se construya, someterá a la aprobación de los dos Gobiernos un reglamento para el almacenamiento, conducción y entrega de las aguas del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México. Dicha reglamentación podrá ser modificada, adicionada o complementada, cuando sea necesario, por la Comisión, con la aprobación de los dos Gobiernos. Cada una de las siguientes reglas generales regirá hasta que sean modificadas por acuerdo de la Comisión con la aprobación de los dos Gobiernos:

a) El almacenamiento de aguas en todas las presas superiores principales internacionales se mantendrá al más alto nivel que sea compatible con el control de avenidas, las extracciones normales para irrigación y los requerimientos de generación de energía eléctrica.

b) Las entradas de agua a cada presa se acreditarán al país a quien pertenezca dicha agua.

c) En cualquier vaso de almacenamiento la propiedad del agua perteneciente al país que tenga agua en exceso de la necesaria para mantener llena la capacidad útil que le corresponda, pasará al otro país, hasta que se llene la capacidad útil asignada a éste. Sin embargo, en todos los vasos de almacenamiento superiores, un país, al llenarse la capacidad útil que le pertenezca, podrá usar transitoriamente la capacidad útil del

vided that in the event of flood discharge or spill occurring while one country is using the conservation capacity of the other, all of such flood discharge or spill shall be charged to the country using the other's capacity, and all inflow shall be credited to the other country until the flood discharge or spill ceases or until the capacity of the other country becomes filled with its own water.

(d) Reservoir losses shall be charged in proportion to the ownership of water in storage. Releases from any reservoir shall be charged to the country requesting them, except that releases for the generation of electrical energy, or other common purpose, shall be charged in proportion to the ownership of water in storage.

(e) Flood discharges and spills from the upper reservoirs shall be divided in the same proportion as the ownership of the inflows occurring at the time of such flood discharges and spills, except as provided in subparagraph (c) of this Article. Flood discharges and spills from the lowest reservoir shall be divided equally, except that one country, with the consent of the Commission, may use such part of the share of the other country as is not used by the latter country.

segundo país y que éste no use, siempre que, si en ese momento ocurrieren derrames y desfogues, la totalidad de éstos se cargue al primero y todas las entradas a la presa se consideren propiedad del segundo, hasta que cesen los derrames o desfogues o hasta que la capacidad útil del segundo se llene con aguas que le pertenezcan.

d) Las pérdidas que ocurran en los vasos de almacenamiento se cargarán a los dos países en proporción de los respectivos volúmenes almacenados que les pertenezcan. Las extracciones de cualquiera de los vasos se cargarán al país que las solicite, excepto las efectuadas para la generación de energía eléctrica u otro propósito común que se cargarán a cada uno de los dos países en proporción de los respectivos volúmenes almacenados que les pertenezcan.

e) Los derrames y desfogues de los vasos superiores de almacenamiento se dividirán entre los dos países en la misma proporción que guarden los volúmenes pertenecientes a cada uno de ellos de las aguas que entren a los almacenamientos durante el tiempo en que ocurran los citados derrames y desfogues, con excepción del caso previsto en el inciso c) de este Artículo. Los derrames y desfogues de la presa inferior de almacenamiento se dividirán en partes iguales entre los dos países, pero uno de ellos, con el permiso de la Comisión, podrá usar las aguas correspondientes al otro país que éste no usare.

(f) Either of the two countries may avail itself, whenever it so desires, of any water belonging to it and stored in the international reservoirs, provided that the water so taken is for direct beneficial use or for storage in other reservoirs. For this purpose the Commissioner of the respective country shall give appropriate notice to the Commission, which shall prescribe the proper measures for the opportune furnishing of the water.

f) Cualquiera de los dos países podrá disponer, en el momento en que lo desee, del agua almacenada que le pertenezca en las presas internacionales, siempre que su extracción se efectúe para algún uso benéfico directo, o para ser almacenada en otra presa. Al efecto, el Comisionado respectivo dará el aviso correspondiente a la Comisión, la que dictará las medidas necesarias para el suministro oportuno del agua.

ARTICLE 9

ARTICULO 9

(a) The channel of the Rio Grande (Rio Bravo) may be used by either of the two countries to convey water belonging to it.

(b) Either of the two countries may, at any point on the main channel of the river from Fort Quitman, Texas to the Gulf of Mexico, divert and use the water belonging to it and may for this purpose construct any necessary works. However, no such diversion or use, not existing on the date this Treaty enters into force, shall be permitted in either country, nor shall works be constructed for such purpose, until the Section of the Commission in whose country the diversion or use is proposed has made a finding that the water necessary for such diversion or use is available from the share of that country, unless the Commission has agreed to a greater diversion or use as provided by paragraph (d) of this Article. The proposed use and the plans for the diversion works to be constructed in connection

a) El cauce del río Bravo (Grande) podrá ser empleado por los dos países para conducir el agua que les pertenezca.

b) Cualquiera de los dos países podrá derivar y usar, en cualquier lugar del cauce principal del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México, el agua que le pertenezca y podrá construir, para ello, las obras necesarias. Sin embargo, no podrá hacerse ninguna derivación o uso en cualquiera de los dos países, fuera de los existentes en la fecha en que entre en vigor este Tratado, ni construirse ningunas obras con aquel fin, hasta que la Sección de la Comisión del país en que se intente hacer la derivación o uso verifique que hay el agua necesaria para ese efecto, dentro de la asignación de ese mismo país, a menos que la Comisión haya convenido, de acuerdo con lo estipulado en el inciso d) de este Artículo, en una derivación o uso en mayor cantidad. El uso proyectado, y los planos para las correspondien-

therewith shall be previously made known to the Commission for its information.

(c) Consumptive uses from the main stream and from the unmeasured tributaries below Fort Quitman shall be charged against the share of the country making them.

(d) The Commission shall have the power to authorize either country to divert and use water not belonging entirely to such country, when the water belonging to the other country can be diverted and used without injury to the latter and can be replaced at some other point on the river.

(e) The Commission shall have the power to authorize temporary diversion and use by one country of water belonging to the other, when the latter does not need it or is unable to use it, provided that such authorization or the use of such water shall not establish any right to continue to divert it.

(f) In case of the occurrence of an extraordinary drought in one country with an abundant supply of water in the other country, water stored in the international storage reservoirs and belonging to the country enjoying such abundant water supply may be withdrawn, with the consent of the Commission, for the use of the country undergoing the drought.

(g) Each country shall have the right to divert from the main channel of the river any amount of water, including the water belonging to the other country,

tes obras de derivación que deban construirse, al efecto, se darán a conocer previamente a la Comisión para su información.

c) Los consumos hechos, abajo de Fort Quitman, en la corriente principal y en los afluentes no aforados, se cargarán a cuenta de la asignación del país que los efectúe.

d) La Comisión podrá autorizar que se deriven y usen aguas que no correspondan completamente al país que pretenda hacerlo, cuando el agua que pertenezca al otro país pueda ser derivada y usada sin causarle perjuicio y le sea repuesta en algún otro lugar del río.

e) La Comisión podrá autorizar la derivación y uso transitorios a favor de un país de aguas que pertenezcan al otro, cuando éste no las necesite o no las pueda utilizar y sin que dicha autorización o el uso de las citadas aguas establezca, con relación a las mismas, ningún derecho para continuar derivándolas.

f) En los casos en que concurra una extraordinaria sequía en un país con un abundante abastecimiento de agua en el otro país, el agua de éste almacenada en los vasos de almacenamiento internacionales podrá ser extraída, con el consentimiento de la Comisión, para uso del país que experimente la sequía.

g) Cada uno de los países tendrá el derecho de derivar del cauce principal del río cualquiera cantidad de agua, incluyendo el agua perteneciente al otro país,

for the purpose of generating hydro-electric power, provided that such diversion causes no injury to the other country and does not interfere with the international generation of power and that the quantities not returning directly to the river are charged against the share of the country making the diversion. The feasibility of such diversions not existing on the date this Treaty enters into force shall be determined by the Commission, which shall also determine the amount of water consumed, such water to be charged against the country making the diversion.

con el objeto de generar energía hidroeléctrica, siempre que tal derivación no cause perjuicio al otro país, no interfiera con la generación internacional de energía eléctrica y que los volúmenes que no retornen directamente al río sean cargados a la participación del país que hizo la derivación. La factibilidad de dichas derivaciones, que no existan al entrar en vigor este Tratado, será determinada por la Comisión, la que también fijará la cantidad de agua consumida que se cargará en cuenta de la participación del país que efectúe la derivación.

(h) In case either of the two countries shall construct works for diverting into the main channel of the Rio Grande (Rio Bravo) or its tributaries waters that do not at the time this Treaty enters into force contribute to the flow of the Rio Grande (Rio Bravo) such water shall belong to the country making such diversion.

h) En el caso de que cualquiera de los dos países construya obras para decivar, hacia el cauce principal del río Bravo (Grande) o de sus tributarios, aguas que no contribuyan, en la fecha en que este Tratado entre en vigor, al escurrimiento del citado río, dicha agua pertenecerá al país que haya hecho esa derivación.

(i) Main stream channel losses shall be charged in proportion to the ownership of water being conveyed in the channel at the times and places of the losses.

i) Las pérdidas de agua ocurridas en la corriente principal serán cargadas a cada país en proporción a los volúmenes conducidos o escurridos que le pertenezcan, en ese lugar del cauce y en el momento en que ocurran las pérdidas.

(j) The Commission shall keep a record of the waters belonging to each country and of those that may be available at a given moment, taking into account the measurement of the allotments, the regulation of the waters in storage, the consumptive uses, the withdrawals, the diversions, and the losses. For this purpose the

j) La Comisión llevará un registro de las aguas que pertenezcan a cada país y de aquéllas de que pueda disponer en un momento dado, teniendo en cuenta al aforo de las aportaciones, la regularización de los almacenamientos, los consumos, las extracciones, las derivaciones y las pérdidas. Al efecto, la Comisión construirá,

Commission shall construct, operate and maintain on the main channel of the Rio Grande (Rio Bravo), and each Section shall construct, operate and maintain on the measured tributaries in its own country, all the gaging stations and mechanical apparatus necessary for the purpose of making computations and of obtaining the necessary data for such record. The information with respect to the diversions and consumptive uses on the unmeasured tributaries shall be furnished to the Commission by the appropriate Section. The cost of construction of any new gaging stations located on the main channel of the Rio Grande (Rio Bravo) shall be borne equally by the two Governments. The operation and maintenance of all gaging stations or the cost of such operation and maintenance shall be apportioned between the two Sections in accordance with determinations to be made by the Commission.

operará y mantendrá en la corriente principal del río Bravo (Grande) y cada Sección en los correspondientes afluentes aforados, todas las estaciones hidrométricas y aparatos mecánicos que sean necesarios para hacer los cálculos y obtener los datos requeridos para el aludido registro. La información respecto a las derivaciones y consumos hechos en los afluentes no aforados será proporcionada por la Sección que corresponda. El costo de construcción de las estaciones hidrométricas nuevas que se localicen en el cauce principal del río Bravo (Grande) se dividirá igualmente entre los dos Gobiernos. La operación y mantenimiento, ó el costo de los mismos, de todas las estaciones hidrométricas serán distribuídos entre las dos Secciones, de acuerdo con lo que determine la Comisión.

III—COLORADO RIVER

ARTICLE 10

Of the waters of the Colorado River, from any and all sources, there are allotted to Mexico:

(a) A guaranteed annual quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) to be delivered in accordance with the provisions of Article 15 of this Treaty.

(b) Any other quantities arriving at the Mexican points of diversion, with the understanding that in any year in which, as deter-

III—RIO COLORADO

ARTICULO 10

De las aguas del río Colorado, cualquiera que sea su fuente, se asignan a México:

a) Un volumen garantizado de 1 850 234 000 metros cúbicos (1 500 000 acres pies) cada año, que se entregará de acuerdo con lo dispuesto en el Artículo 15 de este Tratado.

b) Cualesquier otros volúmenes que lleguen a los puntos mexicanos de derivación; en la inteligencia de que, cuando a juicio de la

mined by the United States Section, there exists a surplus of waters of the Colorado River in excess of the amount necessary to supply uses in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) annually to Mexico, the United States undertakes to deliver to Mexico, in the manner set out in Article 15 of this Treaty, additional waters of the Colorado River system to provide a total quantity not to exceed 1,700,000 acre-feet (2,096,931,000 cubic meters) a year. Mexico shall acquire no right beyond that provided by this subparagraph by the use of the waters of the Colorado River system, for any purpose whatsoever, in excess of 1,500,000 acre-feet (1,850,234,000 cubic meters) annually.

In the event of extraordinary drought or serious accident to the irrigation system in the United States, thereby making it difficult for the United States to deliver the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) a year, the water allotted to Mexico under subparagraph (a) of this Article will be reduced in the same proportion as consumptive uses in the United States are reduced.

ARTICLE 11

(a) The United States shall deliver all waters allotted to Mexico wherever these waters may arrive in the bed of the limitrophe section of the Colorado River, with the exceptions hereinafter

Sección de los Estados Unidos, en cualquier año exista en el río Colorado agua en exceso de la necesaria para abastecer los consumos en los Estados Unidos y el volumen garantizado anualmente a México de 1 850 234 000 metros cúbicos (1 500 000 acres pies), los Estados Unidos se obligan a entregar a México, según lo establecido en el Artículo 15 de este Tratado, cantidades adicionales de agua del sistema del río Colorado hasta por un volumen total que no exceda de 2 096 931 000 metros cúbicos (1 700 000 acres pies) anuales. México no adquirirá ningún derecho, fuera del que le confiere este inciso, por el uso de las aguas del sistema del río Colorado para cualquier fin, en exceso de 1 850 234 000 metros cúbicos (1 500 000 acres pies) anuales.

En los casos de extraordinaria sequía o de serio accidente al sistema de irrigación de los Estados Unidos, que haga difícil a éstos entregar la cantidad garantizada de 1 850 234 000 metros cúbicos (1 500 000 acres pies), por año, el agua asignada a México, según el inciso a) de este Artículo, se reducirá en la misma proporción en que se reduzcan los consumos en los Estados Unidos.

ARTICULO 11

a) Los Estados Unidos entregarán las aguas asignadas a México en cualquier lugar a que lleguen en el lecho del tramo limitrofe del río Colorado, con las excepciones que se citan más adelante. El

provided. Such waters shall be made up of the waters of the river, whatever their origin, subject to the provisions of the following paragraphs of this Article.

(b) Of the waters of the Colorado River allotted to Mexico by subparagraph (a) of Article 10 of this Treaty, the United States shall deliver, wherever such waters may arrive in the limitrophe section of the river, 1,000,000 acre-feet (1,233,489,000 cubic meters) annually from the time the Davis dam and reservoir are placed in operation until January 1, 1980 and thereafter 1,125,000 acre-feet (1,387,675,000 cubic meters) annually, except that, should the main diversion structure referred to in subparagraph (a) of Article 12 of this Treaty be located entirely in Mexico and should Mexico so request, the United States shall deliver a quantity of water not exceeding 25,000 acre-feet (30,837,000 cubic meters) annually, unless a larger quantity may be mutually agreed upon, at a point, to be likewise mutually agreed upon, on the international land boundary near San Luis, Sonora, in which event the quantities of 1,000,000 acre-feet (1,233,489,000 cubic meters) and 1,125,000 acre-feet (1,387,675,000 cubic meters) provided hereinabove as deliverable in the limitrophe section of the river shall be reduced by the quantities to be delivered in the year concerned near San Luis, Sonora.

volumen asignado se formará con las aguas del citado río, cualquiera que sea su fuente, con sujeción a las estipulaciones contenidas en los párrafos siguientes de este Artículo.

b) Del volumen de aguas del río Colorado asignado a México en el inciso a) del Artículo 10 de este Tratado, los Estados Unidos entregarán en cualquier lugar a que lleguen del tramo limítrofe del río, 1 233 489 000 metros cúbicos (1 000 000 de acres pies) de agua anualmente, desde la fecha en que se ponga en operación la presa Davis hasta el primero de enero de 1980 y, después de esta fecha, 1 387 675 000 metros cúbicos (1 125 000 acres pies) de agua cada año. Sin embargo, si la estructura principal de derivación a que se refiere el inciso a) del Artículo 12 de este Tratado quedare localizada totalmente en México, los Estados Unidos entregarán, a solicitud de México, en un lugar mutuamente determinado de la línea terrestre limítrofe cerca de San Luis, Sonora, un volumen de agua que no exceda de 30 837 000 metros cúbicos (25 000 acres pies) anualmente, a menos que se convenga en un volumen mayor. En este último caso, a los mencionados volúmenes de 1 233 489 000 metros cúbicos (1 000 000 de acres pies) y de 1 387 675 000 metros cúbicos (1 125 000 acres pies) que deberán entregarse, como se especifica arriba, en el tramo limítrofe del río, se les deducirán los volúmenes que se entreguen, cada año, cerca de San Luis, Sonora.

(c) During the period from the time the Davis dam and reservoir are placed in operation until January 1, 1980, the United States shall also deliver to Mexico annually, of the water allotted to it, 500,000 acre-feet (616,745,000 cubic meters), and thereafter the United States shall deliver annually 375,000 acre-feet (462,558,000 cubic meters), at the international boundary line, by means of the All-American Canal and a canal connecting the lower end of the Pilot Knob Wasteway with the Alamo Canal or with any other Mexican canal which may be substituted for the Alamo Canal. In either event the deliveries shall be made at an operating water surface elevation not higher than that of the Alamo Canal at the point where it crossed the international boundary line in the year 1943.

(d) All the deliveries of water specified above shall be made subject to the provisions of Article 15 of this Treaty.

ARTICLE 12

The two Governments agree to construct the following works:

(a) Mexico shall construct at its expense, within a period of five years from the date of the entry into force of this Treaty, a main diversion structure below the point where the northernmost part of the international land boundary line intersects the Colorado River. If such diversion structure is located in the limitrophe section of

c) En el período comprendido entre la fecha en que la Presa Davis se ponga en operación y el primero de enero de 1980, los Estados Unidos entregarán anualmente a México, además, del volumen asignado a México, 616 745 000 metros cúbicos (500 000 acres pies) y, a partir de la última fecha citada, 462 558 000 metros cúbicos (375 000 acres pies) anuales, en la línea limítrofe internacional, por conducto del Canal Todo Americano y de un canal que una al extremo inferior de la descarga de Pilot Knob con el Canal del Alamo o con cualquier otro canal mexicano que lo sustituya. En ambos casos las entregas se harán a una elevación de la superficie del agua no mayor que aquella con la que se operaba el Canal del Alamo, en el punto en que cruzaba la línea divisoria en el año de 1943.

d) Todas las entregas de agua especificadas anteriormente se sujetarán a las estipulaciones del Artículo 15 de este Tratado.

ARTICULO 12

Los dos Gobiernos se comprometen a construir las siguientes obras:

a) México construirá a sus expensas, en un plazo de cinco años contados a partir de la fecha en que entre en vigor este Tratado, una estructura principal de derivación ubicada aguas abajo del punto en que la parte más al norte de la línea divisoria internacional terrestre encuentra al río Colorado. Si dicha estructura se lo-

the river, its location, design and construction shall be subject to the approval of the Commission. The Commission shall thereafter maintain and operate the structure at the expense of Mexico. Regardless of where such diversion structure is located, there shall simultaneously be constructed such levees, interior drainage facilities and other works, or improvements to existing works, as in the opinion of the Commission shall be necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of this diversion structure. These protective works shall be constructed, operated and maintained at the expense of Mexico by the respective Sections of the Commission, or under their supervision, each within the territory of its own country.

(b) The United States, within a period of five years from the date of the entry into force of this Treaty, shall construct in its own territory and at its expense, and thereafter operate and maintain at its expense, the Davis storage dam and reservoir, a part of the capacity of which shall be used to make possible the regulation at the boundary of the waters to be delivered to Mexico in accordance with the provisions of Article 15 of this Treaty.

(c) The United States shall construct or acquire in its own terri-

calizare en el tramo limítrofe del río, su ubicación, proyecto y construcción se sujetarán a la aprobación de la Comisión. Una vez construida la estructura, la Comisión la operará y mantendrá a expensas de México. Independientemente del lugar en que se localice la estructura aludida, simultáneamente se construirán los bordos, drenajes interiores y otras obras de protección y se harán las mejoras a las existentes, según la Comisión estime necesario, para proteger los terrenos ubicados dentro de los Estados Unidos de los daños que pudieran producirse a causa de avenidas y filtraciones como resultado de la construcción, operación y mantenimiento de la citada estructura de derivación. Estas obras de protección serán construidas, operadas y mantenidas, a expensas de México, por las correspondientes Secciones de la Comisión, o bajo su vigilancia, cada una dentro de su propio territorio.

b) Los Estados Unidos construirán, a sus expensas, en su propio territorio, en un plazo de cinco años contados a partir de la fecha en que entre en vigor este Tratado, la presa de almacenamiento Davis, una parte de cuya capacidad se usará para obtener la regularización de las aguas que deben ser entregadas a México de la manera establecida en el Artículo 15 de este Tratado. La operación y mantenimiento de la misma presa serán por cuenta de los Estados Unidos.

c) Los Estados Unidos construirán o adquirirán en su propio

tory the works that may be necessary to convey a part of the waters of the Colorado River allotted to Mexico to the Mexican diversion points on the international land boundary line referred to in this Treaty. Among these works shall be included: the canal and other works necessary to convey water from the lower end of the Pilot Knob Wasteway to the international boundary, and, should Mexico request it, a canal to connect the main diversion structure referred to in subparagraph (a) of this Article, if this diversion structure should be built in the limitrophe section of the river, with the Mexican system of canals at a point to be agreed upon by the Commission on the international land boundary near San Luis, Sonora. Such works shall be constructed or acquired and operated and maintained by the United States Section at the expense of Mexico. Mexico shall also pay the costs of any sites or rights of way required for such works.

(d) The Commission shall construct, operate and maintain in the limitrophe section of the Colorado River, and each Section shall construct, operate and maintain in the territory of its own country on the Colorado River below Imperial Dam and on all other carrying facilities used for the delivery of water to Mexico, all necessary gauging stations and other measuring devices for the purpose of keeping a complete record of the waters delivered to Mexico and of the flows of the river. All data ob-

territorio las obras que fueren necesarias para hacer llegar una parte de las aguas del río Colorado, asignadas a México, a los puntos mexicanos de derivación en la línea divisoria internacional terrestre que se especifican en este Tratado. Entre estas obras se incluirán: el canal y las otras obras necesarias para conducir el agua desde el extremo inferior de la descarga de Pilot Knob hasta el límite internacional y, a solicitud de México, un canal que conecte la estructura principal de derivación a que se refiere el inciso a) de este Artículo, si ésta se construyere en el tramo limítrofe del río, con el sistema mexicano de canales en el punto de la línea divisoria internacional, cerca de San Luis, Sonora, en que convenga la Comisión. Las obras mencionadas serán construidas o adquiridas y operadas y mantenidas por la Sección de los Estados Unidos a expensas de México. México cubrirá también los costos de los sitios y derechos de vía requeridos para dichas obras.

d) La Comisión construirá, mantendrá y operará en el tramo limítrofe del río Colorado, y cada Sección construirá, mantendrá y operará en su territorio respectivo, en el río Colorado, aguas abajo de la presa Imperial, y en todas las otras obras usadas para entregar agua a México, las estaciones hidrométricas y dispositivos necesarios para llevar un registro completo del caudal que se entregue a México y del escurrimiento del río. Todos los datos obtenidos al respecto serán com-

tained as to such deliveries and pilados e intercambiados periódica-
flows shall be periodically com- mente por las dos Secciones.
piled and exchanged between the
two Sections.

ARTICLE 13

ARTICULO 13

The Commission shall study, in- La Comisión estudiará, investi-
vestigate and prepare plans for gará y preparará los proyectos
flood control on the Lower Colo- para el control de las avenidas en
rado River between Imperial Dam el Bajo Río Colorado, tanto en los
and the Gulf of California, in both Estados Unidos como en México,
the United States and Mexico, and desde la Presa Imperial hasta el
shall, in a Minute, report to the Golfo de California, e informará a
two Governments the works which los dos Gobiernos, mediante un
should be built, the estimated cost acta, acerca de las obras que de-
thereof, and the part of the works berán construirse, de la estimación
to be constructed by each Govern- de sus costos y de la parte de las
ment. The two Governments obras que deberá construir cada
agree to construct, through their Gobierno. Los dos Gobiernos con-
respective Sections of the Comi- vienen en construir, por medio de
mission, such works as may be rec- sus respectivas Secciones de la
ommended by the Commission and Comisión, las obras que aprueben,
approved by the two Govern- recomendadas por la Comisión, y
ments, each Government to pay en pagar los costos de las que res-
the costs of the works constructed pectivamente construyan. De la
by it. The Commission shall misma manera, la Comisión re-
likewise recommend the parts of comendará qué porciones de las
the works to be operated and obras deberán ser operadas y
maintained jointly by the Comi- mantenidas conjuntamente por la
mission and the parts to be oper- Comisión y cuáles operadas y
ated and maintained by each mantenidas por cada Sección. Los
Section. The two Governments dos Gobiernos convienen en pagar
agree to pay in equal shares the por partes iguales el costo de la
cost of joint operation and main- operación y mantenimiento con-
tenance, and each Government juntos, y cada Gobierno conviene
agrees to pay the cost of operation en pagar el costo de operación y
and maintenance of the works as- mantenimiento de las obras asig-
signed to it for such purpose. nadas a él con dicho objeto.

ARTICLE 14

ARTICULO 14

In consideration of the use of the En consideración del uso del
All-American Canal for the deliv- Canal Todo Americano para la
ery to Mexico, in the manner pro- entrega a México, en la forma
vided in Articles 11 and 15 of this establecida en los Artículos 11 y

Treaty, of a part of its allotment 15 de este Tratado, de una parte of the waters of the Colorado de su asignación a las aguas del River, Mexico shall pay to the río Colorado, México pagará a los United States: Estados Unidos:

(a) A proportion of the costs actually incurred in the construction of Imperial Dam and the Imperial Dam-Pilot Knob section of the All-American Canal, this proportion and the method and terms of repayment to be determined by the two Governments, which, for this purpose, shall take into consideration the proportionate uses of these facilities by the two countries, these determinations to be made as soon as Davis dam and reservoir are placed in operation.

(b) Annually, a proportionate part of the total costs of maintenance and operation of such facilities, these costs to be prorated between the two countries in proportion to the amount of water delivered annually through such facilities for use in each of the two countries.

In the event that revenues from the sale of hydro-electric power which may be generated at Pilot Knob become available for the amortization of part or all of the costs of the facilities named in subparagraph (a) of this Article, the part that Mexico should pay of the costs of said facilities shall be reduced or repaid in the same proportion as the balance of the total costs are reduced or repaid. It is understood that any such revenue shall not become available until the cost of any works which may be constructed for the generation of hydro-electric power at

a) Una parte de los costos reales de la construcción de la Presa Imperial y del tramo Imperial-Pilot Knob del Canal Todo Americano; dicha parte y la forma y términos de su pago serán determinados por los dos Gobiernos, tomando en consideración la proporción en que ambos países usarán las citadas obras. Esta determinación deberá ser hecha tan pronto como sea puesta en operación la Presa Davis.

b) Anualmente, la parte que le corresponda de los costos totales de mantenimiento y operación de aquellas obras. Dichos costos serán prorrateados entre los dos países en proporción a la cantidad de agua entregada anualmente a cada uno de ellos, para su uso, por medio de esas obras.

En el caso de que pueda disponerse de los productos de la venta de la energía hidroeléctrica que se genere en Pilot Knob para la amortización de una parte o de la totalidad de los costos de las obras enumeradas en el inciso a) de este Artículo, la parte que México deberá pagar del costo de dichas obras será reducida o reembolsada en la misma proporción en que se reduzca o reembolse el saldo insoluto de los costos totales. Queda entendido que no podrá disponerse con ese fin de esos productos de la venta de energía eléctrica sino hasta que el costo de

said location has been fully amortized from the revenues derived therefrom. todas las obras construídas en ese lugar para generación de energía eléctrica, haya sido totalmente amortizado con los mencionados productos de la venta de la energía eléctrica.

ARTICLE 15

A. The water allotted in subparagraph (a) of Article 10 of this Treaty shall be delivered to Mexico at the points of delivery specified in Article 11, in accordance with the following two annual schedules of deliveries by months, which the Mexican Section shall formulate and present to the Commission before the beginning of each calendar year:

SCHEDULE I

Schedule I shall cover the delivery, in the limitrophe section of the Colorado River, of 1,000,000 acre-feet (1,233,489,000 cubic meters) of water each year from the date Davis dam and reservoir are placed in operation until January 1, 1980 and the delivery of 1,125,000 acre-feet (1,387,675,000 cubic meters) of water each year thereafter. This schedule shall be formulated subject to the following limitations:

With reference to the 1,000,000 acre-foot (1,233,489,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 600 cubic feet

ARTICULO 15

A.—El agua asignada en el inciso a) del Artículo 10 de este Tratado será entregada a México en los lugares especificados en el Artículo 11, de acuerdo con dos tablas anuales de entregas mensuales, que se indican a continuación, y que la Sección Mexicana formulará y presentará a la Comisión antes del principio de cada año civil:

TABLA I

La tabla I detallará la entrega en el tramo límite del río Colorado de 1 233 489 000 metros cúbicos (1 000 000 de acres pies) anuales de agua, a partir de la fecha en que la Presa Davis se ponga en operación, hasta el primero de enero de 1980, y la entrega de 1 387 675 000 metros cúbicos (1 125 000 acres pies) anuales de agua después de esa fecha. Esta tabla se formulará con sujeción a las siguientes limitaciones:

Para el volumen de 1 233 489 000 metros cúbicos (1 000 000 de acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 17.0 metros cúbicos (600 pies cúbicos) ni

(17.0 cubic meters) nor more than 3,500 cubic feet (99.1 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 1,000 cubic feet (28.3 cubic meters) nor more than 3,500 cubic feet (99.1 cubic meters) per second.

With reference to the 1,125,000 acre-foot (1,387,675,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 675 cubic feet (19.1 cubic meters) nor more than 4,000 cubic feet (113.3 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 1,125 cubic feet (31.9 cubic meters) nor more than 4,000 cubic feet (113.3 cubic meters) per second.

Should deliveries of water be made at a point on the land boundary near San Luis, Sonora, as provided for in Article 11, such deliveries shall be made under a sub-schedule to be formulated and furnished by the Mexican Section. The quantities and monthly rates of deliveries under such sub-schedule shall be in proportion to those specified for Schedule I, unless otherwise agreed upon by the Commission.

mayor de 99.1 metros cúbicos (3 500 pies cúbicos) por segundo

b) Durante los meses restantes del año, el gasto de entrega no será menor de 28.3 metros cúbicos (1 000 pies cúbicos) ni mayor de 99.1 metros cúbicos (3 500 pies cúbicos) por segundo.

Para el volumen de 1 387 675 000 metros cúbicos (1 125 000 acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 19.1 metros cúbicos (675 pies cúbicos) ni mayor de 113.3 metros cúbicos (4 000 pies cúbicos) por segundo

b) Durante los meses restantes del año, el gasto de entrega no será menor de 31.9 metros cúbicos (1 125 pies cúbicos) ni mayor de 113.3 metros cúbicos (4 000 pies cúbicos) por segundo.

En el caso en que se hagan entregas de agua en un lugar de la línea divisoria terrestre cercano a San Luis, Sonora, de acuerdo con lo establecido en el Artículo 11, dichas entregas se sujetarán a una subtabla que formulará y proporcionará la Sección Mexicana. Los volúmenes y gastos mensuales de entrega especificados en dicha subtabla estarán en proporción a los especificados para la Tabla I, salvo que la Comisión acuerde otra cosa.

SCHEDULE II

Schedule II shall cover the delivery at the boundary line by means of the All-American Canal of 500,000 acre-feet (616,745,000 cubic meters) of water each year from the date Davis dam and reservoir are placed in operation until January 1, 1980 and the delivery of 375,000 acre-feet (462,558,000 cubic meters) of water each year thereafter. This schedule shall be formulated subject to the following limitations:

With reference to the 500,000 acre-foot (616,745,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 300 cubic feet (8.5 cubic meters) nor more than 2,000 cubic feet (56.6 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 500 cubic feet (14.2 cubic meters) nor more than 2,000 cubic feet (56.6 cubic meters) per second.

With reference to the 375,000 acre-foot (462,558,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 225 cubic feet (6.4 cubic meters) nor more

TABLA II

La tabla II detallará la entrega en la línea divisoria de las aguas procedentes del Canal Todo Americano, de un volumen de 616 745 000 metros cúbicos (500 000 acres pies) anuales de agua a partir de la fecha en que la Presa Davis sea puesta en operación, hasta el primero de enero de 1980, y de 462 558 000 metros cúbicos (375 000 acres pies) de agua anuales después de esa fecha. Esta tabla se formulará con sujeción a las siguientes limitaciones:

Par el volumen de 616 745 000 metros cúbicos (500 000 acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 8.5 metros cúbicos (300 pies cúbicos), ni mayor de 56.6 metros cúbicos (2 000 pies cúbicos) por segundo.

b) Durante los meses restantes del año, el gasto de entrega no será menor de 14.2 metros cúbicos (500 pies cúbicos), ni mayor de 56.6 metros cúbicos (2 000 pies cúbicos) por segundo.

Para el volumen de 462 558 000 metros cúbicos (375 000 acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 6.4 metros cúbicos (225 pies cúbicos) ni mayor de 42.5 metros

than 1,500 cubic feet (42.5 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 375 cubic feet (10.6 cubic meters) nor more than 1,500 cubic feet (42.5 cubic meters) per second.

B. The United States shall be under no obligation to deliver, through the All-American Canal, more than 500,000 acre-feet (616,745,000 cubic meters) annually from the date Davis dam and reservoir are placed in operation until January 1, 1980 or more than 375,000 acre-feet (462,558,000 cubic meters) annually thereafter. If, by mutual agreement, any part of the quantities of water specified in this paragraph are delivered to Mexico at points on the land boundary otherwise than through the All-American Canal, the above quantities of water and the rates of deliveries set out under Schedule II of this Article shall be correspondingly diminished.

C. The United States shall have the option of delivering, at the point on the land boundary mentioned in subparagraph (c) of Article 11, any part or all of the water to be delivered at that point under Schedule II of this Article during the months of January, February, October, November and December of each year, from any source whatsoever, with the understanding that the total speci-

cúbicos (1 500 pies cúbicos) por segundo.

b) Durante los meses restantes del año, el gasto de entrega no será menor de 10.6 metros cúbicos (375 pies cúbicos), ni mayor de 42.5 metros cúbicos (1 500 pies cúbicos) por segundo.

B.—Los Estados Unidos no estarán obligados a entregar por el Canal Todo Americano más de 616 745 000 metros cúbicos (500 000 acres pies) anuales desde la fecha en que se ponga en operación la Presa Davis hasta el primero de enero de 1980, ni más de 462 558 000 metros cúbicos (375 000 acres pies) anuales después de esa última fecha. Si por acuerdo mutuo se entregare a México cualquiera parte de los volúmenes de agua especificados en este párrafo, en puntos de la línea terrestre internacional distintos del lugar en que se haga la entrega por el Canal Todo Americano, los gastos de entrega y los volúmenes de agua arriba mencionados y determinados en la Tabla II de este Artículo, serán disminuídos en las cantidades correspondientes.

C.—Durante los meses de enero, febrero, octubre, noviembre y diciembre de cada año, los Estados Unidos tendrá la opción de entregar, en el lugar de la línea divisoria internacional determinado en el inciso c) del Artículo 11, de cualquier fuente que sea, una parte o la totalidad del volumen de agua que deberá ser entregado en ese lugar de acuerdo con la Tabla II de este Artículo.

fied annual quantities to be delivered through the All-American Canal shall not be reduced because of the exercise of this option, unless such reduction be requested by the Mexican Section, provided that the exercise of this option shall not have the effect of increasing the total amount of scheduled water to be delivered to Mexico.

D. In any year in which there shall exist in the river water in excess of that necessary to satisfy the requirements in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) allotted to Mexico, the United States hereby declares its intention to cooperate with Mexico in attempting to supply additional quantities of water through the All-American Canal as such additional quantities are desired by Mexico, if such use of the Canal and facilities will not be detrimental to the United States, provided that the delivery of any additional quantities through the All-American Canal shall not have the effect of increasing the total scheduled deliveries to Mexico. Mexico hereby declares its intention to cooperate with the United States by attempting to curtail deliveries of water through the All-American Canal in years of limited supply, if such curtailment can be accomplished without detriment to Mexico and is necessary to allow full use of all available water supplies, provided that such curtailment shall not have the effect of reduc-

El ejercicio de la anterior opción, no producirá la reducción de los volúmenes totales anuales especificados para ser entregados por el Canal Todo Americano, a menos que dicha reducción sea solicitada por la Sección Mexicana, ni implicará el aumento del volumen total de agua tabulada que deberá entregarse a México.

D.—En cualquier año en que haya agua en el río en exceso de la necesaria para satisfacer las demandas en los Estados Unidos y el volumen garantizado de 1 850 234 000 metros cúbicos (1 500 000 acres pies) asignado a México, los Estados Unidos declaran su intención de cooperar con México procurando abastecer, por el Canal Todo Americano, los volúmenes adicionales de agua que México desee, si ese uso del Canal y de las obras respectivas no resultare perjudicial a los Estados Unidos; en la inteligencia de que la entrega de los volúmenes adicionales de agua por el Canal Todo Americano no significará el aumento del volumen total de entregas de agua tabulado para México. Por su parte, México declara su intención de cooperar con los Estados Unidos durante los años de abastecimiento limitado tratando de reducir las entregas de agua por el Canal Todo Americano si dicha reducción pudiere llevarse a efecto sin perjuicio para México y si fuere necesaria para hacer posible el aprovechamiento total del agua disponible; en la inteligencia de que dicha reducción no tendrá el

ing the total scheduled deliveries of water to Mexico.

E. In any year in which there shall exist in the river water in excess of that necessary to satisfy the requirements in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) allotted to Mexico, the United States Section shall so inform the Mexican Section in order that the latter may schedule such surplus water to complete a quantity up to a maximum of 1,700,000 acre-feet (2,096,931,000 cubic meters). In this circumstance the total quantities to be delivered under Schedules I and II shall be increased in proportion to their respective total quantities and the two schedules thus increased shall be subject to the same limitations as those established for each under paragraph A of this Article.

F. Subject to the limitations as to rates of deliveries and total quantities set out in Schedules I and II, Mexico shall have the right, upon thirty days notice in advance to the United States Section, to increase or decrease each monthly quantity prescribed by those schedules by not more than 20% of the monthly quantity.

G. The total quantity of water to be delivered under Schedule I of paragraph A of this Article may be increased in any year if the amount

efecto de disminuir el total de entregas de agua tabulado para México.

E.—En cualquier año en que haya agua en el río en exceso de la cantidad necesaria para satisfacer las demandas en los Estados Unidos y el volumen garantizado de 1 850 234 000 metros cúbicos (1 500 000 acres pies) asignado a México, la Sección de los Estados Unidos lo informará así a la Sección Mexicana con objeto de que esta última pueda tabular las aguas excedentes hasta completar un volumen máximo de 2 096 931 000 metros cúbicos (1 700 000 acres pies). En este caso los volúmenes totales que se entregarán de acuerdo con las Tablas números I y II serán aumentados en proporción a sus respectivos volúmenes totales y las dos tablas así incrementadas quedarán sujetas a las mismas limitaciones establecidas, para cada una de ellas, en el párrafo A de este Artículo.

F.—Con sujeción a las limitaciones fijadas en las Tablas I y II por lo que toca a los gastos de entrega y a los volúmenes totales, México tendrá el derecho de aumentar o disminuir, mediante avisos dados a la Sección de los Estados Unidos con 30 días de anticipación, cada uno de los volúmenes mensuales establecidos en esas tablas, en una cantidad que no exceda del 20% de su respectivo monto.

G.—En cualquier año, el volumen total de agua que deberá entregarse de acuerdo con la Tabla I a que se refiere el párrafo

to be delivered under Schedule II is correspondingly reduced and if the limitations as to rates of delivery under each schedule are correspondingly increased and reduced.

A de este Artículo, podrá ser aumentado, si el volumen de agua que se entregue de acuerdo con la Tabla II se redujere en el mismo volumen y si las limitaciones en cuanto a gastos de entrega estipulados para cada tabla se aumentan y se reducen correspondientemente.

IV—TIJUANA RIVER

IV—RIO TIJUANA

ARTICLE 16

ARTICULO 16

In order to improve existing uses and to assure any feasible further development, the Commission shall study and investigate, and shall submit to the two Governments for their approval:

(1) Recommendations for the equitable distribution between the two countries of the waters of the Tijuana River system;

(2) Plans for storage and flood control to promote and develop domestic, irrigation and other feasible uses of the waters of this system;

(3) An estimate of the cost of the proposed works and the manner in which the construction of such works or the cost thereof should be divided between the two Governments;

(4) Recommendations regarding the parts of the works to be operated and maintained by the Commission and the parts to be operated and maintained by each Section.

The two Governments through their respective Sections of the Commission shall construct such of the proposed works as are

Con el objeto de mejorar los usos existentes y de asegurar cualquier desarrollo futuro factible, la Comisión estudiará, investigará y someterá a los dos Gobiernos para su aprobación:

(1) Recomendaciones para la distribución equitativa entre los dos países de las aguas del sistema del río Tijuana;

(2) Proyectos de almacenamiento y control de avenidas a fin de fomentar y desarrollar los usos domésticos, de irrigación y demás usos factibles de las aguas de este sistema;

(3) Estimaciones de los costos de las obras propuestas y de la forma en que la construcción de dichas obras o los costos de las mismas deberán ser divididos entre los dos Gobiernos;

(4) Recomendaciones respecto de las partes de las obras que deberán ser operadas y mantenidas por la Comisión y las partes de las mismas que deberán ser operadas y mantenidas por cada Sección.

Los dos Gobiernos, cada uno por conducto de sus respectivas Secciones de la Comisión, construirán las obras que propongan

approved by both Governments, y aprueben ambos Gobiernos, se shall divide the work to be done or dividirán la cantidad de obra o su the cost thereof, and shall distrib- costo y se distribuirán las aguas ute between the two countries del sistema del río Tijuana en las the waters of the Tijuana River proporciones que ellos decidan. system in the proportions ap- Los dos Gobiernos convienen en proved by the two Governments. pagar por partes iguales el costo The two Governments agree to de la operación y mantenimiento pay in equal shares the costs of conjuntos de las obras, y cada joint operation and maintenance Gobierno conviene en pagar el of the works involved, and each costo de operación y manteni- Government agrees to pay the miento de las obras asignadas a cost of operation and maintenance él con dicho objeto. of the works assigned to it for such purpose.

V—GENERAL PROVISIONS

V—DISPOSICIONES GENERALES

ARTICLE 17

ARTICULO 17

The use of the channels of the international rivers for the discharge of flood or other excess waters shall be free and not subject to limitation by either country, and neither country shall have any claim against the other in respect of any damage caused by such use. Each Government agrees to furnish the other Government, as far in advance as practicable, any information it may have in regard to such extraordinary discharges of water from reservoirs and flood flows on its own territory as may produce floods on the territory of the other.

Each Government declares its intention to operate its storage dams in such manner, consistent with the normal operations of its hydraulic systems, as to avoid, as far as feasible, material damage in the territory of the other.

El uso del cauce de los ríos internacionales para la descarga de aguas de avenida o de otras excedentes será libre y sin limitación para los dos países y ninguno de ellos podrá presentar reclamaciones al otro por daños causados por dicho uso. Cada uno de los Gobiernos conviene en proporcionar al otro, con la mayor anticipación posible, la información que tenga sobre las salidas de agua extraordinarias de las presas y las crecientes de los ríos que existan en su propio territorio y que pudieran producir inundaciones en el territorio del otro.

Cada Gobierno declara su intención de operar sus presas de almacenamiento en tal forma, compatible con la operación normal de sus sistemas hidráulicos, que evite, en cuanto sea factible, que se produzcan daños materiales en el territorio del otro.

ARTICLE 18

ARTICULO 18

Public use of the water surface of lakes formed by international dams shall, when not harmful to the services rendered by such dams, be free and common to both countries, subject to the police regulations of each country in its territory, to such general regulations as may appropriately be prescribed and enforced by the Commission with the approval of the two Governments for the purpose of the application of the provisions of this Treaty, and to such regulations as may appropriately be prescribed and enforced for the same purpose by each Section of the Commission with respect to the areas and borders of such parts of those lakes as lie within its territory. Neither Government shall use for military purposes such water surface situated within the territory of the other country except by express agreement between the two Governments.

El uso civil de las superficies de las aguas de los lagos de las presas internacionales, cuando no sea en detrimento de los servicios a que están destinadas dichas presas, será libre y común para ambos países, sujeto a los reglamentos de policía de cada país en su territorio, a los reglamentos generales pertinentes que establezca y ponga en vigor la Comisión con la abropación de los dos Gobiernos con el fin de aplicar las disposiciones de este Tratado, y a los reglamentos pertinentes que establezca y ponga en vigor cada Sección de la Comisión, con el mismo fin, respecto a las áreas y orillas de aquellas partes de los lagos comprendidas dentro de su territorio. Ninguno de los dos Gobiernos podrá usar para fines militares las superficies de las aguas situadas dentro del territorio del otro país sin un convenio expreso entre los dos Gobiernos.

ARTICLE 19

ARTICULO 19

The two Governments shall conclude such special agreements as may be necessary to regulate the generation, development and disposition of electric power at international plants, including the necessary provisions for the export of electric current.

Los dos Gobiernos celebrarán los convenios especiales que sean necesarios para reglamentar la generación, el desarrollo y utilización de la energía eléctrica en las plantas internacionales y los requisitos para exportar la corriente eléctrica.

ARTICLE 20

ARTICULO 20

The two Governments shall, through their respective Sections of the Commission, carry out the

Los dos Gobiernos, por conducto de sus respectivas Secciones de la Comisión, llevarán a cabo los

construction of works allotted to them. For this purpose the respective Sections of the Commission may make use of any competent public or private agencies in accordance with the laws of the respective countries. With respect to such works as either Section of the Commission may have to execute on the territory of the other, it shall, in the execution of such works, observe the laws of the place where such works are located or carried out, with the exceptions hereinafter stated.

All materials, implements, equipment and repair parts intended for the construction, operation and maintenance of such works shall be exempt from import and export customs duties. The whole of the personnel employed either directly or indirectly on the construction, operation or maintenance of the works may pass freely from one country to the other for the purpose of going to and from the place of location of the works, without any immigration restrictions, passports or labor requirements. Each Government shall furnish, through its own Section of the Commission, convenient means of identification to the personnel employed by it on the aforesaid works and verification certificates covering all materials, implements, equipment and repair parts intended for the works.

Each Government shall assume responsibility for and shall adjust exclusively in accordance with its own laws all claims arising within its territory in connection with

trabajos de construcción que les sean asignados, empleando, para ese fin, los organismos públicos o privados competentes de acuerdo con sus propias leyes. Respecto a las obras que cualquiera de las Secciones de la Comisión deba ejecutar en el territorio de la otra, observará en la ejecución del trabajo las leyes del lugar donde se efectúe, con las excepciones que en seguida se consignan.

Todos los materiales, implementos, equipos y refacciones destinados a la construcción de las obras, su operación y mantenimiento, quedarán exceptuados de tributos fiscales de importación y exportación. Todo el personal empleado directa o indirectamente en la construcción, operación y mantenimiento de las obras, podrá pasar libremente de un país al otro con objeto de ir al lugar de su trabajo, o regresar de él, sin restricciones de inmigración, pasaporte, o requisitos de trabajo. Cada Gobierno proporcionará, por medio de su respectiva Sección de la Comisión, una identificación conveniente al personal empleado por la misma en las mencionadas labores y un certificado de verificación para los materiales, implementos, equipos y refacciones destinados a las obras.

En caso de que se presenten reclamaciones en conexión con la construcción, operación o mantenimiento de la totalidad o de cualquiera parte de las obras aquí

the construction, operation or maintenance of the whole or any part of the works herein agreed upon, or of any works which may, in the execution of this Treaty, be agreed upon in the future.

convenidas o que, en cumplimiento de este Tratado, se convenga en lo futuro, el Gobierno del país en cuyo territorio se hayan originado tales reclamaciones asumirá la responsabilidad de todas ellas y las ajustará de acuerdo con sus propias leyes exclusivamente.

ARTICLE 21

The construction of the international dams and the formation of artificial lakes shall produce no change in the fluvial international boundary, which shall continue to be governed by existing treaties and conventions in force between the two countries.

The Commission shall, with the approval of the two Governments, establish in the artificial lakes, by buoys or by other suitable markers, a practicable and convenient line to provide for the exercise of the jurisdiction and control vested by this Treaty in the Commission and its respective Sections. Such line shall also mark the boundary for the application of the customs and police regulations of each country.

ARTICULO 21

La construcción de las presas internacionales y la formación de sus lagos artificiales no producirá variación alguna de la línea divisoria internacional fluvial, la que continuará siendo la establecida en los tratados y convenciones vigentes entre los dos países.

La Comisión, con la aprobación de los dos Gobiernos, fijará en los lagos artificiales, por medio de boyas o por cualquier otro procedimiento que juzgue adecuado, una línea más sencilla y conveniente para los efectos prácticos del ejercicio de la jurisdicción y del control que a dicha Comisión y a cada una de sus Secciones les confiere y les impone este Tratado. La línea aludida marcará, igualmente, el límite para la aplicación de los respectivos reglamentos fiscales y de policía de los dos países.

ARTICLE 22

The provisions of the Convention between the United States and Mexico for the rectification of the Rio Grande (Rio Bravo) in the El Paso-Juárez Valley signed on February 1, 1933, [1] shall govern,

ARTICULO 22

Las estipulaciones de la Convención entre los Estados Unidos y México, del 1º de febrero de 1933, para la Rectificación del Río Bravo del Norte (Grande) en el Valle de Juárez-El Paso, en lo que

¹ [Treaty Series 864; 48 Stat. 1621.]

so far as delimitation of the boundary, distribution of jurisdiction and sovereignty, and relations with private owners are concerned, in any places where works for the artificial channeling, canalization or rectification of the Rio Grande (Rio Bravo) and the Colorado River are carried out.

se refiere a delimitación de fronteras, atribución de jurisdicción y soberanía y relaciones con propietarios particulares, regirán en los lugares donde se hagan las obras de encauzamiento; canalización o rectificación del río Bravo (Grande) y del río Colorado.

ARTICLE 23

ARTICULO 23

The two Governments recognize the public interest attached to the works required for the execution and performance of this Treaty and agree to acquire, in accordance with their respective domestic laws, any private property that may be required for the construction of the said works, including the main structures and their appurtenances and the construction materials therefor, and for the operation and maintenance thereof, at the cost of the country within which the property is situated, except as may be otherwise specifically provided in this Treaty.

Los dos Gobiernos reconocen la utilidad pública de las obras necesarias para la aplicación y cumplimiento de este Tratado y, por consiguiente, se comprometen a adquirir, de acuerdo con sus respectivas leyes internas, las propiedades privadas que se necesiten para la ejecución de las obras de referencia, comprendiendo, además de las obras principales, sus anexos y el aprovechamiento de materiales de construcción, y para la operación y mantenimiento de ellas, a expensas del país en donde se encuentren dichas propiedades, con las excepciones que expresamente establece este Tratado.

Each Section of the Commission shall determine the extent and location of any private property to be acquired within its own country and shall make the necessary requests upon its Government for the acquisition of such property.

Cada una de las Secciones de la Comisión fijará en su correspondiente país la extensión y ubicación de las propiedades privadas que deban ser adquiridas y hará a su respectivo Gobierno la solicitud pertinente para que las adquiera.

The Commission shall determine the cases in which it shall become necessary to locate works for the conveyance of water or electrical energy and for the servicing of any such works, for the benefit of either of the two countries, in the territory of the other

La Comisión determinará los casos en que sea necesario ubicar obras para la conducción de agua o energía eléctrica y para los servicios anexos a las mismas obras, en beneficio de cualquiera de los dos países, en territorio del otro, para que dichas obras puedan

country, in order that such works can be built pursuant to agreement between the two Governments. Such works shall be subject to the jurisdiction and supervision of the Section of the Commission within whose country they are located.

Construction of the works built in pursuance of the provisions of this Treaty shall not confer upon either of the two countries any rights either of property or of jurisdiction over any part whatsoever of the territory of the other. These works shall be part of the territory and be the property of the country wherein they are situated. However, in the case of any incidents occurring on works constructed across the limitrophe part of a river and with supports on both banks, the jurisdiction of each country shall be limited by the center line of such works, which shall be marked by the Commission, without thereby changing the international boundary.

Each Government shall retain through its own Section of the Commission and within the limits and to the extent necessary to effectuate the provisions of this Treaty, direct ownership, control and jurisdiction within its own territory and in accordance with its own laws, over all real property—including that within the channel of any river—rights of way and rights *in rem*, that it may be necessary to enter upon and occupy for the construction, operation or maintenance of all the works constructed, acquired or used pursuant to this Treaty.

construirse por acuerdo de los dos Gobiernos. Dichas obras quedarán bajo la jurisdicción y vigilancia de la Sección de la Comisión del país en que se encuentren.

La construcción de las obras, en cumplimiento de las disposiciones de este Tratado, no conferirá a ninguno de los dos países derechos ni de propiedad ni de jurisdicción sobre ninguna parte del territorio del otro. Las obras constituirán parte del territorio y pertenecerán al país dentro del cual se hallen. Sin embargo, para sucesos ocurridos sobre las obras construídas en los tramos limítrofes de los ríos y que se apoyen en ambas márgenes, la jurisdicción de cada país quedará limitada por el eje medio de dichas obras—el cual será marcado por la Comisión—sin que por eso varíe la línea divisoria internacional.

Cada Gobierno por medio de su respectiva Sección de la Comisión, conservará dentro de los límites y en la extensión necesaria para cumplir con las disposiciones de este Tratado, el dominio directo, control y jurisdicción dentro de su propio territorio y de acuerdo con sus leyes, sobre los inmuebles—incluyendo los que estén dentro del cauce del río—los derechos de vía y los derechos reales que sea necesario ocupar para la construcción, operación y mantenimiento de todas las obras que se construyan, adquieran o usen de acuerdo con este Tratado.

Furthermore, each Government shall similarly acquire and retain in its own possession the titles, control and jurisdiction over such works.

ARTICLE 24

ARTICULO 24

The International Boundary and Water Commission shall have, in addition to the powers and duties otherwise specifically provided in this Treaty, the following powers and duties:

(a) To initiate and carry on investigations and develop plans for the works which are to be constructed or established in accordance with the provisions of this and other treaties or agreements in force between the two Governments dealing with boundaries and international waters; to determine, as to such works, their location, size, kind and characteristic specifications; to estimate the cost of such works; and to recommend the division of such costs between the two Governments, the arrangements for the furnishing of the necessary funds, and the dates for the beginning of the works, to the extent that the matters mentioned in this subparagraph are not otherwise covered by specific provisions of this or any other Treaty.

(b) To construct the works agreed upon or to supervise their construction and to operate and maintain such works or to supervise their operation and maintenance, in accordance with the respective domestic laws of each

La Comisión Internacional de Límites y Aguas tendrá las siguientes facultades y obligaciones, en adición a las establecidas específicamente en este Tratado:

a) Iniciar, llevar a cabo las investigaciones y desarrollar los proyectos de las obras que deberán ser construídas o establecidas de acuerdo con las estipulaciones de éste y de los demás tratados y convenios vigentes entre los dos Gobiernos, relativos a límites y aguas internacionales; determinar la localización, magnitud, calidad y especificaciones características de dichas obras; estimar su costo; y recomendar la forma en que éste deberá repartirse entre los dos Gobiernos y los arreglos para proveer los fondos necesarios, y las fechas en que deberán principiarse las obras, en todo lo que las cuestiones mencionadas en este inciso no estén reglamentadas en forma distinta por disposiciones específicas de éste o de algún otro tratado.

b) Construir o vigilar la construcción y después operar y mantener o vigilar la operación y mantenimiento de las obras convenidas, con sujeción a las respectivas leyes de cada país. Cada Sección tendrá jurisdicción sobre

country. Each Section shall have, las obras construídas exclusiva-
to the extent necessary to give mente en el territorio de su país,
effect to the provisions of this hasta el límite necesario para cum-
Treaty, jurisdiction over the works plir con las disposiciones de este
constructed exclusively in the Tratado y siempre que dichas
territory of its country whenever such obras tengan conexión con las
works shall be connected with or estipulaciones aludidas o alguna
shall directly affect the execution influencia en la ejecución de las
of the provisions of this Treaty. mismas.

(c) In general to exercise and discharge the specific powers and duties entrusted to the Commission by this and other treaties and agreements in force between the two countries, and to carry into execution and prevent the violation of the provisions of those treaties and agreements. The authorities of each country shall aid and support the exercise and discharge of these powers and duties, and each Commissioner shall invoke when necessary the jurisdiction of the courts or other appropriate agencies of his country to aid in the execution and enforcement of these powers and duties.

(c) En general, ejercer las facultades y cumplir con las obligaciones específicas impuestas a la Comisión por éste y otros Tratados y Convenios vigentes entre los dos países, ejecutar sus disposiciones y evitar la violación de las mismas. Las autoridades de cada país ayudarán y apoyarán a la Comisión en el ejercicio de estas facultades, pudiendo cada Comisionado requerir, siempre que sea necesario, el imperio de los tribunales o de otras dependencias gubernamentales competentes de su país, con objeto de obtener ayuda en la ejecución y cumplimiento de estas facultades y obligaciones.

(d) To settle all differences that may arise between the two Governments with respect to the interpretation or application of this Treaty, subject to the approval of the two Governments. In any case in which the Commissioners do not reach an agreement, they shall so inform their respective governments reporting their respective opinions and the grounds therefor and the points upon which they differ, for discussion and adjustment of the difference through diplomatic channels and for appli-

(d) Resolver, con la aprobación de los dos Gobiernos, todas las diferencias que se susciten entre ellos sobre la interpretación o la aplicación del presente Tratado. Si los Comisionados no llegaren a un acuerdo, darán aviso a su Gobierno, expresando sus opiniones respectivas, los fundamentos de su decisión y los puntos en que difieran, para la discusión y ajuste de la discrepancia por la vía diplomática, o con objeto de que se apliquen, en su caso, los convenios generales o especiales celebrados

ation where proper of the general or special agreements which the two Governments have concluded for the settlement of controversies.

(e) To furnish the information requested of the Commissioners jointly by the two Governments on matters within their jurisdiction. In the event that the request is made by one Government alone, the Commissioner of the other Government must have the express authorization of his Government in order to comply with such request.

(f) The Commission shall construct, operate and maintain upon the limitrophe parts of the international streams, and each Section shall severally construct, operate and maintain upon the parts of the international streams and their tributaries within the boundaries of its own country, such stream gaging stations as may be needed to provide the hydrographic data necessary or convenient for the proper functioning of this Treaty. The data so obtained shall be compiled and periodically exchanged between the two Sections.

(g) The Commission shall submit annually a joint report to the two Governments on the matters in its charge. The Commission shall also submit to the two Governments joint reports on general or any particular matters at such other times as it may deem necessary or as may be requested by the two Governments.

entre los mismos Gobiernos para resolución de controversias.

e) Proporcionar las informaciones que los dos Gobiernos soliciten conjuntamente de los Comisionados sobre asuntos de su jurisdicción. En caso de que la solicitud sea hecha por un solo Gobierno, el Comisionado del otro, necesitará la autorización expresa de su Gobierno para atenderla.

f) La Comisión construirá, operará y mantendrá en los tramos limítrofes de las corrientes internacionales, y cada Sección construirá, operará y mantendrá separadamente en las porciones de las corrientes internacionales y de sus afluentes que queden dentro de los límites de su propio país, las estaciones de aforo que sean necesarias para obtener los datos hidrográficos necesarios o convenientes para el funcionamiento adecuado de este Tratado. Los datos así obtenidos serán recopilados e intercambiados periódicamente entre las dos Secciones.

g) La Comisión someterá anualmente a los dos Gobiernos un informe conjunto sobre los asuntos que estén a su cargo. Asimismo, la Comisión someterá a los dos Gobiernos los informes conjuntos, generales o sobre cualquier asunto especial, cuando lo considere necesario o lo soliciten los dos Gobiernos.

ARTICLE 25

ARTICULO 25

Except as otherwise specifically provided in this Treaty, Articles III and VII of the Convention of March 1, 1889 shall govern the proceedings of the Commission in carrying out the provisions of this Treaty. Supplementary thereto the Commission shall establish a body of rules and regulations to govern its procedure, consistent with the provisions of this Treaty and of Articles III and VII of the Convention of March 1, 1889 and subject to the approval of both Governments.

Decisions of the Commission shall be recorded in the form of Minutes done in duplicate in the English and Spanish languages, signed by each Commissioner and attested by the Secretaries, and copies thereof forwarded to each Government within three days after being signed. Except where the specific approval of the two Governments is required by any provision of this Treaty, if one of the Governments fails to communicate to the Commission its approval or disapproval of a decision of the Commission within thirty days reckoned from the date of the Minute in which it shall have been pronounced, the Minute in question and the decisions which it contains shall be considered to be approved by that Government. The Commissioners, within the limits of their respective jurisdictions, shall execute the decisions of the Commission that are approved by both Governments.

Con las excepciones específicamente establecidas en este Tratado, los procedimientos de la Comisión, para la ejecución de las estipulaciones del mismo, se regirán por los Artículos III y VII de la Convención de primero de marzo de 1889. En adición y en concordancia con las disposiciones citadas y con las estipulaciones de este Tratado, la Comisión establecerá las normas y reglamentos que regirán, una vez aprobados por ambos Gobiernos, los procedimientos de la propia Comisión.

Los acuerdos de la Comisión se harán constar en forma de actas, levantadas por duplicado, en inglés y en español, firmadas por ambos Comisionados y bajo la fe de los Secretarios, una copia de cada una de las cuales será enviada a cada Gobierno dentro de los tres días siguientes a su firma. Excepto en los casos en que, de acuerdo con las disposiciones de este Tratado, se requiera específicamente la aprobación de los dos Gobiernos, si un Gobierno deja de comunicar a la Comisión su acuerdo aprobatorio o reprobatorio, dentro del término de 30 días contados a partir de la fecha que tenga el acta, se darán por aprobadas ésta y las resoluciones en ella contenidas. Los Comisionados ejecutarán las resoluciones de la Comisión, aprobadas por ambos Gobiernos, dentro de los límites de sus respectivas jurisdicciones.

If either Government disproves a decision of the Commission the two Governments shall take cognizance of the matter, and if an agreement regarding such matter is reached between the two Governments, the agreement shall be communicated to the Commissioners, who shall take such further proceedings as may be necessary to carry out such agreement.

En los casos en que cualquiera de los dos Gobiernos desaprobe un acuerdo de la Comisión, ambos Gobiernos tomarán conocimiento del asunto y, si llegaren a un acuerdo, éste se comunicará a los Comisionados con objeto de que ellos sigan los procedimientos necesarios para llevar a cabo lo convenido.

VI—TRANSITORY PROVISIONS

VI—DISPOSICIONES TRANSITORIAS

ARTICLE 26

ARTÍCULO 26

During a period of eight years from the date of the entry into force of this Treaty, or until the beginning of operation of the lowest major international reservoir on the Rio Grande (Rio Bravo), should it be placed in operation prior to the expiration of said period, Mexico will cooperate with the United States to relieve, in times of drought, any lack of water needed to irrigate the lands now under irrigation in the Lower Rio Grande Valley in the United States, and for this purpose Mexico will release water from El Azúcar reservoir on the San Juan River and allow that water to run through its system of canals back into the San Juan River in order that the United States may divert such water from the Rio Grande (Rio Bravo). Such releases shall be made on condition that they do not affect the Mexican irrigation system, provided that Mexico shall, in any event, except in cases of extraordinary drought or serious

Durante un lapso de ocho años contados a partir de la fecha en que principie la vigencia de este Tratado, o hasta que sea puesta en operación la presa inferior principal internacional de almacenamiento en el río Bravo (Grande), si se pone en operación antes de aquel plazo, México cooperará con los Estados Unidos para aliviar, en períodos de escasez, la falta del agua necesaria para regar las tierras que actualmente se riegan en el valle del Bajo Río Bravo (Grande), en los Estados Unidos, y, al efecto, México extraerá agua de la presa de El Azúcar en el Río San Juan y la dejará correr por medio de su sistema de canales al río San Juan, con objeto de que los Estados Unidos puedan derivarla del río Bravo (Grande). Dichas extracciones se harán siempre que no afecten la operación del sistema de riego mexicano; sin embargo, México se obliga, salvo casos de escasez extraordinaria o de serio accidente a sus obras

accident to its hydraulic works, re- hidráulicas, a dejar salir y a
 lease and make available to the abastecer los volúmenes pedidos
 United States for its use the por los Estados Unidos, para su
 quantities requested, under the uso, bajo las siguientes condi-
 following conditions: that during ciones: que en los ocho años cita-
 the said eight years there shall be dos se abastecerá un total de
 made available a total of 160,000 197 358 000 metros cúbicos
 acre-feet (197,358,000 cubic me- (160 000 acres pies) y, en un año
 ters) and up to 40,000 acre-feet determinado, un volumen hasta
 (49,340,000 cubic meters) in any de 49 340 000 metros cúbicos
 one year; that the water shall be (40 000 acres pies); que el agua se
 made available as requested at abastecerá a medida que sea solici-
 rates not exceeding 750 cubic feet tada y en gastos que no excedan de
 (21.2 cubic meters) per^a second; 21.2 metros cúbicos (750 pies
 that when the rates of flow re- cúbicos) por segundo; que cuando
 quested and made available have los gastos solicitados y abastecidos
 been more than 500 cubic feet excedan de 14.2 metros cúbicos
 (14.2 cubic meters) per second the (500 pies cúbicos) por segundo, el
 period of release shall not extend período de extracción no se pro-
 beyond fifteen consecutive days; longará por más de 15 días con-
 and that at least thirty days must secutivos; y que deberán trans-
 elapse between any two periods of currir cuando menos treinta días
 release during which rates of flow entre dos extracciones en el caso de
 in excess of 500 cubic feet (14.2 que se hayan abastecido solici-
 cubic meters) per second have been tudes para gastos mayores de 14.2
 requested and made available. In metros cúbicos (500 pies cúbicos)
 addition to the guaranteed flow, por segundo. Además de los volú-
 Mexico shall release from El menes garantizados, México de-
 Azúcar reservoir and conduct jará salir de la presa de El Azúcar
 through its canal system and the y conducirá por su sistema de
 San Juan River, for use in the canales y el río San Juan, para su
 United States during periods of uso en los Estados Unidos, du-
 drought and after satisfying the rante los períodos de sequía y
 needs of Mexican users, any excess después de haber satisfecho todos
 water that does not in the opinion los requerimientos de los usuarios
 of the Mexican Section have to be mexicanos, aquellas aguas exce-
 stored and that may be needed for dentes que, a juicio de la Sección
 the irrigation of lands which were Mexicana no necesiten almace-
 under irrigation during the year narse, para ayudar al riego de las
 1943 in the Lower Río Grande tierras que, en el año de 1943, se
 Valley in the United States. regaban, en el citado valle del
 Bajo Río Bravo (Grande) en los
 Estados Unidos.

ARTICLE 27

ARTICULO 27

The provisions of Article 10, 11, and 15 of this Treaty shall not be applied during a period of five years from the date of the entry into force of this Treaty, or until the Davis dam and the major Mexican diversion structure on the Colorado River are placed in operation, should these works be placed in operation prior to the expiration of said period. In the meantime Mexico may construct and operate at its expense a temporary diversion structure in the bed of the Colorado River in territory of the United States for the purpose of diverting water into the Alamo Canal, provided that the plans for such structure and the construction and operation thereof shall be subject to the approval of the United States Section. During this period of time the United States will make available in the river at such diversion structure river flow not currently required in the United States, and the United States will cooperate with Mexico to the end that the latter may satisfy its irrigation requirements within the limits of those requirements for lands irrigated in Mexico from the Colorado River during the year 1943.

Durante un lapso de cinco años, contados a partir de la fecha en que principie la vigencia de este Tratado, o hasta que puestas en operación la Presa Davis y la estructura mexicana principal de derivación en el río Colorado, si se ponen en operación estas obras antes de aquel plazo, no se aplicarán los Artículos 10, 11 y 15 de este Tratado y, mientras tanto, México podrá construir y operar a sus expensas, en territorio de los Estados Unidos, una estructura de derivación provisional en el lecho del río Colorado, destinada a derivar agua hacia el canal del Alamo; en la inteligencia de que los planos para dicha estructura, su construcción y operación quedarán sujetos a la aprobación de la Sección de los Estados Unidos. Durante el mismo período los Estados Unidos pondrán a disposición de México en el lugar del río en que se construya dicha estructura, los caudales que a la sazón no se requieran en los Estados Unidos y ofrecen cooperar con México a fin de que éste pueda satisfacer sus necesidades de riego, dentro de los límites que tuvieron esas necesidades en las tierras regadas en México con aguas del río Colorado en el año de 1943.

VII—FINAL PROVISIONS

VII—DISPOSICIONES FINALES

ARTICLE 28

ARTICULO 28

This Treaty shall be ratified and the ratifications thereof shall be exchanged in Washington. It shall enter into force on the day

Este Tratado será ratificado y las ratificaciones canjeadas en la ciudad de Washington. Entrará en vigor el día del canje de ratifi-

of the exchange of ratifications and shall continue in force until terminated by another Treaty concluded for that purpose between the two Governments.

In witness whereof the respective Plenipotentiaries have signed this Treaty and have hereunto affixed their seals.

Done in duplicate in the English and Spanish languages, in Washington on this third day of February, 1944.

caciones y regirá indefinidamente hasta que sea terminado por otro Tratado concluido al efecto entre los dos Gobiernos.

En testimonio de lo cual los respectivos Plenipotenciarios han firmado este Tratado y agregado sus sellos.

Hecho en duplicado, en los idiomas inglés y español, en la Ciudad de Wáshington, el día tres de febrero de 1944.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

CORDELL HULL	[SEAL]
GEORGE S. MESSERSMITH	[SEAL]
LAWRENCE M. LAWSON.	[SEAL]

FOR THE GOVERNMENT OF THE UNITED MEXICAN STATES:

F. CASTILLO NÁJERA	[SEAL]
RAFAEL FERNÁNDEZ MACGREGOR	[SEAL]

PROTOCOL

PROTOCOLO

The Government of the United States of America and the Government of the United Mexican States agree and understand that:

Wherever, by virtue of the provisions of the Treaty between the United States of America and the United Mexican States, signed in Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, specific functions are imposed on, or exclusive jurisdiction is vested in, either of the Sections of the International Boundary and Water

El Gobierno de los Estados Unidos de América y el Gobierno de los Estados Unidos Mexicanos convienen y tienen entendido que:

Siempre que en virtud de lo dispuesto en el Tratado entre los Estados Unidos de América y los Estados Unidos Mexicanos, firmado en Wáshington el 3 de febrero de 1944, relativo al aprovechamiento de las aguas de los ríos Colorado y Tijuana; y del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México, se impongan funciones específicas o se confiera jurisdicción exclusiva a cualquiera de las Secciones de la Comisión Inter-

Commission, which involve the construction or use of works for storage or conveyance of water, flood control, stream gaging, or for any other purpose, which are situated wholly within the territory of the country of that Section, and which are to be used only partly for the performance of treaty provisions, such jurisdiction shall be exercised, and such functions, including the construction, operation and maintenance of the said works, shall be performed and carried out by the Federal agencies of that country which now or hereafter may be authorized by domestic law to construct, or to operate and maintain, such works. Such functions or jurisdictions shall be exercised in conformity with the provisions of the Treaty and in cooperation with the respective Section of the Commission, to the end that all international obligations and functions may be coordinated and fulfilled.

The works to be constructed or used on or along the boundary, and those to be constructed or used exclusively for the discharge of treaty stipulations, shall be under the jurisdiction of the Commission or of the respective Section, in accordance with the provisions of the Treaty. In carrying out the construction of such works the Sections of the Commission may utilize the services of public or private organizations in accord-

nacional de Límites y Aguas, que entrañen la construcción o uso de obras de almacenamiento o de conducción de agua, de control de avenidas, de aforos o para cualquier otro objeto, que estén situadas totalmente dentro del territorio del país al que corresponda esa Sección y que se usen solamente en parte para cumplir con las disposiciones del Tratado, dicha jurisdicción la ejercerán y las referidas funciones, incluso la construcción, operación y conservación de las obras de que se trata, las desempeñarán y realizarán las dependencias federales de ese mismo país, que estén facultadas, en virtud de sus leyes internas actualmente en vigor o que en lo futuro se dicten, para construir, operar y conservar dichas obras. Las citadas funciones y jurisdicciones se ejercerán observando las disposiciones del Tratado y en cooperación con la respectiva Sección de la Comisión, con el objeto de que todas las obligaciones y funciones internacionales puedan coordinarse y cumplirse.

Las obras que se construyan o usen en la línea divisoria o a lo largo de ella, así como las que se construyan o usen exclusivamente para cumplir con las estipulaciones del Tratado, quedarán bajo la jurisdicción de la Comisión o de la Sección correspondiente de acuerdo con lo dispuesto por el mismo. Para llevar a cabo la construcción de dichas obras, las Secciones de la Comisión podrán utilizar los servicios de organismos

ance with the laws of their respective countries. públicos o privados, de acuerdo con las leyes de sus respectivos países.

This Protocol, which shall be regarded as an integral part of the aforementioned Treaty signed in Washington on February 3, 1944, shall be ratified and the ratifications thereof shall be exchanged in Washington. This Protocol shall be effective beginning with the day of the entry into force of the Treaty and shall continue effective so long as the Treaty remains in force. Este Protocolo, que se considerará parte integral del susodicho Tratado firmado en Washington el 3 de febrero de 1944, será ratificado y las ratificaciones canjeadas en Washington. Este Protocolo entrará en vigor a partir del día en que empiece a regir el Tratado y continuará en vigor por todo el tiempo que esté vigente éste.

In witness whereof the respective Plenipotentiaries have signed this Protocol and have hereunto affixed their seals. En testimonio de lo cual los respectivos Plenipotenciarios han firmado este Protocolo y le han agregado sus sellos.

Done in duplicate, in the English and Spanish languages, in Washington, this fourteenth day of November, 1944. Hecho en duplicado, en los idiomas inglés y español, en Washington, el día catorce de noviembre de 1944.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

E R STETTINIUS Jr [SEAL]
Acting Secretary of State
of the United States of America

FOR THE GOVERNMENT OF THE UNITED MEXICAN STATES:

F. CASTILLO NÁJERA [SEAL]
Ambassador Extraordinary and Plenipotentiary
of the United Mexican States in Washington

AND WHEREAS the Senate of the United States of America by their Resolution of April 18, 1945, two-thirds of the Senators present concurring therein, did advise and consent to the ratification of the said treaty and protocol, subject to certain understandings, the text of which Resolution is word for word as follows:

“Resolved (two-thirds of the Senators present concurring therein), That the Senate advise and consent to the ratification of Executive A, Seventy-eighth Congress, second session, a treaty between the United States of America and the United Mexican States, signed at Washington on February 3, 1944, relating to the utilization of

the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, and Executive H, Seventy-eighth Congress, second session, a protocol, signed at Washington on November 14, 1944, supplementary to the treaty, subject to the following understandings, and that these understandings will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will in effect form a part of the treaty:

“(a) That no commitment for works to be built by the United States in whole or in part at its expense, or for expenditures by the United States, other than those specifically provided for in the treaty, shall be made by the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, or any other officer or employee of the United States, without prior approval of the Congress of the United States. It is understood that the works to be built by the United States, in whole or in part at its expense, and the expenditures by the United States, which are specifically provided for in the treaty, are as follows:

“1. The joint construction of the three storage and flood-control dams on the Rio Grande below Fort Quitman, Texas, mentioned in article 5 of the treaty.

“2. The dams and other joint works required for the diversion of the flow of the Rio Grande mentioned in subparagraph II of article 5 of the treaty, it being understood that the commitment of the United States to make expenditures under this subparagraph is limited to its share of the cost of one dam and works appurtenant thereto.

“3. Stream-gaging stations which may be required under the provisions of section (j) of article 9 of the treaty and of subparagraph (d) of article 12 of the treaty.

“4. The Davis Dam and Reservoir mentioned in subparagraph (b) of article 12 of the treaty.

“5. The joint flood-control investigations, preparation of plans, and reports on the Rio Grande below Fort Quitman required by the provisions of article 6 of the treaty.

“6. The joint flood-control investigations, preparations of plans, and reports on the lower Colorado River between the Imperial Dam and the Gulf of California required by article 13 of the treaty.

“7. The joint investigations, preparation of plans, and reports on the establishment of hydroelectric plants at the international dams on the Rio Grande below Fort Quitman provided for by article 7 of the treaty.

"8. The studies, investigations, preparation of plans, recommendations, reports, and other matters dealing with the Tijuana River system provided for by the first paragraph (including the numbered subparagraphs) of article 16 of the treaty.

"(b) Insofar as they affect persons and property in the territorial limits of the United States, the powers and functions of the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, and any other officer or employee of the United States, shall be subject to the statutory and constitutional controls and processes. Nothing contained in the treaty or protocol shall be construed as impairing the power of the Congress of the United States to define the terms of office of members of the United States Section of the International Boundary and Water Commission or to provide for their appointment by the President by and with the advice and consent of the Senate or otherwise.

"(c) That nothing contained in the treaty or protocol shall be construed as authorizing the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, or the United States Section of said Commission, directly or indirectly to alter or control the distribution of water to users within the territorial limits of any of the individual States.

"(d) That 'international dam or reservoir' means a dam or reservoir built across the common boundary between the two countries.

"(e) That the words 'international plants', appearing in article 19, mean only hydroelectric generating plants in connection with dams built across the common boundary between the two countries.

"(f) That the words 'electric current', appearing in article 19, mean hydroelectric power generated at an international plant.

"(g) That by the use of the words 'The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary * * * ' in the first sentence of the fifth paragraph of article 2, is meant: 'The jurisdiction of the Commission shall extend and be limited to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary * * * '.

"(h) The word 'agreements' whenever used in subparagraphs (a), (c), and (d) of article 24 of the treaty shall refer only to agree-

ments entered into pursuant to and subject to the provisions and limitations of treaties in force between the United States of America and the United Mexican States.

“(i) The word ‘disputes’ in the second paragraph of article 2 shall have reference only to disputes between the Governments of the United States of America and the United Mexican States.

“(j) First, that the one million seven hundred thousand acre-feet specified in subparagraph (b) of article 10 includes and is not in addition to the one million five hundred thousand acre-feet, the delivery of which to Mexico is guaranteed in subparagraph (a) of article 10; second, that the one million five hundred thousand acre-feet specified in three places in said subparagraph (b) is identical with the one million five hundred thousand acre-feet specified in said subparagraph (a); third, that any use by Mexico under said subparagraph (b) of quantities of water arriving at the Mexican points of diversion in excess of said one million five hundred thousand acre-feet shall not give rise to any future claim of right by Mexico in excess of said guaranteed quantity of one million five hundred thousand acre-feet of water.

“(k) The United States recognizes a duty to require that the protective structures to be constructed under article 12, paragraph (a), of this treaty, are so constructed, operated, and maintained as to adequately prevent damage to property and lands within the United States from the construction and operation of the diversion structure referred to in said paragraph.”

AND WHEREAS the said treaty and protocol were duly ratified by the President of the United States of America on November 1, 1945, in pursuance of the aforesaid advice and consent of the Senate and subject to the aforesaid understandings on the part of the United States of America;

AND WHEREAS the said treaty and protocol were duly ratified by the President of the United Mexican States on October 16, 1945, in pursuance and according to the terms of a Decree of September 27, 1945 of the Senate of the United Mexican States approving the said treaty and protocol and approving the said understandings on the part of the United States of America in all that refers to the rights and obligations between the parties;

AND WHEREAS it is provided in Article 28 of the said treaty that the treaty shall enter into force on the day of the exchange of ratifications;

AND WHEREAS it is provided in the said protocol that the protocol shall be regarded as an integral part of the said treaty and shall be effective beginning with the day of the entry into force of the said treaty;

AND WHEREAS the respective instruments of ratification of the said treaty and protocol were duly exchanged, and a protocol of exchange of

instruments of ratification was signed in the English and Spanish languages, by the respective Plenipotentiaries of the United States of America and the United Mexican States on November 8, 1945, the English text of which protocol of exchange of instruments of ratification reads in part as follows:

“The ratification by the Government of the United States of America of the treaty and protocol aforesaid recites in their entirety the understandings contained in the resolution of April 18, 1945 of the Senate of the United States of America advising and consenting to ratification, the text of which resolution was communicated by the Government of the United States of America to the Government of the United Mexican States. The ratification by the Government of the United Mexican States of the treaty and protocol aforesaid is effected, in the terms of its instrument of ratification, in conformity to the Decree of September 27, 1945 of the Senate of the United Mexican States approving the treaty and protocol aforesaid and approving also the aforesaid understandings on the part of the United States of America in all that refers to the rights and obligations between both parties, and in which the Mexican Senate refrains from considering, because it is not competent to pass judgment upon them, the provisions which relate exclusively to the internal application of the treaty within the United States of America and by its own authorities, and which are included in the understandings set forth under the letter (a) in its first part to the period preceding the words ‘It is understood’ and under the letters (b) and (c).”

NOW, THEREFORE, be it known that I, Harry S. Truman, President of the United States of America, do hereby proclaim and make public the said treaty and the said protocol supplementary thereto, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith, on and from the eighth day of November, one thousand nine hundred forty-five, by the United States of America and by the citizens of the United States of America and all other persons subject to the jurisdiction thereof.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the city of Washington this twenty-seventh day of November in the year of our Lord one thousand nine hundred [SEAL] forty-five and of the Independence of the United States of America the one hundred seventieth.

HARRY S TRUMAN

By the President:

JAMES F BYRNES

Secretary of State

Appendix 1406

THE MEXICAN WATER TREATY:

EXTRACT FROM DEPARTMENT OF STATE BULLETIN, NOVEMBER 11, 1945, ANNOUNCING ENTRY INTO FORCE NOVEMBER 8, 1945

[From the Department of State Bulletin]

WATER TREATY AND PROTOCOL WITH MEXICO

ENTRY INTO FORCE

[Released to the press November 8]

At 12:30 p. m. today, November 8, 1945, the Secretary of State, and Antonio Espinosa de los Monteros, Mexican Ambassador in Washington, exchanged the instruments of ratification of the treaty and supplementary protocol between the United States and Mexico relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico. The treaty was signed in Washington on February 3, 1944. The supplementary protocol was signed in Washington on November 14, 1944.

The Secretary of State and the Mexican Ambassador signed a protocol of exchange of instruments of ratification attesting to the fact that the exchange had been effected. Before signing this document, each of them made a brief statement emphasizing the importance of the treaty as a basis for improving relations between the two countries.

The President of the United States signed his instrument of ratification on November 1, 1945, the Senate having given its advice and consent thereto by resolution of April 18, 1945. The Mexican instrument of ratification was signed by the President of Mexico on October 16, 1945, in accordance with a Decree of September 27, 1945 of the Mexican Senate.

It is provided in article 28 of the treaty that it shall enter into force on the day of the exchange of ratifications. The supplementary protocol, by its own terms, is an integral part of the treaty. Consequently, the treaty and protocol entered into force on November 8, 1945, when the exchange of instruments of ratifications was effected.

[Balance of press release omitted.]

Appendix 1407

INTERDEPARTMENTAL AGREEMENT

(State and Interior Departments)

June 18, 1945

MEMORANDUM OF UNDERSTANDING AS TO FUNCTIONS AND JURISDICTION OF AGENCIES OF THE UNITED STATES IN RELATION TO THE COLORADO AND TIJUANA RIVERS AND THE RIO GRANDE BELOW FORT QUITMAN, TEXAS UNDER WATER TREATY SIGNED AT WASHINGTON, FEBRUARY 3, 1944

This memorandum of understanding made this 14th day of February, 1945 between the Department of State and the United States Section, International Boundary and Water Commission, United States and Mexico (hereinafter referred to as the "United States Section"), represented by the Secretary of State, and the Department of the Interior, represented by the Secretary of the Interior, pursuant to the provisions of the Treaty of February 3, 1944 between the United States and Mexico relating to the Colorado and Tijuana Rivers and the Rio Grande below Fort Quitman, Texas (hereinafter referred to as the "treaty"); the Protocol between the two Governments supplementary to the treaty (hereinafter referred to as the "protocol") dated November 14, 1944; and existing domestic law of the United States.

WITNESSETH, THAT,

a. Whereas, the treaty establishes certain reciprocal rights and obligations of the two nations and requires for its execution both joint and independent determinations and actions on the part of the two Governments as represented, in the case of the United States, by the Department of State and in the case of Mexico by the Ministry of Foreign Relations, or acting through their respective Sections of the International Boundary and Water Commission; and

b. Whereas, the use of works both of an international and domestic character will be necessarily involved in the discharge of various treaty functions; and

c. Whereas, the protocol provides that the said Governments agree and understand that:

Wherever, by virtue of the provisions of the Treaty between the United States of America and the United Mexican States, signed in Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of

the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, specific functions are imposed on, or exclusive jurisdiction is vested in, either of the Sections of the International Boundary and Water Commission, which involve the construction or use of works for storage or conveyance of water, flood control, stream gaging, or for any other purpose, which are situated wholly within the Territory of the country of that Section, and which are to be used only partly for the performance of treaty provisions, such jurisdiction shall be exercised, and such functions, including the construction, operation and maintenance of the said works, shall be performed and carried out by the Federal agencies of that country which now or hereafter may be authorized by domestic law to construct or to operate and maintain, such works. Such functions or jurisdictions shall be exercised in conformity with the provisions of the Treaty and in cooperation with the respective Section of the Commission, to the end that all international obligations and functions may be coordinated and fulfilled.

The works to be constructed or used on or along the boundary, and those to be constructed or used exclusively for the discharge of treaty stipulations, shall be under the jurisdiction of the Commission or of the respective Section, in accordance with the provisions of the Treaty. In carrying out the construction of such works the Sections of the Commission may utilize the services of public or private organizations in accordance with the laws of their respective countries.

and which protocol is by the terms thereof made an integral part of the treaty, to be effective on the day of the entry into force of the treaty and to continue effective so long as the treaty remains in force; and

d. Whereas, by virtue of the treaty and the protocol, the Secretary of State and the United States Section are vested with general jurisdiction over the performance of treaty functions, in so far as the rights and obligations of the United States are concerned, and are likewise vested, and from time to time in the future may be further vested, with jurisdiction over various works, constructed and to be constructed, on or along the boundary between the United States and Mexico, and over certain matters and problems of an international character arising on or affecting the said boundary, by virtue of treaties in force between the two nations, and by virtue of Acts of Congress; and

e. Whereas, the Secretary of the Interior, pursuant to the Reclamation Law and other Acts of Congress pertaining to the investigation, conservation and utilization of the water resources of the United States, has been, and from time to time in the future may be au-

thorized to construct and to operate and maintain certain facilities wholly in the United States for the storage and conveyance of water, flood control, production of hydroelectric power and for other purposes, which facilities primarily pertain to the functions of the Department of the Interior but, some of which facilities, in consequence of the treaty, will in part also pertain to treaty functions; and

f. Whereas, the Bureau of Reclamation (hereinafter referred to as the "Bureau") is an agency of the Department of the Interior which aids and assists the Secretary of the Interior in the performance of his responsibilities and functions pursuant to the Reclamation Law and other Acts of Congress pertaining to the investigation, conservation and utilization of the water resources of the United States; and

g. Whereas, in order that all international and domestic obligations and functions prescribed by the treaty and domestic law may be coordinated and fulfilled in the manner contemplated by the protocol, it is mutually desirable to define and set forth the specific jurisdiction and functions to be exercised by the Department of State and the United States Section, and the Department of the Interior and its agency, the Bureau, with respect to the operation and maintenance of such existing works as may be necessary in whole or in part to the fulfillment of treaty provisions, or which may be constructed, operated and maintained pursuant thereto, and with respect to the gathering and collation of certain information and data and the making of certain findings of fact and recommendations which may become necessary or desirable in the fulfillment of treaty provisions; and to define the cooperation between the said Interior agency and the United States Section as contemplated by the protocol in the performance of functions under their respective jurisdiction;

Now, therefore, it is agreed as follows:

1. The principles enunciated in this memorandum and in the protocol and hereinabove in recital *c* set forth shall control with respect to all facilities or works which now exist and which are to be used in whole or in part in the discharge of treaty functions, or which may hereafter be constructed pursuant to the treaty in relation to the Rio Grande below Fort Quitman, Texas, and the Colorado and Tijuana Rivers, even though such facilities or works may not be herein specifically enumerated. For the purpose of defining the respective jurisdiction and function of the Department of State, the Department of the Interior and their respective agencies represented thereby, respecting facilities which have been heretofore, or, which hereafter may be constructed or hereafter used in connection with the performance of treaty provisions;

(a) The term "works" and the term "facilities" shall be construed as embracing either or both works and facilities, and

(b) For the purpose of this memorandum, the term "works located upon their common boundary," as used in the treaty, and the term "on * * * the boundary" wherever used in the treaty or the protocol, shall have application only to works or features of works situated partly in both countries. For the purpose of this memorandum the term "along the boundary," as used in the protocol, shall have application only to works or the features of works located in such proximity to the boundary and of such a character as to control or affect the regimen or flow of the boundary sections of the Rio Grande or Colorado River, as determined by the Secretary of State after consultation with the Secretary of the Interior and, in the event they shall not be in accord as to such determination, with the approval of the President.

The provisions of this subdivision of this memorandum shall not be construed to effect:

- (1) the allocation of works as to jurisdiction or function, or both, made elsewhere in this memorandum,
- (2) the regulatory jurisdiction of the Commission or the United States Section arising under prior existing treaties and Acts of Congress.

(c) Nothing in this memorandum shall be construed as effecting, limiting, or modifying the functions and activities of the United States Geological Survey, or of the United States Section, respectively, with respect to stream gaging and other water resources investigations.

2. The United States Section shall consult with the Bureau with respect to the plans contemplated by subsection (2) of Article 16 of the treaty relating to the Tijuana River.

3. The Department of State and the Department of the Interior, and their respective agencies, the United States Section and the Bureau, in the exercise of their respective jurisdictions and performance of their respective functions, will cooperate with each other, among other things, as to effecting, to the extent permissible by law, assignment of personnel, transfer of funds and exchange of information to the end that there may be fulfilled the provisions of the treaty, as supplemented by the protocol, and the Reclamation Law and all other Acts of Congress pertaining to the functions of the Department of the Interior as to the investigation, conservation and utilization of the natural resources of the United States. The Secretary of State and the Secretary of the Interior will cooperate in making studies, reports and recommendations, including those pertaining to the obtaining of such legislative authorization as may be necessary, concerning the allocation of costs of construction and operation and maintenance of existing or future works, and of water investigations, within the United States which have been heretofore, or may be in the future, constructed or performed in whole or in part under au-

thority vested in the Secretary of the Interior and which may be utilized in whole or in part in the fulfillment of the treaty.

4. Unless and until otherwise provided in accordance with the domestic law of the United States, in conformance with the treaty and the protocol, the Bureau shall exercise or continue to exercise jurisdiction, and shall perform functions and construction, where new construction may be involved, and operation and maintenance, within the principles stated herein, as to facilities and works as follows:

(a) *Rio Grande*

(1) All facilities and works within the United States constituting the Valley Gravity Canal and Storage project as provided for in the Act of June 28, 1941 (55 Stat. 303, 338) except those portions of the Project designated by the Secretary of State, under the authority of that Act, as being international in character: *Provided*, however, that whenever the construction, operation or maintenance of any feature of such works or facilities may involve the use of, affect or interfere with the construction, operation or maintenance of any feature of the Lower Rio Grande Flood Control project under the jurisdiction of the United States section, the plans and specifications and principles of operation as to such feature of the said Valley Gravity Canal and Storage project shall be formulated by the Bureau subject to the approval of the United States Section.

(b) *Colorado River*

(1) All facilities and works above and including Laguna Dam, and all works constituting a part of the Yuma and Gila Federal Reclamation projects of the Department of the Interior.

(2) All-American Canal.

(3) Pilot Knob check and wasteway and, to whatever extent provision may be made for the generation of electric energy at Pilot Knob by the United States, the Pilot Knob power plant and appurtenances.

(4) The design of the protective works within the United States contemplated by the provisions of Article 12 (a) of the treaty as a result of the construction of the Mexican diversions structure in the Colorado River shall be subject to the approval of the Bureau, with the understanding that the part of such works to be built in the United States may be built and operated and maintained by the Bureau, at its option, subject to supervisory control by the United States Section.

(5) The flood control works contemplated by Article 13 of the Treaty above Laguna Dam and, to the extent that may hereafter be agreed upon between the United States Section and the

Bureau by a memorandum supplementary hereto, the flood control works allocated to the United States between Laguna Dam and the boundary: *Provided*, however, that nothing herein shall impair or modify the jurisdiction and functions of the Bureau under the Act of January 21, 1927 (44 Stat. 1010), as amended, relating to the Colorado River front work and levee system.

(6) The Bureau will collect and communicate to the United States Section such data and information as may be necessary for the use of the United States Section in making the determinations and findings of fact in accordance with Article 10 and Article 15 of the treaty. Such determinations and findings shall be made by the United States Section after consultation with the Bureau.

5. Unless and until otherwise provided in accordance with domestic laws of the United States, in conformance with the treaty and the protocol, the United States Section shall exercise or continue to exercise jurisdiction, and shall perform functions and construction, where new construction may be involved, and operation and maintenance, within the principles stated herein, as to facilities and works as follows:

(a) *Rio Grande*

(1) In so far as the functions of the United States Section may be involved, the engineering planning, designing, construction, and operation and maintenance of the international dams and other works provided for in the treaty: *Provided*, however, that the United States Section shall consult with the Bureau relative to locations, plans and designs for construction, and principles of operation of the principal international storage dams, and shall consult with the National Park Service relative to the location of any such dam which would involve construction in or the impounding of water on lands in the area of the Big Bend National Park.

(2) Power plants at the international storage dams: *Provided*, however, that the United States Section shall consult with the Bureau with respect to plans and designs for the construction of such plants, and principles of operation; and *Provided*, further, that the disposition in the United States of hydroelectric power which, pursuant to the provisions of Article 7 of the treaty, is generated at the international storage dams on the Rio Grande and is made available to the United States, shall be made in accordance with such provisions therefor as the Congress of the United States shall have provided or will provide; and the Department of State will consult with the Department of the Interior in the performance of its functions regarding future agree-

ments, regulations and other matters provided for in Article 19 of the treaty; and *Provided*, further, that the Secretary of State will cooperate with the Secretary of the Interior in connection with such legislation as hereafter may be proposed in the Congress whereby the Secretary of the Interior may be authorized to dispose of such power as may so become available to the United States for disposal therein.

(b) *Colorado River*

(1) Functions with respect to approval of the location, design, and construction and principles of operation of the main diversion structure provided for in Article 12 (a) of the treaty if it shall be built in the limitrophe section of the river: *Provided*, however, that the United States Section shall consult with the Bureau as to the location, design, and principles of operation of such structure.

(2) Works constructed or acquired pursuant to Article 12 (c) of the treaty and used exclusively for delivery of water to Mexico: *Provided*, that the United States Section will consult with the Bureau in the development of plans and in the operation and maintenance of such works, and; *Provided*, further, that no agreement pursuant to Articles 11 (b) or 15-B of the Treaty which will involve the use for the purposes set out therein of any works under the jurisdiction of the Secretary of the Interior shall be made without prior arrangements having been made with him.

(3) The part of the flood control works between Imperial Dam and the Gulf of California provided for in Article 13 of the treaty, which may be assigned to the United States, except the part lying above Laguna Dam, and except as provided in subdivision (b) 5 of Article 4 hereof; *Provided*, that the United States Section will consult with the Bureau with respect to the design and construction of the part of such works which may be built in the United States.

(4) Approval of the plans for the temporary diversion structure referred to in Article 27 of the treaty, and approval of the construction and operation thereof, subject to concurrence therein by the Bureau.

(5) Subject to the provisions of subdivision (b) (4) of Article 4 hereof, the design, construction, and maintenance and operation of the protective works within the United States contemplated by the provisions of Article 12 (a) of the treaty as a result of the construction of the Mexican diversion structure in the Colorado River.

6. Where the use of any works under the jurisdiction or control of the Bureau is required for the discharge of any treaty functions, such work or works shall be operated and maintained, in cooperation with

the United States Section, in such manner that all treaty functions may be coordinated and fulfilled. Where provision is made in this memorandum of understanding for consultation regarding the planning, design, construction or operation of works, or the discharge of other treaty functions, or functions under domestic law, it is understood that the Bureau and the United States Section will mutually cooperate in furnishing such advice and assistance, consistent with their normal operations and to the extent permissible by law, in furnishing such services as may be requested by one of the other.

7. In order to insure compliance with the provisions of the treaty and domestic law, to the fullest extent practicable, wherever action is proposed to be taken by one of the cooperating agencies in the exercise of its jurisdiction or function pertaining to subject matter the responsibility or function of the other which may be affected thereby, an opportunity for consultation will be afforded by the acting agency a reasonable time in advance of the taking of such action.

8. The status of the jurisdiction and functions of the United States Section and the Bureau, respectively, shall continue, as to the Rio Grande above Fort Quitman and works thereon, as such status may exist independently of and unaffected by this memorandum.

9. This memorandum of understanding shall not become effective until it has been approved by the President of the United States and until the treaty as supplemented by the protocol becomes effective by an exchange of ratifications.

IN WITNESS WHEREOF, the Secretary of State and the Secretary of the Interior have hereunto subscribed their official signature the day and year first above written.

(sgnd) JOSEPH C. GREW,
Acting Secretary of State.

(sgnd) HAROLD L. ICKES,
Secretary of the Interior.

Approved June 18, 1945.

(s) HARRY S. TRUMAN,
President of the United States.

Appendix 1408

MORELOS DAM

**MINUTE NO. 189 OF THE INTERNATIONAL BOUND-
ARY AND WATER COMMISSION, MAY 12, 1948,
AND JOINT REPORT OF THE PRINCIPAL ENGI-
NEERS, MAY 10, 1948**

[English text of Minute No. 189 dated May 12, 1948]

INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES AND MEXICO

EL PASO, TEX., *May 12, 1948.*

MINUTE No. 189

DETERMINATIONS AS TO SITE AND DESIGN FEATURES OF THE MAIN DIVERSION STRUCTURE TO BE CONSTRUCTED BY MEXICO ON THE COLORADO RIVER AND WORKS NECESSITATED THEREBY FOR PROTECTION OF UNITED STATES LANDS, PURSUANT TO THE PROVISIONS OF ARTICLE 12 (A) OF THE WATER TREATY CONCLUDED FEBRUARY 3, 1944

The Commission met at the offices of the United States Section at El Paso, Texas, on May 12, 1948, at 10:00 a. m., to formulate decisions pursuant to the provisions of article 12 (a) of the Water Treaty of February 3, 1944, and subject to the approval of the two Governments, with respect to location and design features of the main diversion structure to be built by Mexico on the Colorado River, and with respect to the works necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of this diversion structure, which works are to be constructed, operated and maintained at the expense of Mexico.

The development of the necessary data upon which to base these decisions may be summarized as follows:

For several years prior to the negotiation of the Water Treaty the Mexican Section of the Commission in collaboration with other interested agencies of the Mexican Government, had carried on preliminary studies and investigations with respect to feasible sites for a diversion structure on the Colorado River below the northernmost

international land boundary for utilization in Mexico of the waters of this stream. The United States Section in collaboration with other interested agencies of the United States had carried on preliminary studies and investigations of the probable effects upon lands within the United States of a diversion structure at alternative sites in this reach of the river. These preliminary studies and investigations by both Sections were carefully reviewed by a joint engineering conference held in Mexico City in March, 1946, and additional studies and investigations were recommended by that conference.

Subsequently, joint engineering conferences were held in El Paso, Texas and Ciudad Juárez, Chihuahua, in January, 1947 in San Diego, California, in May, 1947, in Yuma, Arizona, in February, 1948, and in El Paso, Texas and Ciudad Juárez, Chihuahua, in March, 1948 to review the additional studies and investigations carried on by the two Sections of the Commission. In addition to the Commissioners and Engineers of the two Sections of the Commission, the following have participated in joint conferences and/or have otherwise collaborated with the Commission:

For the United States Section: Walker R. Young, Chief Engineer, E. A. Moritz, Director, Region III, J. K. Rohrer, District Manager, Lower Colorado District, and members of their staffs, of the Bureau of Reclamation; and Technical Advisers J. L. Burkholder and Donald C. Scott.

For the Mexican Section: Antonio Coria, Assistant Chief of Technical Consultants, Aurelio Benassini, Assistant Chief of Irrigation, Oscar Vega Argüelles, Director of Studies and Plans, and Eligio Esquivel M., Manager of the Mexicali Valley Irrigation District, of the Ministry of Hydraulic Resources.

On the basis of the several pertinent studies and investigations and the findings and recommendations of the joint engineering conferences, the Principal Engineers prepared and submitted to the Commission, under date of May 10, 1948, their "Joint Report on the Location and Design for the Main Diversion Structure for Mexico on the Colorado River and Works necessitated thereby for the Protection of United States Lands", the English and Spanish texts of which are attached hereto as Exhibits Nos. 1 and 1-A and form part hereof. Also attached hereto and forming part hereof are: Exhibit No. 2, map entitled "Colorado River—Imperial Dam to San Luis—Showing Location of Morelos Diversion Structure"; and Exhibits Nos. 3 and 4, plans entitled "Main Diversion Structure—Colorado River", sheets 1 and 2, prepared by the Ministry of Hydraulic Resources of Mexico and referred to in the Joint Report of the Principal Engineers.

The Commission carefully reviewed the pertinent data and adopted the following resolution:

Pursuant to the provisions of article 12 (a) of the Water Treaty concluded February 3, 1944, the Commission hereby makes the following determinations, subject to the approval of the two Governments:

1. The "Joint Report on the Location and Design for the Diversion Structure for Mexico on the Colorado River and Works necessitated thereby for the Protection of United States Lands", submitted by the Principal Engineers under date of May 10, 1948, is hereby approved in its entirety.

2. Mexico having found that the preponderance of advantages is offered by the Algodones site for the main diversion structure which it is to build on the Lower Colorado River pursuant to the provisions of article 12 (a) of the Water Treaty, the location of said structure at that site is hereby approved with the understanding that the necessary works for the protection of lands within the United States from the effects of the proposed structure at said site will be constructed, operated and maintained at the expense of Mexico pursuant to the provisions of article 12 (a) of the Water Treaty and that final plans for such works will be developed in accordance with the agreement set forth in paragraph 4 hereof.

3. Construction of the said main diversion structure in substantial accordance with the plans prepared by Mexico, entitled "Main Diversion Structure—Colorado River", sheets 1 and 2, and numbered 3005-C-2939 and 3005-C-2940, is hereby approved. It is understood and agreed that approval of said plans shall not be construed as implying any undertaking by the United States to deliver waters of the Colorado River to Mexico in greater quantities or at greater rates than those stipulated in articles 10, 11 and 15 of the Water Treaty.

4. The nature and extent of the levees, interior drainage facilities and other works, or improvements to existing works necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of the main diversion structure to be built by Mexico on the Colorado River, shall be determined by the Commission at the earliest possible date and in accordance with the criteria recommended by the Principal Engineers in their "Joint Report on the Location and Design for the Main Diversion Structure for Mexico on the Colorado River and Works necessitated thereby for the Protection of United States Lands". The Commission's determinations in these respects shall provide, among other things, (a) for the construction, at the expense of Mexico and simultaneously with the construction of the main diversion structure in so far as may be engineeringly feasible, of the works required in order to protect lands within the United States against such floods as might result from the construction, operation and maintenance of the diversion structure, and (b) for the construction, also at the expense of Mexico and at such time as need therefor may develop as determined by the Commission, of such interior drainage facilities as may be required to protect United States lands against seepage resulting from the construction, operation and maintenance of said diversion structure.

The meeting then adjourned.

s/ L. M. LAWSON,
Commissioner of the United States.

s/ D. HERRERA J.,
Commissioner of Mexico.

s/ GEORGE H. WINTERS,
Secretary of the United States Section.

s/ FERNANDO RIVAS S.,
Secretary of the Mexican Section.

[Copy]

[English text]

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

EL PASO, TEXAS, *May 10, 1948.*

JOINT REPORT ON THE LOCATION AND DESIGN FOR THE MAIN DIVER-
SION STRUCTURE FOR MEXICO ON THE COLORADO RIVER AND WORKS
NECESSITATED THEREBY FOR THE PROTECTION OF UNITED STATES
LANDS

The Honorable COMMISSIONERS,
INTERNATIONAL BOUNDARY AND WATER COMMISSION,
UNITED STATES AND MEXICO,
El Paso, Texas and Ciudad Juárez, Chihuahua.

SIRS: In accordance with your instructions, we submit the following report on the location and design for the main diversion structure on the Colorado River which is to be built by Mexico under article 12 (a) of the Water Treaty of February 3, 1944, and with respect to the works necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of this diversion structure, which works are to be constructed, operated and maintained at the expense of Mexico, also pursuant to the provisions of article 12 (a) of the Water Treaty.

The studies and investigations necessary for the planning of the diversion structure were outlined in the Report on the Engineering Conference held in Mexico City in March 1946. The pertinent parts of these studies, carried on by the engineers of both Sections of the Commission and reviewed by the Engineering Advisers of both, are now adequately developed for purposes of making determinations with respect to location and design of the diversion structure.

The studies show that the dam can best be built in the limitrophe section of the Colorado River at the Algodones site about one mile downstream from the upper international boundary line. The location of this site is shown on the attached drawing entitled "Colorado River-Imperial Dam to San Luis, showing Location of the Morelos Diversion Structure".

The studies also show that the structure should reach from levee to levee, a distance of about 1,400 feet, should have a gated section about 700 feet long and an overflow section about 600 feet long; that it should be of the floating type built of concrete and steel, protected by concrete aprons, steel sheet piling and rock riprap both upstream

and downstream, and with radial gates so designed that they can be raised to safely pass a flood of 350,000 second-feet.

During the studies consideration was given to locating the dam entirely in Mexico at a site near San Luis, Sonora, and at a site in the upper reaches of the limitrophe section of the river as described above. In comparing the two sites, it was found that the rise in normal river water surface necessary to permit the desired diversion at the lower site would be approximately 10 feet whereas at the upper site no rise would be required. It was also found that the cost of the works needed to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of the diversion structure, including the raising of the levees, the interior drainage facilities, other works and improvements to existing works, would be much more extensive and would cost a great deal more with the structure at the lower than at the upper site. It was found by Mexico that the construction of a canal system to irrigate lands in both the Mexicali Valley and the Sonora Valley in Mexico would be entirely feasible with the diversion structure located at either site and that with the diversion structure at the Algodones site it would be possible for Mexico to divert up to the capacity of its proposed canal system, whatever waters might from time to time be available at that site. However, it is recognized that the discharge of waters from the proposed canal system into the United States would be detrimental to both countries and should be restricted as far as possible.

Under the plan for the proposed canal system Mexico has determined that a part of the diverted waters can be used to irrigate the lower lands of the Mexicali Valley, with the higher lands of that Valley being irrigated by the waters to be delivered through the All-American Canal to Mexico under the treaty, and that a part of the diverted waters can be conveyed by a canal located along the west side of the river and a siphon under the river in the vicinity of San Luis, Sonora, to irrigate the lands lying along the east side of the river in the Sonora Valley.

Following the selection by Mexico of the upper site for the diversion structure, studies were made of the probable effects of a structure so located upon both the normal and flood flows of the river upstream from the structure. It was found that as to ordinary flows no rise in river water surface is to be anticipated unless the structure and diversion works should be so operated as to cause some silting of the bed of the stream. It appears that silting could be avoided if the gates in the diversion structure are so operated as to prevent raising of the river water surface and if the main canal cross section is maintained at its designed elevation. Nevertheless, since some uncertainty exists, an estimate has been made of the amount of drainage

facilities that would be necessary in order to protect United States lands lying upstream from the structure if a rise in the river bed of three feet, and the corresponding rise of river stages, should be caused by the structure. These works would include the construction of about 24 miles of drains located generally parallel with and on the land side of the protective levees, and might include as many as five pumping plants. If the rise in the river bed should be more than three feet, the mileage of drains required would be greater and the amount of water to be pumped would be increased.

It was found that further studies are needed in order to determine the size of the flood that should be used for the levee design; these studies are now being made. On the basis of the completed studies it was determined, however, that the necessary river levees in the affected reaches of the Colorado and Gila rivers will have to be raised a vertical distance corresponding to the rise caused by the diversion structure in water surface elevation of whatever size flood is finally determined to be the proper levee design flood. It was further determined that the levees should have a 20-foot crown width which should be surfaced with gravel to provide a two-way road, that they should have slopes not steeper than $2\frac{1}{2} : 1$ on the river side and $2 : 1$ on the land side, that they should be protected on the river side by a rock blanket about five feet thick and that this rock blanket would have to be raised for a vertical distance corresponding to the rise in flood water surface caused by the structure.

It was also determined that the diversion structure would cause a rise of about 2.5 feet in the water surface above the structure with a 250,000 second-foot flood and of about 3.8 feet with a 350,000 second-foot flood. We have subsequently agreed that the rise in water surface for all large floods will extend upstream parallel to the water surface slope of the flood without the dam, along the Colorado River as far as the mouth of the Gila River, with backwater effects on up the Colorado River to the Laguna Dam and up the Gila River for some distance. All necessary criteria for design of the required flood protective works upstream from the diversion structure have therefore been determined and agreed upon, except the size of flood for design purposes and, as stated above, the necessary studies for this determination are now being made.

Our studies lead to the conclusion that until such time as the downstream effects of the diversion structure can be observed it will not be possible to determine whether such effects are likely to result in increased flood or seepage dangers to lands in the United States. Accordingly, we have concluded that it is not possible at this time to determine the nature of works, if any, that may ultimately be required downstream from the structure in order to protect lands in

the United States from floods or seepage resulting from the construction, operation and maintenance of the structure.

The studies that have been made of the conditions along the Colorado River, both those outlined herein and the others also mentioned in the Report on Engineering Conference held in Mexico City in March 1946, and now partially completed, show clearly the interrelation between the now proposed construction of the main diversion structure by Mexico, the construction of the works necessary to protect lands in the United States from the effects of the structure, and the construction of the flood control works referred to in article 13 of the treaty. Accordingly, all studies and field investigations necessary for the preparation of the report required by article 13 on flood control on the Lower Colorado River between Imperial Dam and the Gulf of California should be expedited in order that all works finally recommended for construction may be coordinated. In addition to the diversion structure and the protective works mentioned above, these works may include flood control dams on the tributaries of the Colorado River, and levees or the reconstruction of levees and their incidental works including intercepting drains, and rectification works or improvements in the channel of the river to provide the capacity required from Imperial Dam to the Gulf of California.

We have carefully examined the plans for the main diversion structure prepared by Mexico, dated April 1948, numbered 3005-C-2939 and 3005-C-2940, and submitted to the Commission for approval, and we are of the opinion that they meet the criteria stated hereinabove. The plans show that:

1. The structure will reach from levee to levee, a distance of about 1,400 feet.

2. The gated section will have an over-all length of 702 feet and will consist of twenty electrically operated radial gates 11 feet x 30 feet separated by concrete piers, with the sill of the gates at an elevation of 96.55 feet and with the floor of the superstructure at elevation 138.12 feet. In their raised position the gates are designed to clear the maximum flood of 350,000 second-feet by two feet. The foundation for the gated section, which is of the floating type, will be a reinforced concrete floor 4.9 feet thick under the piers and gates and tapering to a thickness of about 1.6 feet at the ends of both upstream and downstream aprons. The upstream apron will be protected by 20-foot steel sheet piling cut-off and the downstream apron by 25-foot steel sheet piling. The toe of the downstream apron will be perforated to provide drainage through an inverted filter.

3. The overflow section of the dam will have a crest elevation of 107.6 feet, a length of 601.5 feet and will consist of a weir section of 9.8 feet in width and 7.55 feet high, supported on a concrete floor 2.6

feet thick with a concrete upstream apron 49.2 feet long, protected at its upstream end by a 20-foot steel sheet piling cut-off. The floor below the crest of the dam will be of concrete, 49.2 feet long, and protected at its lower end by 25-foot steel sheet piling.

4. Protection against scour below the gated section of the structure will be provided by rock riprap placed on a 4:1 slope and having a minimum thickness of 6 feet and amounting to 50 cubic yards per lineal foot. Protection to the overflow section below the structure will be similarly provided by rock riprap having a minimum thickness of 6 feet and amounting to 25 cubic yards per lineal foot. Protection against scour will be provided above the gated structure by rock riprap with a minimum thickness of 6 feet amounting to 24 cubic yards per lineal foot and above the overflow section by rock riprap 2 feet thick and amounting to 14 cubic yards per lineal foot.

5. The heading for the canal will consist of a reinforced concrete structure of the floating type with a 20-foot steel sheet pile cut-off at the upstream end of the floor and 25-foot steel sheet pile at the downstream end of the floor. A reinforced concrete curtain wall will be provided to prevent uncontrolled flow into the canal and the openings into the canal will consist of twelve orifices about $6\frac{1}{2}$ feet x 20 feet in size which will be controlled by radial gates. The deck of the operating platform will be at an elevation of 138.1 feet and will be provided with a 22-foot roadway. The design capacity of the heading, about 8,000 second-feet, was determined by Mexico to be the optimum capacity, taking into consideration that the quantities of water available to Mexico under article 10 (b) of the Water Treaty, which are in addition to the guaranteed flows referred to in articles 10 (a), 11 and 15, will vary widely from year to year and are expected to decrease materially as additional uses are made in the United States.

6. The levees on both sides of the river, immediately above and below the structure, will be heavily protected by rock revetment.

7. The floodways immediately above and below the dam will be so excavated as to permit free flow of the flood water.

Recommendations:

It is recommended that:

1. The main diversion structure which Mexico is to construct on the Colorado River in accordance with paragraph (a) of article 12 of the Water Treaty of February 3, 1944, be located at the above-described Algodones site.

2. The main diversion structure and appurtenant works, including the levee protective works immediately above and below the dam, be built substantially in accordance with the plans prepared by Mexico and numbered 3005-C-2939 and 3005-C-2940, and attached hereto.

3. In the event the Commission determines that it is impracticable to place the rock revetments in the bed of the river above and below

the structure in the positions shown on the plans, a cableway be provided to facilitate the placing of such additional rock as may thereafter become necessary to protect the structure.

4. Construction of the main diversion structure and appurtenant works be carried on under the supervision and control of the Commission and upon completion, the operation and maintenance thereof be carried on under rules to be adopted by the Commission, which should provide, among other things, that river flows in excess of Mexico's irrigation requirements be utilized to the greatest possible extent to sluice the river channel and that the amounts of water entering the United States from the Mexican canal system be held to a minimum.

5. As soon as possible after the levee design flood is determined, the Principal Engineers prepare and submit to the Commission a report, using the criteria hereinbefore set out, regarding the nature and extent of the upstream works which will be necessary in order to provide adequate flood protection to lands within the United States with the diversion structure in operation, an estimate of the costs of such works, the quantities of the various units of work involved, and the plans and specifications for their execution. The report should include a breakdown of the various units of work involved and of the estimates of costs, showing (a) those necessary upstream to provide adequate protection against the design flood without a diversion dam and for which each country is responsible within its own territory, and (b) those necessitated upstream by the Mexican diversion dam and for which Mexico is responsible under article 12 (a) of the Water Treaty. The works should be built simultaneously with the construction of the diversion structure, as is also provided by article 12 (a).

6. After the diversion structure is placed in operation the Principal Engineers make such studies and surveys as may be necessary to determine the changes caused by the diversion structure in the river regimen below the dam and in the water plane under the lands adjacent to the river below the dam, determine whether any works are necessary to protect United States lands from damages resulting from floods or seepage due to downstream effects of the structure, and submit a report of their findings to the Commission.

7. Since no additional interior drainage facilities will be required upstream from the diversion structure to protect United States lands from seepage until some time after the diversion structure is placed in operation and then only if and to the extent that there is a rise in the river water surface of ordinary flows, the determination whether such additional interior drainage facilities will be necessary, and if so, the nature and extent of such facilities, be deferred until the effects of the structure in respect to seepage are known. The Principal Engineers should obtain continuous records of river stages above and below the diversion structure and monthly records of ground water stages in

adjoining areas, and make from time to time, but not less frequently than twice each year after the structure is placed in operation, such underground water surveys and other investigations as they may deem appropriate to determine whether any additional interior drainage facilities are necessary in order to protect United States lands against effects of the structure, and if so, the nature and extent thereof, and report their findings to the Commission.

8. Construction of the protective works referred to above in Recommendations Nos. 5, 6 and 7, be carried on under the supervision and control of the Commission and upon completion, the operation and maintenance thereof be carried on under rules and regulations to be adopted by the Commission.

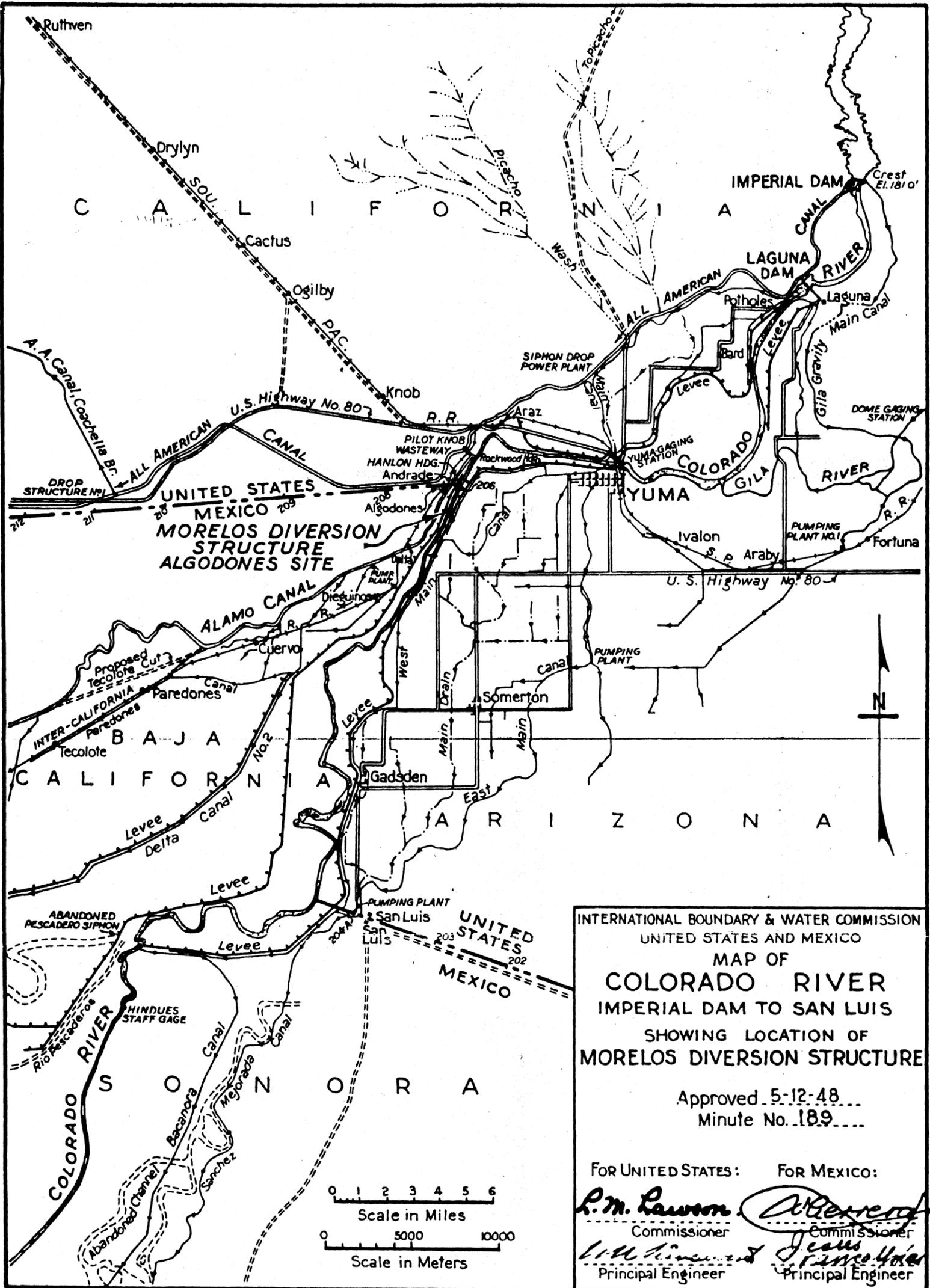
9. All studies and investigations necessary for the preparation of the report on flood control on the Lower Colorado River referred to in article 13 of the Water Treaty be completed at an early date and the report prepared thereon.

Respectfully submitted,

s/ C. M. Ainsworth,
C. M. AINSWORTH,
Principal Engineer of the United States Section.

s/ Jesús Franco Urías,
JESÚS FRANCO URÍAS,
Principal Engineer of the Mexican Section.

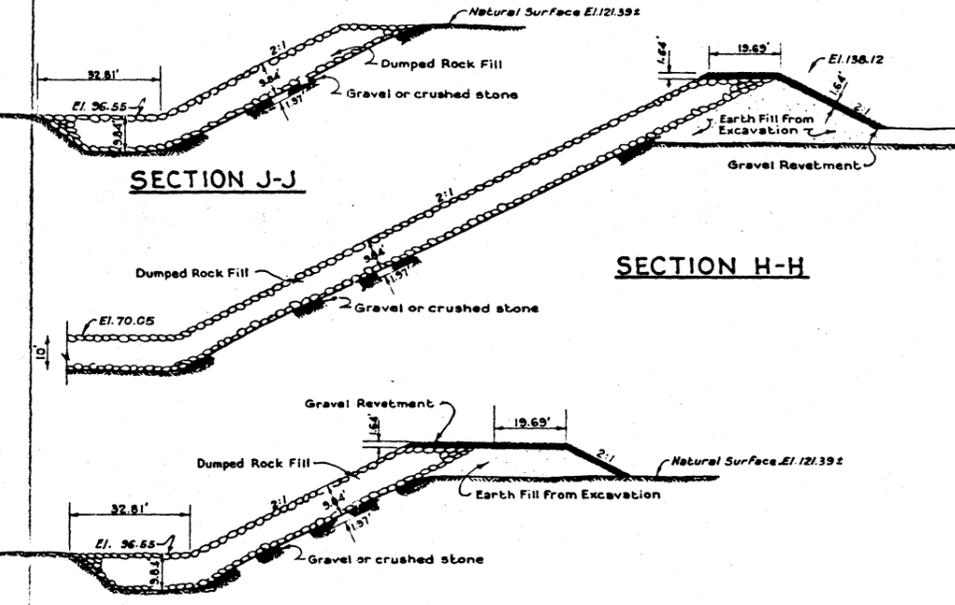
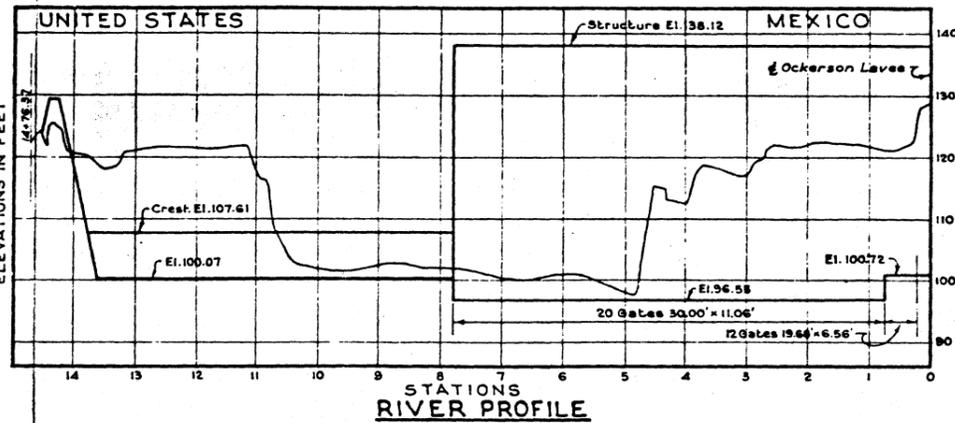
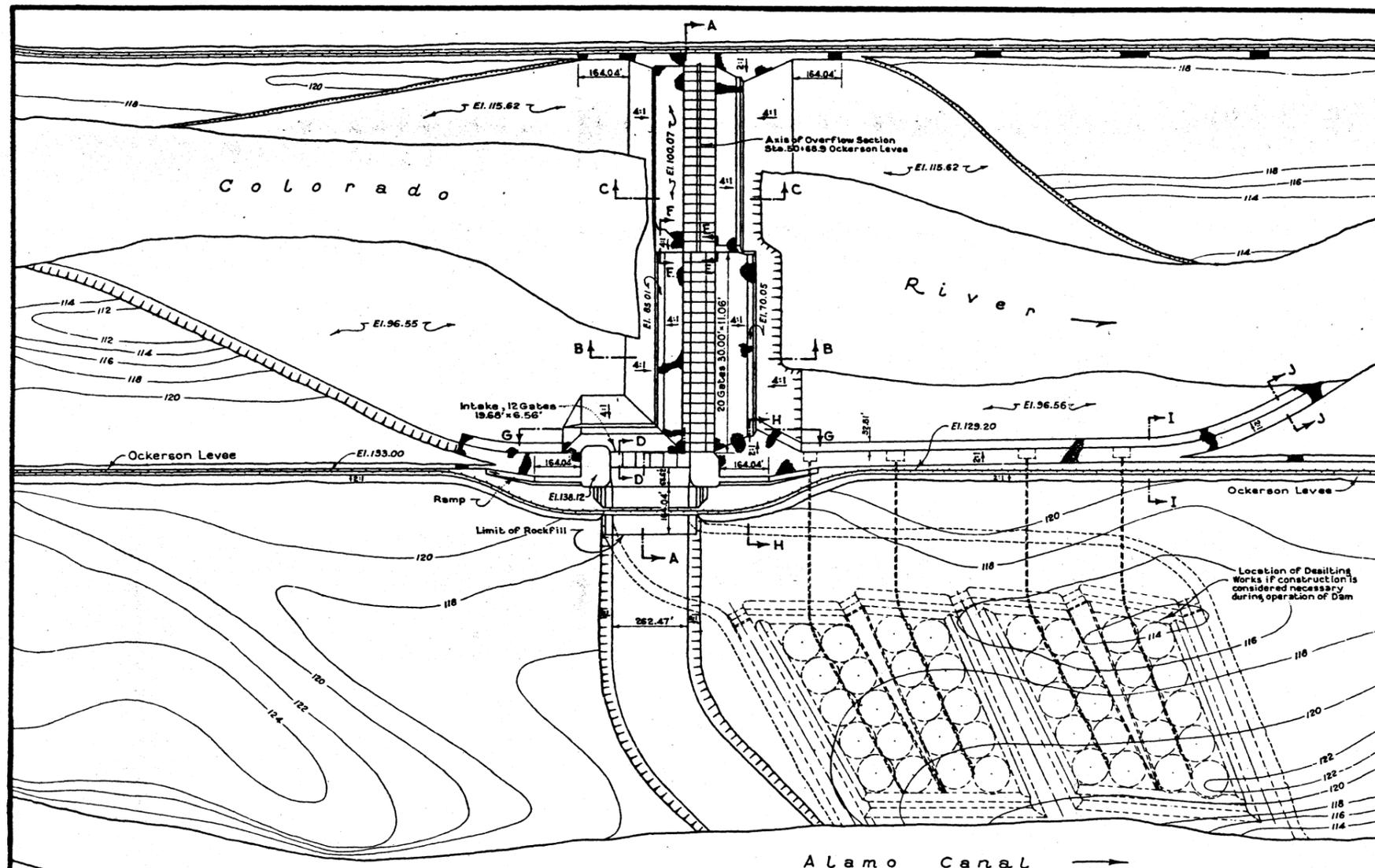
Exhibit 2



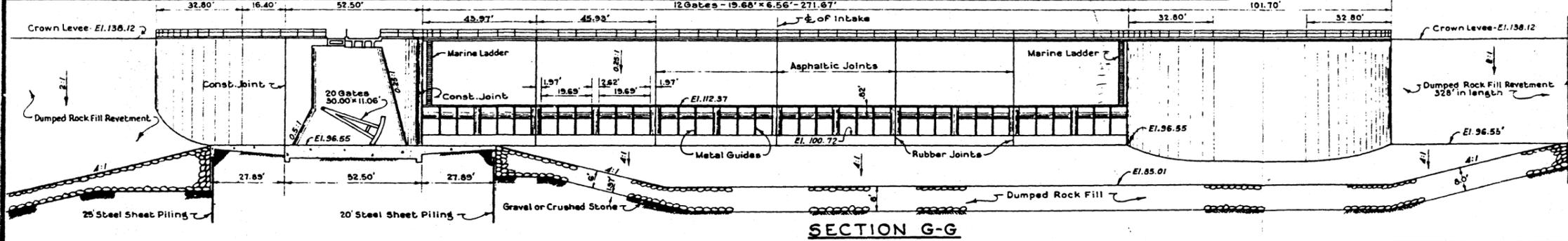
INTERNATIONAL BOUNDARY & WATER COMMISSION
 UNITED STATES AND MEXICO
 MAP OF
COLORADO RIVER
 IMPERIAL DAM TO SAN LUIS
 SHOWING LOCATION OF
 MORELOS DIVERSION STRUCTURE

Approved 5-12-48
 Minute No. 189

FOR UNITED STATES: *R. M. Lawton*
 Commissioner
 FOR MEXICO: *Alfonso Herrera*
 Commissioner
William H. ... Principal Engineer
Francisco ... Principal Engineer



GENERAL PLAN
Scale - Hundreds of Feet



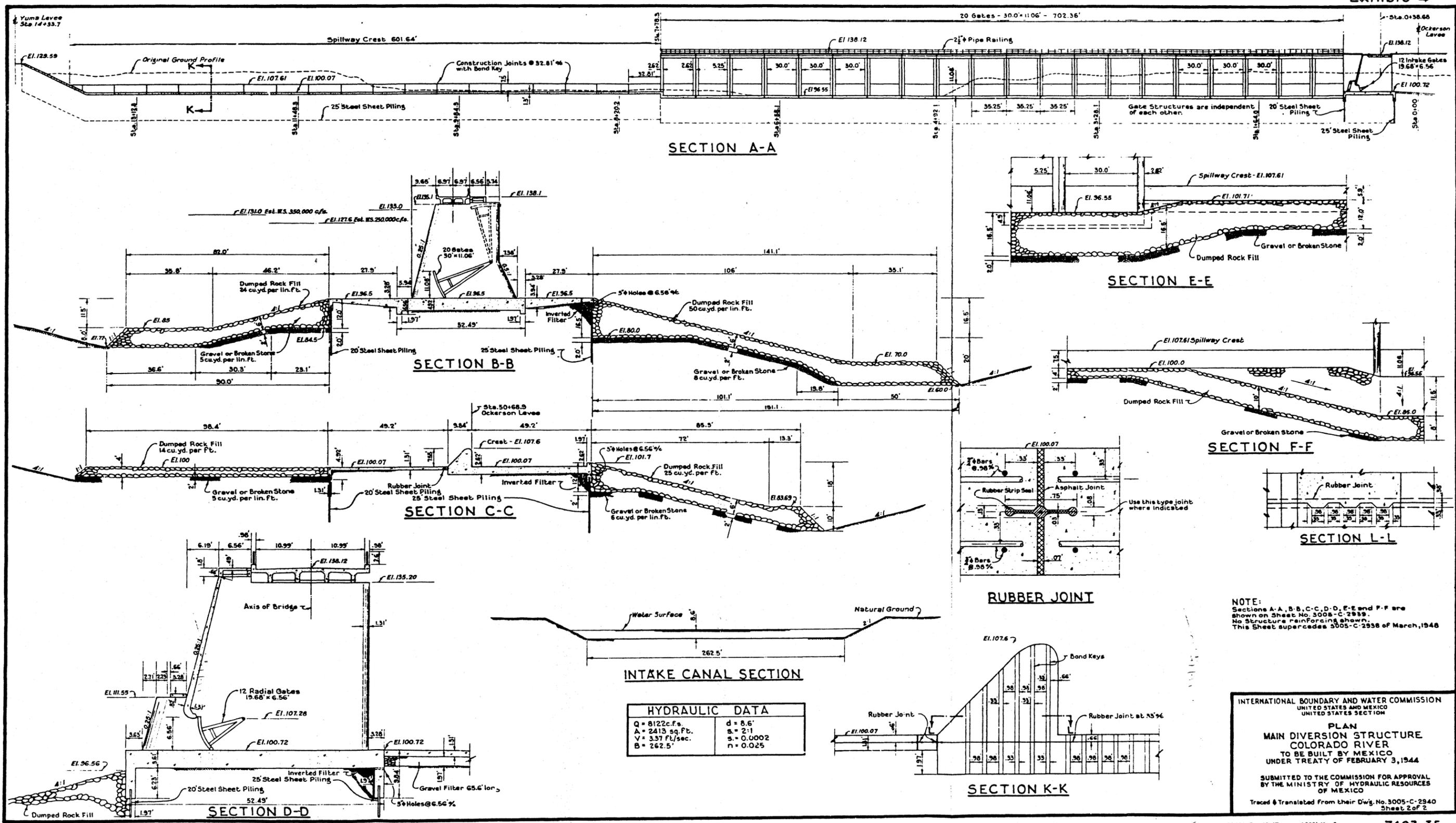
NOTE: Sections A-A, B-B, C-C, D-D, E-E and F-F indicated on this Plan are shown on Plan No. 3005-C-2940. Topography taken from Map No. G-IV-b-16 of Aug. 1943. The Profile shown was taken from a Plan (not numbered) sent by the Resident Engineer of Rice on Feb. 22, 1946. This Plan supercedes No. 3005-C-2937 of March, 1946.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO
UNITED STATES SECTION

**PLAN
MAIN DIVERSION STRUCTURE
COLORADO RIVER
TO BE BUILT BY MEXICO
UNDER TREATY OF FEBRUARY 3, 1944**

SUBMITTED TO THE COMMISSION FOR APPROVAL
BY THE MINISTRY OF HYDRAULIC RESOURCES
OF MEXICO

Traced & Translated from their Dwg. No. 3005-C-2939
Sheet 1 of 2



SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SECTION E-E

SECTION F-F

SECTION L-L

RUBBER JOINT

INTAKE CANAL SECTION

HYDRAULIC DATA	
Q = 8122 c.f.s.	d = 8.6'
A = 2413 sq. Ft.	s = 2:1
V = 337 Ft./sec.	s = 0.0002
B = 262.5'	n = 0.025

SECTION K-K

NOTE:
 Sections A-A, B-B, C-C, D-D, E-E and F-F are shown on Sheet No. 3005-C-2939.
 No Structure reinforcing shown.
 This Sheet supercedes 3005-C-2938 of March, 1948

INTERNATIONAL BOUNDARY AND WATER COMMISSION
 UNITED STATES AND MEXICO
 UNITED STATES SECTION

PLAN
MAIN DIVERSION STRUCTURE
COLORADO RIVER
TO BE BUILT BY MEXICO
UNDER TREATY OF FEBRUARY 3, 1944

SUBMITTED TO THE COMMISSION FOR APPROVAL
 BY THE MINISTRY OF HYDRAULIC RESOURCES
 OF MEXICO

Traced & Translated From their Dwg. No. 3005-C-2940
 Sheet 2 of 2

Appendix 1409

MORELOS DAM

**APPROVAL BY THE STATE DEPARTMENT, JUNE
10, 1948, OF MINUTE 189 OF THE INTERNATIONAL
BOUNDARY AND WATER COMMISSION, SUB-
JECT TO "UNDERSTANDINGS"**

[Copy]

DEPARTMENT OF STATE,
Washington, June 10, 1948.

In reply refer to
MA 711.1216M/5-1448
Air Mail
Special Delivery

The Honorable L. M. LAWSON,
*United States Commissioner, International Boundary and
Water Commission,
United States and Mexico,
P. O. Box 1859, El Paso, Texas.*

MY DEAR MR. LAWSON: This will confirm the receipt of your letter dated May 14, 1948, enclosing the original and one copy of Minute No. 189, dated May 12, 1948, of the International Boundary and Water Commission, United States and Mexico, for the consideration of the Department. This Minute sets forth the Commission's "determinations as to site and design features of the main diversion structure to be constructed by Mexico on the Colorado River and works necessitated thereby for protection of United States lands pursuant to the provisions of Article 12 (a) of the Water Treaty concluded February 3, 1944."

I am pleased to inform you, confirming the Department's telegrams of June 8, 1948, and June 9, 1948, that Minute No. 189 is approved subject to the following understandings:

First, with reference to Determination No. 3 of the Minute, it is understood that in accord with the provisions of Article 11 of the Water Treaty, waters from the United States arriving in the bed of the limitrophe section of the Colorado River downstream from the Main Diversion Structure shall be included in the quantity of 1,500,000 acre-feet guaranteed to Mexico by Article 10 of the Treaty.

Second, with reference to Recommendation No. 4 contained in the Joint Report of the Principal Engineers adopted by Minute No. 189, it is understood that an objective of the rules to be adopted by the Commission for the operation and maintenance of the Main Diversion Structure will be to assure, insofar as is engineeringly feasible, that no rise in the river water surface of ordinary flow will result from the operation of the Structure as is referred to in Recommendation No. 7 of the Joint Report of the Principal Engineers, and, further, that the amounts of water entering the United States from the Mexican canal system will be held to a minimum.

Third, with reference to Recommendation No. 9 contained in the Joint Report of the Principal Engineers, it is understood that the two Governments will without delay, instruct their respective Commissioners to expedite the studies, investigations, and preparation of plans, and report thereon, provided for by Article 13 of the Water Treaty.

In accordance with the third understanding hereinabove, you are instructed to join with the Mexican Commissioner of the International Boundary and Water Commission, to expedite the studies, investigations, and preparation of plans, and report thereon, provided for by Article 13 of the Water Treaty.

The Department would appreciate being informed if and when the Mexican Government indicates its concurrence in the understandings of the Department with regard to Minute No. 189 under reference.

Sincerely yours,

For the Secretary of State:

WILLIAM G. MACLEAN,
Division of Mexican Affairs.

Appendix 1410

**THE MEXICAN TREATY AND THE ALL-AMERICAN
CANAL:
PROPOSAL OF IMPERIAL IRRIGATION DISTRICT,
DECEMBER 2, 1947**

DECEMBER 2, 1947.

HON. GEORGE C. MARSHALL,
Secretary of State,
Department of State, Washington, D. C.

MY DEAR MR. SECRETARY: On September 15 and 16 of this year a joint meeting was held in Los Angeles between representatives of the Department of State; the American Section of the International Boundary and Water Commission, United States and Mexico; Department of Justice; Bureau of Reclamation of the Department of the Interior; and Imperial Irrigation District. A list of those in attendance on each of the two days is attached for reference. At that meeting a number of matters were discussed, which involve the All-American Canal project (authorized by the Boulder Canyon Project Act of December 21, 1928—Public No. 642, 70th Cong.), properties and rights of Imperial Irrigation District, and the treaty between the United States and Mexico (Treaty Series 994), which became effective November 8, 1945. Any reference herein to that treaty is intended to include the treaty signed February 3, 1944, the protocol to the treaty signed November 14, 1944, and the reservations to the treaty as contained in the resolution of ratification of the Senate of the United States, adopted April 18, 1945.

At the outset we want to make it clear that Imperial Irrigation District recognizes the treaty as the law of the land, which should be and will be observed and carried out in good faith by both countries, and that this district neither desires nor intends by anything said herein to suggest or seek a modification of the treaty nor to interfere with its proper administration. It is the purpose and intent of this district to cooperate in every way with the United States Government to facilitate operations under and in conformance with the treaty. In turn, we ask and believe we are entitled to have the cooperation of our Government in the recognition, observance, and protection of the interests and properties of the people of Imperial Valley, whom this district represents.

One of the results of the discussions had at the meeting above referred to was the suggestion that this district submit for your consideration a plan or proposal which this district might desire for the diversion, transportation, and delivery of that portion of the water of the Colorado River allotted to Mexico by the treaty, which is to be delivered by means of the All-American Canal and a canal connecting the lower end of the Pilot Knob Wasteway with the international boundary (art. 11 (c) of the treaty).

In the following we submit such a proposal, including several alternatives. It is not intended that the proposal, or any part of it, be considered as necessarily in final form or not subject to modification, but rather that it is of a preliminary nature and is being submitted for your consideration. It was understood that the opportunity would be afforded us for further discussion after you had given it such consideration.

I. USE OF ALL-AMERICAN CANAL FACILITIES FOR DELIVERY OF WATER TO MEXICO

The All-American Canal facilities required to be used in connection with the delivery of water to Mexico by means of said canal, under article 11 (c) of the treaty, are Imperial Dam, the headworks of said canal at Imperial Dam, and the portion of said canal from said headworks to and including the Pilot Knob Check and Pilot Knob Wasteway.

Imperial Irrigation District will:

- (1) Take over the care, operation, and maintenance of these facilities and of Laguna Dam, under and in accordance with the provisions of article 8 of that certain contract between the United States and said district dated December 1, 1932;
- (2) Dedicate and make available at all times from the capacity provided for said district in said facilities under said contract of December 1, 1932, the capacity required to deliver to Mexico the water which, under article 11 (c) of the treaty, is to be delivered to Mexico by means of said facilities;
- (3) As an agent of the United States, divert from the Colorado River at Imperial Dam, transport through and by means of such facilities, and deliver at the end of the Pilot Knob Wasteway the water to be delivered to Mexico under said treaty, as aforesaid, and which water is made available in the river at Imperial Dam for such purpose, such deliveries to be made at the times and in the amounts as directed by the United States and under and in accordance with rules and regulations as may from time to time be formulated by the United States in connection with such deliveries; and

(4) Provide the capacity in the All-American Canal and furnish such services, all as aforesaid, without in anywise modifying the obligation of the district for the repayment to the United States of the cost of the All-American Canal project under the provisions of said contract of December 1, 1932.

It is to be understood that at any time or during such times as in the opinion of the United States said district fails to carry out the provisions hereof in a manner satisfactory to the United States, the United States may, with or without notice to said district, assume direct control of such facilities and maintain such direct control for such period as the United States deems necessary. In such case, every employee of Imperial Irrigation District, to the extent that his duties or work pertain to or are required in connection with the furnishing of such water service to Mexico, as provided hereinabove, shall be considered as an employee of the United States and, at such time or during such times as the United States assumes such direct control, shall observe and carry out any and all orders or directions given by the United States in connection with such service for the delivery of water to Mexico. Such assumption of direct control by the United States shall not relieve the district from its obligations hereunder or under said contract of December 1, 1932, nor from its obligations for the compensation of said employees referred to hereinabove.

Compensation to the district for services rendered hereunder shall be determined by the United States, both as to the amount and time of payment of any such compensation, which may be varied from year to year or otherwise. It is to be understood, however, that there shall not be included in any such compensation any amount representing payment for the construction cost of such facilities used by said district in furnishing such services.

In the event the United States decides not to turn over to the district the care, operation, and maintenance of Imperial Dam and Laguna Dam, or either of them, as provided hereinabove, then the United States need not do so; and this agreement will be considered as modified to that extent, but only to that extent, and all other provisions hereof shall remain in full force and effect.

II. DEVELOPMENT OF POWER POSSIBILITIES AT PILOT KNOB BY DISTRICT

In the matter of development by Imperial Irrigation District of power possibilities at Pilot Knob on the All-American Canal, there was agreement among those attending the meeting above referred to on September 15 and 16 that the district had the right to develop such possibilities, provided only that proper safeguards are observed in the operation of the power plant connected with such development so as to not in any way interfere with delivery of water to Mexico by means of the All-American Canal.

In view of the foregoing, it is proposed that the district be permitted to develop said power possibilities on the All-American Canal at or near Pilot Knob, as provided for in said contract of December 1, 1932, and to utilize said canal and works for such purpose. In connection with such power development, the district shall be permitted to utilize not only the water to be delivered to Mexico by means of said canal, but also any other water available at Imperial Dam, in accordance with the provisions of the last paragraph of article 17 of said contract of December 1, 1932; provided, however, that in no event or under no circumstance shall the use of water for power purposes at or near Pilot Knob interfere with the delivery of water to Mexico as provided for herein. It shall be the obligation and duty of said district to make provisions for and to so operate said plant and said Pilot Knob Wasteway as to provide a continuous flow at the end of said Pilot Knob Wasteway in the amounts and as directed by the United States for delivery to Mexico, all as provided for hereinabove.

III. ALL-AMERICAN CANAL CONTRACT OF DECEMBER 1, 1932, BETWEEN
THE UNITED STATES AND IMPERIAL IRRIGATION DISTRICT

The All-American Canal contract of December 1, 1932, hereinabove referred to, between the United States and Imperial Irrigation District, shall be considered as modified to the extent, but only to the extent, required by this agreement. In all other respects, including, among others, repayment obligations of Imperial Irrigation District, said contract shall remain in full force and effect and shall be observed in good faith by the parties to said contract.

IV. PROPERTIES AND WORKS OF IMPERIAL IRRIGATION DISTRICT AT
ANDRADE

Under the provisions of the treaty (art. 11 (c)), the water to be delivered to Mexico by means of the All-American Canal is to be carried by a canal from the lower end of the Pilot Knob Wasteway to the international boundary and there delivered to Mexico in the Alamo Canal or "any other Mexican Canal which may be substituted for the Alamo Canal"; it is our understanding that Mexico intends to utilize the present Alamo Canal at and below the international boundary.

It should be pointed out that the Pilot Knob Wasteway was constructed with a capacity of 13,000 second-feet as a means of regulating the flow in the All-American Canal below the Pilot Knob Check and also as an outlet or wasteway for the full flow of the canal in case of accident to the canal. To reach the river, water released from the All-American Canal through the Pilot Knob Wasteway (or when the proposed power plant is in operation, then through such power plant).

which is not to be delivered to Mexico must pass through a short section of the district's Alamo Canal, then through the district's Rockwood Head Gate located adjacent to the river. In view of this use of the Pilot Knob Wasteway, both for regulating flow in the All-American Canal as well as delivery of water to Mexico, a control structure (such as the district's Hanlon Heading) is required in the Alamo Canal between the lower end of the Pilot Knob Wasteway and the delivery point on the international boundary by which to control and regulate the water to be delivered to Mexico.

Imperial Irrigation District owns the properties and works required for or useful in connection with this service to Mexico. In addition the district owns a rock quarry, buildings and equipment in the same location, which have been used in the past and will be required in the future for constructing and maintaining river protection works, both in the United States and Mexico. All of these properties and works are referred to as the "Andrade" properties of the district. In passing, it may be noted that these properties have been utilized by the district for delivery of water to Mexico from the time development commenced up to and including the present time. Also at Andrade were located the headquarters for work on the river protection levees along the Colorado River, both in the United States and in Mexico.

Imperial Irrigation District will:

- (1) Continue the care, operation, and maintenance of the Alamo Canal and related facilities from and including the Rockwood Head Gate to the international boundary (as it has been and now is doing) and, as an agent of the United States, deliver the water to Mexico provided by the treaty, such deliveries to be made at the times and in the amounts as directed by the United States and under and in accordance with such rules and regulations as may, from time to time, be formulated by the United States. Compensation shall be paid to the district for the furnishing of such services and use of such facilities as may be determined by agreement between the United States and the district, provided the United States shall have the right to assume the care, operation, and maintenance of said facilities with or without notice to the district at any time or during such times as, in the opinion of the United States, the services furnished by the district are not satisfactory to the United States and, in such event, compensation paid to the district shall be reduced to an amount to cover only the leasing of said facilities by the United States, such reduced amount of compensation to be agreed to between the United States and the district prior to the making of this agreement; or

- (2) Lease to the United States the Alamo Canal and related facilities from and including the Rockwood Head Gate (subject

to the use of said Rockwood Head Gate in connection with the operations of the All-American Canal and Pilot Knob power plant) to the international boundary, the United States to supply the services required in connection with said deliveries of water to Mexico through said facilities. Compensation shall be paid to the district for the use of said facilities as may be determined by agreement between the United States and the District; or

(3) Sell to the United States the Alamo Canal and related facilities from and including the Rockwood Head Gate (subject to the use of said Rockwood Head Gate in connection with the operations of the All-American Canal and Pilot Knob power plant) to the international boundary, the United States to supply the services required in connection with said delivery of water to Mexico through said facilities. The price to be paid the district for said facilities shall be determined by agreement between the United States and the district.

(4) Lease to the United States the rock quarry and related facilities of the district, in the event either proposal (1) or (2) next above is selected by the United States, the United States to furnish any and all services required to utilize said quarry and said related facilities. Compensation to be paid the district for the lease of quarry and said related facilities shall be determined by agreement between the United States and the district; or

(5) Sell to the United States the rock quarry and other Andrade properties and works of the district not included in proposal (3) next above, in the event said proposal (3) next above is selected by the United States. The United States will furnish all services required in the use of said quarry and other Andrade properties and works purchased from the district. The price to be paid the district for said quarry and other Andrade properties and works of the district shall be determined by agreement between the United States and the district.

May we ask your earnest consideration of these proposals to the end that an agreement may be reached satisfactory to all concerned. We shall be glad to meet with you at any time you will fix for such additional discussions as may be necessary for the working out of a final agreement at the earliest possible date.

Sincerely yours,

EVAN T. HEWES,
President, Board of Directors.

Appendix 1411

**THE MEXICAN TREATY AND THE ALL-AMERICAN
CANAL:**

**PILOT KNOB POWER PLANT, LETTER FROM
IMPERIAL IRRIGATION DISTRICT TO THE
STATE DEPARTMENT, JANUARY 9, 1948, WITH
PLANS ANNEXED**

JANUARY 9, 1948.

Re District's letter of December 2, 1947, submitting proposal re
All-American Canal, etc.

HON. GEORGE C. MARSHALL,
Secretary of State,
Department of State, Washington 25, D. C.

MY DEAR MR. SECRETARY: Our attention has been called to the
fact that, in connection with the proposal we submitted to you by
letter dated December 2, 1947, we did not include plans and descrip-
tion of the proposed Pilot Knob power development in its relation to
our proposal. Accordingly, there are attached the following:¹

Drawing No. 213-D-5308-1—Pilot Knob Power Plant, Develop-
ment—Southwest Area, Plan and Profile—Topography.

Drawing No. E0680—Perspective of Diversion Facilities at
Andrade, T. 16 S., R. 21 E.

While I believe these two drawings will give you the information
necessary at this time in considering our proposal, should you desire
any further details, we shall be glad to furnish them to you. We
have completed detail plans and specifications for the entire power-
plant installation and are, therefore, in a position to give you any
further details desired.

Drawing No. 213-D-5308-1 shows the plan of the proposed power
development in respect to the All-American Canal and the existing
Pilot Knob Wasteway. The intake for the power plant is to be
located on the east bank of the All-American Canal about 400 feet
upstream from the Pilot Knob Wasteway. At the top of the drawing
is shown a profile, with key elevations, from the intake at the All-
American Canal, through the power plant and tailrace, to the junction
with the channel at the lower end of the Pilot Knob Wasteway. A
short distance downstream from this point is the junction of the
spillway channel with the Alamo Canal. The penstock gate structure,

¹ These drawings are omitted because of size and scale.

the penstocks to the power plant, the power plant itself, and the tailrace are located, as you will note, on private property of this district.

The plant will have an installed capacity of 33,000 kilowatts, using a maximum flow of 8,000 cubic feet per second. The general lay-out of the wasteway and power plant, as well as the capacity of the plant, was planned at the time the All-American Canal was designed and constructed.

The plan of operation will be similar to that at other drops on the All-American Canal, at two of which power plants have now been operating successfully since 1941. These drops consist of a power plant and adjoining spillway which are automatically synchronized so as to maintain a constant flow in the canal below the power plant; such water as is not passed through the power plant passes through the spillway, the continuous flow being maintained by hydraulically operated automatic gates in the spillway. This same plan of operation will be followed at Pilot Knob. In the Pilot Knob Wasteway head-gate structure there are several electrically operated gates, on either side of which are hydraulically operated automatic gates. The latter will be synchronized with power-plant operations to maintain the desired flow into the Alamo Canal. Furthermore, it is planned that the electrically operated gates will be controlled from the power plant to assist, when necessary, in regulating the flow and in case of emergency. Our experience in operating under similar conditions at the other drops on the All-American Canal, as above referred to, has given ample proof of the reliability and satisfactory results of this type of operation.

Drawing EO680 is a sketch showing general conditions in the vicinity of Andrade involved in the Pilot Knob power development and delivery of water to Mexico through the Alamo Canal, which I believe is self-explanatory. As mentioned in my letter of December 2, 1947, submitting the proposal to you, the Pilot Knob Wasteway serves a dual purpose. Under All-American Canal operations, the wasteway, together with the Pilot Knob Check, serves to regulate the flow in the All-American Canal below the Pilot Knob Check and the wasteway is also available in case of accident to the canal making necessary the emptying of the canal as rapidly as possible. Under the treaty, water for Mexico to be delivered by means of the All-American Canal will pass through the wasteway (or power plant) into the Alamo Canal, thence through Hanlon Heading to the international boundary.

This brings up the point which I would like to stress; that is, that Hanlon Heading is and must be the control structure so far as deliveries of water to Mexico are concerned. This is true whether the Pilot Knob power plant is built or not. The Pilot Knob power plant will in nowise interfere with the delivery of water by means of

the All-American Canal to Mexico. Whether water released from the All-American Canal at Pilot Knob goes through the wasteway or the power plant, it reaches the Alamo Canal at the same point, and the amount going to Mexico will be controlled at Hanlon Heading.

Hanlon Heading was the original intake from the Colorado River for the Alamo Canal, the heading at that time being connected to the river by an open channel not shown on the sketch. By reason of extreme difficulties in keeping this open channel functioning, the district found it necessary to construct the Rockwood Heading in the bank of the River, from which a canal was excavated connecting it with Hanlon Heading.

Rockwood Heading has been in operation since 1918 and is so constructed that water may pass through it in either direction. The structure contains 76 openings, each 6½ feet in width, the flow through the structure being controlled by weir boards inserted in slots in each opening. Thus it may be seen that by the use of Rockwood and Hanlon Headings, full control may be had of any water released from the All-American Canal. Such amount as is to be delivered to Mexico through the Alamo Canal will be controlled and regulated by Hanlon Heading, the balance going back to the river through Rockwood Heading. This method of operation will be followed whether the proposed power plant is installed or not. In other words, the operation of the Pilot Knob power plant will not change in any manner the operations required in connection with the delivery of water to Mexico by means of the All-American Canal and the Alamo Canal.

If any further explanation is desired or if you have any other questions, I know you will not hesitate to let me know.

Yours very truly,

EVAN T. HEWES,
President, Board of Directors.

MJD:HMF

Copies to:

L. M. Lawson, Commissioner, United States Section, International Boundary and Water Commission, United States and Mexico, El Paso, Tex.

A. Devitt Vanech, Assistant Attorney General, Land Division, Department of Justice, Washington, D. C.

Joseph F. McPherson, special assistant to Attorney General, Department of Justice, 807 Federal Building, Los Angeles, Calif.

J. A. Krug, Secretary of the Interior, Department of the Interior, Washington, D. C.

Michael W. Straus, Commissioner, Bureau of Reclamation, Washington, D. C.

E. A. Moritz, Director, Region III, Bureau of Reclamation, Boulder City, Nev.

Appendix 1412

**THE MEXICAN TREATY AND THE ALL-AMERICAN
CANAL:**

**REPLY OF STATE DEPARTMENT, AUGUST 4, 1948,
TO PROPOSALS OF IMPERIAL IRRIGATION
DISTRICT**

DEPARTMENT OF STATE,
Washington, August 4, 1948.

[SEAL]

In reply refer to
L/M 711.1216m All-American
Canal/5-748

Mr. EVAN T. HEWES,
*President, Board of Directors,
Imperial Irrigation District,
El Centro, Calif.*

MY DEAR MR. HEWES: Reference is made to your letters dated December 2, 1947, and January 9, 1948, outlining proposals which you believe would make it possible within the requirements of the water treaty of 1944 between the United States and Mexico for the Imperial Irrigation District to operate and maintain the facilities necessary to deliver to Mexico its share of the waters of the Colorado River which are required to be delivered by way of the All-American Canal.

Your proposals have received careful consideration and the conclusion has been reached that in principle the operation and maintenance of Imperial and Laguna dams, and of the All-American Canal and the Pilot Knob Wasteway, as well as the construction and operation of an electric power plant at Pilot Knob by the Imperial Irrigation District somewhat along the lines of your proposals would be possible under certain circumstances without violating the treaty. It is the view of this Department, however, that clarifying amendments to your proposals would be necessary. Consideration is being given thereto, and it is hoped that it will be possible to submit to you at a reasonably early date a draft of a proposed agreement covering the matter or to outline any other procedure which might be deemed more feasible for the purpose. Pending final conclusion of the agreement it is the belief of this Department that operation and

maintenance of the works in question down to and including the Pilot Knob Check and Wasteway should remain in the United States.

This Department is of the opinion that the Treaty of 1944 requires that this Government acquire from the Imperial Irrigation District the Alamo Canal in the United States and certain of its facilities including the Rockwood and Hanlon Headings. The question is being examined by the Department with a view to determining the exact properties which will be required. Although this phase of the matter doubtless will have to be considered separately, every effort will be made to deal concurrently with it and the matter of the operation and maintenance of the All-American Canal and its related facilities.

Sincerely yours,

For the Secretary of State:

ERNEST A. GROSS,
The Legal Adviser.

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