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Comments

CALIFORNIA AND THE COLORADO RIVER

The problem of controlling and utilizing the Colorado, the largest river of the southwestern United States, has commanded the attention of a good many men for a great many years.¹ Questions of law, politics, diplomacy, economics, and engineering have been intertwined in reconciling a variety of individual and governmental claims in this peculiarly important river.² The purpose of this discussion is to con-

¹ From its source one mile west of the Continental Divide in Rocky Mountain National Park, the Colorado drops 8,000 feet to the Gulf of California, travelling 1,500 miles and draining an area of 244,000 square miles—roughly one-thirteenth of the United States. The length totals 1,700 miles if the Green River is considered as the upper continuation instead of the upper Colorado. KLEINSORGE, *THE BOULDER CANYON PROJECT 2-7* (1941). WOODBURY, *THE COLORADO CONQUEST 1-78* (1941) contains an extensive narrative of the discovery, conquest, and early development of the Colorado. For a chronology of the history of the river see COLORADO RIVER COMMISSION OF THE STATE OF CALIFORNIA, *COLORADO RIVER AND THE BOULDER CANYON PROJECT 11-56* (1930).

² Though the river and its tributaries pass through or border on Wyoming, Colorado, New Mexico, Utah, Arizona, Nevada, California, and Mexico, the most significant feature of the system is not its size, but the nature of the land through which it flows. Ninety percent of its water comes from the mountain watersheds of Wyoming, Colorado, and Utah, but most of its course lies through the vast desert of the Southwest, which depends upon the river for life. "Within the foreseeable future, industrial and agricultural expansion and even population will be limited because there isn't enough water in the Colorado. The country fed by its lower reaches has no other supply to which it can turn." Edward Churchill, *Shall We Spend \$2,000,000,000 More on the Colorado?*, Sat. Eve. Post, Feb. 22, 1947, pp. 28-29.

sider the legal aspects of the conflict between two of the principal claimants, Arizona and California, over the division of the water available to them from the Colorado.

In determining the rights involved in this controversy, the Colorado River Compact of 1922³ and the Boulder Canyon Project Act of 1928⁴ are of fundamental importance.

The Compact and the Act

The Colorado River Compact was a compromise born of the necessity of flood control⁵ and nurtured by the growing need of the Southwest for water and power.⁶ During the 1920's the unregulated flow of the river had been practically monopolized by appropriators in the lower basin.⁷ Further development anywhere along the river was im-

³ The original Compact is filed with the Secretary of State of the United States. Copies may be found in WILBUR AND ELY, *THE HOOVER DAM DOCUMENTS*, H. R. DOC. 717, 80th Cong., 2d Sess. (1948), Appendix 203; OLSON, *THE COLORADO RIVER COMPACT* 225 (1926); Cal. Stats. 1929, p. 1.

⁴ 45 STAT. 1057 (1928), 43 U. S. C. § 617 (1946).

⁵ The Gulf of California once extended some 144 miles farther north than its present boundary. But the Colorado, which with the possible exception of the Tigris is the greatest silt-bearing stream in the world, gradually built a delta cone across the Gulf, cutting off its upper portion. For centuries the river, forced periodically by the continuous deposit of silt to change its channel, had flowed alternately into the Gulf and into what is now Imperial Valley. The latest shift to the Gulf occurred around a thousand years ago and the water in the valley gradually evaporated, leaving only the tiny Salton Sea, the surface of which is about 250 feet below sea level.

In 1905 the Colorado once again turned from the Gulf toward the Salton Sea. It cost more than \$2,000,000 to force the river back towards the Gulf; this success was inevitably temporary. The levees and cuts that were made subsequently were doomed, as was some \$200,000,000 worth of property in the Imperial, Palo Verde, and Yuma Valleys, unless the flow of the river and the deposition of silt could be effectively controlled. KLEINSORGE, *op. cit. supra* note 1, at 11-15, 37-52.

⁶ During the last decade of the 19th Century the Colorado was effectively put to work, and in the years following 1900, irrigation, primarily private, developed rapidly on the lower portion of the main stream until in the 1920's existing appropriations for the benefit of the Parker, Yuma, Palo Verde, and Imperial Valleys utilized the entire flow of the river during periods of low water. Yet in 1922 only 2,500,000 acres out of an estimated irrigable area of 6,000,000 acres in the Colorado Basin had been developed. Further agricultural development depended upon the storage of flood waters for use during dry periods. Debler, *Memorandum on Water Rights on Lower Colorado River* in *THE HOOVER DAM DOCUMENTS* 5-7 (Wilbur and Ely ed. 1948). Appendix B of the Fall-Davis Report, *Problems of Imperial Valley and Vicinity*, SEN. DOC. NO. 142, 67th Cong., 2d Sess. (1922), contains a summary of the irrigation potentialities of the basin states.

As the farms needed water, so the growing industry of Southern California needed any power that could be made available. The Colorado River is a magnificent power source. In dropping to the sea it exerts from 4,000,000 to 6,000,000 recoverable horsepower—or from one-sixth to one-fourth of the potential water power of the United States. *Drama of the Colorado*, 42 *NEW REPUBLIC* 147-149 (Apr. 1, 1925).

⁷ WILBUR AND ELY, *THE HOOVER DAM DOCUMENTS*, H. R. DOC. 717, 80th Cong., 2d Sess. 17 (1948). A 400-mile gorge divides the Colorado River Basin into an upper basin consisting of Colorado, New Mexico, Utah, and Wyoming, and a lower basin including Arizona, Nevada, California, and northern Mexico. The Colorado River Compact divides the basins at Lees Ferry, Arizona, twenty-three miles below the southern bound-

possible unless flood waters could be salvaged and stored. The logical place for such storage was in the lower basin, but the upper basin states were alarmed lest development of facilities on the lower Colorado might, under the doctrine of prior appropriation,⁸ limit their later development. They urged that some compact be made by the several states as to the portion of the water each would receive.⁹ In 1921, Congress authorized the states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming to enter into an agreement for an equitable apportionment of the waters of the Colorado and its tributary streams, subject to the approval of Congress.¹⁰

Acting under this authorization, the Colorado River Commission, consisting of Herbert Hoover as chairman, representing the United States, and representatives appointed by the Governors of the seven states, negotiated a compact which was signed in Santa Fe, New Mexico, in November of 1922.¹¹

Considering that the material interests involved represented a greater value than the entire United States at the time when the Federal Constitution was drawn up,¹² the Compact is a concise and relatively simple document. The first two of its eleven articles set forth the purposes and define the terms used. The third provides for the

ary of Utah, which places a small portion of Arizona within the upper basin and a part of Utah and New Mexico within the lower basin. But substantially the basins may be divided by states. KLEINSORGE, *op. cit. supra* note 1, at 55, 62.

⁸ The Colorado River Compact was born under the shadow of the decision in *Wyoming v. Colorado*, 259 U. S. 419 (1922), in which the Supreme Court indicated that as between states recognizing prior appropriation, the prior appropriator would prevail regardless of state lines. Six of the seven Compact states follow the doctrine of prior appropriation. California, the seventh, recognizes a combination of prior appropriation and the common law system of riparian rights. KLEINSORGE, *op. cit. supra* note 1, at 55.

But in *Nebraska v. Wyoming*, 325 U. S. 589 (1945), where three appropriation states were involved, the basic rule of equitable apportionment which had been formulated in *Kansas v. Colorado*, 206 U. S. 46 (1907), was reaffirmed. In settling a dispute between states over rights to an interstate stream the court must act "in such a way as will recognize the equal rights of both and at the same time establish justice between them." *Kansas v. Colorado*, *supra* at 98. In so doing the court may apply federal, state, or international law and may consider all the relevant facts. *Connecticut v. Massachusetts*, 282 U. S. 660, 670-71 (1931). "The effort always is to secure an equitable apportionment without quibbling over formulas." Mr. Justice Holmes for the Court in *New Jersey v. New York*, 283 U. S. 336, 343 (1931). Friedrich, *Settlement of Disputes Between States Concerning Rights to the Waters of Interstate Streams*, 32 *IOWA L. REV.* 244-82 (1947).

⁹ Two procedures are available to states engaged in a controversy over interstate waters. The first is a suit involving the original jurisdiction of the Supreme Court, U. S. CONST. ART. III, § 2, which was first invoked for this purpose in *Kansas v. Colorado*, 185 U. S. 125 (1902). The other, by far the more satisfactory method where it is possible, is a compact between the states in accordance with the compact clause of the Constitution. U. S. CONST. ART. I, § 10. Friedrich, *supra* note 8; and L. K. Caldwell, *Interstate Cooperation in River Basin Development*, 32 *IOWA L. REV.* 232 (1947).

¹⁰ 42 STAT. 171 (1921), 43 U. S. C. § 6171 (1946). WILBUR AND ELY, *op. cit. supra* note 7, at 17-19, outlines the preliminaries to Congressional authorization.

¹¹ *Id.* at 19-23.

¹² Atwood, *Struggle for Future Greatness*, Sat. Eve. Post, Oct. 9, 1926, pp. 22-23.

division of water between the two basins.¹³ Each basin is given the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per year,¹⁴ and the lower basin has the right to increase its beneficial consumptive use by an additional 1,000,000 acre-feet. The priority of the lower basin's requirements was recognized by providing that the upper basin states must deliver at least 75,000,000 acre-feet of water at Lees Ferry, Arizona, during any consecutive ten-year period. Water that might in the future be reserved for Mexico is to come first from surplus not provided for in the Compact and then equally from that allocated to each basin.¹⁵

The fourth article sets up a hierarchy of water priorities. Navigation is subservient to domestic, agricultural, and power interests, while power is subservient to domestic and agricultural interests wherever the various uses conflict.

Articles V, VI, and IX provide for the administration of the Com-

¹³ The Commissioners found it to be impossible to allocate water between the states, but a compromise suggested by Mr. Hoover, allocating the water between basins, prevailed. In October of 1948 the states having territory in the upper basin, spurred on by visions of an extensive federal reclamation program, entered into a supplementary compact to divide the water apportioned to the upper basin as follows: 50,000 acre-feet per year to Arizona; the remainder to be allocated in the following proportions: Colorado, 51.75%, Utah, 23%; Wyoming, 14%; New Mexico, 11.25%. *Calmer Waters*, Business Week, Aug. 7, 1948, p. 81; SEN. DOC. No. 8, 81st Cong., 1st Sess. (1948). The water problem of the upper basin is less acute than that of the lower basin because the former has virtually all the water it can ever use. *The Colorado-Big Thompson Irrigation and Power Project*, 168 NATTON 647 (June 11, 1949). But the hope that the upper basin would never take its 7,500,000 acre-feet has been eliminated by diversions from the natural basin to the eastern slope of the Continental Divide. Churchill, *supra* note 2 at 29. Were it not for these transmountain diversions an eventual reallocation between basins might have been desirable. Beise, *Factors Affecting Water Utilization in the Colorado*, 19 ROCKY MOUNTAIN L. REV. 341-51 (1947).

¹⁴ An acre-foot of water is the amount of water necessary to cover one acre to a depth of one foot. From four to six acre-feet of water are required to irrigate an acre of land for one year; one acre-foot will support five urban residents for a year. COLORADO RIVER COMMISSION OF CALIFORNIA, COLORADO RIVER AND THE BOULDER CANYON PROJECT 7 (1930).

¹⁵ In 1944 the anticipated Mexican treaty became a reality. U. S. TREATY SER. NO. 994; 59 STAT. 1219 (1945). It governed the utilization of water of the Colorado, Tijuana, and Rio Grande Rivers and guaranteed to Mexico 1,500,000 acre-feet of water per year from the Colorado. The treaty had been endorsed by the official representatives of Arizona, Utah, Colorado, New Mexico, Wyoming, and Texas, and opposed by the representatives of California and Nevada. WILBUR AND ELY, *op. cit. supra* note 7 at 152-159. As an act of good neighborliness, the treaty is undeniably generous, for though Mexican claims ran as high as 4,500,000 acre-feet per year, without United States development Mexico was unable to use much more than 750,000 acre-feet. It is undeniably detrimental to United States interests (except interests in Mexican land served by the Colorado) and patently unnecessary in view of the realities of international power. *Water, But Not Everywhere*, Newsweek, Feb. 5, 1945, p. 68. The wisdom of such costly altruism cannot be decided here. For a restrained criticism of the treaty see the letter of Herbert Hoover to Senator Hawkes of New Jersey, reprinted in WILBUR AND ELY, *op. cit. supra* note 7, at 159-163. It should be noted that under international law a sovereign state is not bound to let water flow into an adjoining state and does so only as a matter of comity. *Kansas v. Colorado*, 185 U. S. 125, 143 (1902).

pact and for the settlement of disputes by a commission, subject to the unimpaired right of each state to resort to litigation. Article VII recognizes present perfected rights which have first call on each basin's allocation. Article X provides for the termination of the Compact by unanimous agreement, and Article XI makes the Compact binding only when ratified by the legislatures of the seven states and approved by Congress.¹⁶

By eliminating the principal cause of friction between basins, the Compact made extensive development of the Colorado possible.¹⁷ But ten years elapsed between the signing of the Compact and the beginning of construction at Black Canyon, the site of the keystone project of the Colorado River plan.

Although the Compact was immediately approved by six of the signatory states,¹⁸ Arizona refused to ratify, and further negotiations proved fruitless.¹⁹ Subsequently, the others attempted to adopt the Compact as a six-state agreement,²⁰ but California refused to make its approval effective until the Federal Government would authorize construction of a 20,000,000 acre-foot storage dam.²¹ Attempts at such federal legislation had begun in 1922, but it was not until December 1928, that the fourth Swing-Johnson bill was passed as the Boulder Canyon Project Act,²² and six months more elapsed before

¹⁶ Article by article analyses of the Compact may be found in OLSON, *THE COLORADO RIVER COMPACT* 15-44 (1926); KLEINSORGE, *op. cit. supra* note 1, at 55-66; WILBUR AND ELY, *op. cit. supra* note 7, at 23-29; and COLORADO RIVER COMMISSION OF THE STATE OF CALIFORNIA, *COLORADO RIVER AND THE BOULDER CANYON PROJECT* 89-107 (1930).

¹⁷ The disagreement between basins had been of greater importance in deterring development than the disagreements between neighboring states because the number of states disagreeing was so great as to make federal action politically impracticable. WILBUR AND ELY, *op. cit. supra* note 7, at 30.

¹⁸ Cal. Stats. 1923, p. 1530; Colo. Law 1923, p. 684; Nev. Stats. 1923, p. 393; N. M. Laws 1923, p. 7; Utah Laws 1923, p. 4; Wyo. Laws 1923, p. 3.

¹⁹ KLEINSORGE, *op. cit. supra* note 1, at 66-70. In 1944 Arizona did ratify the Compact as a seven-state agreement, perhaps to encourage federal reclamation expenditures within the state. Ariz. Laws 1944, p. 427. There has been no determination of the effect of this ratification on the Project Act, *infra* note 22, nor on the six-state agreement, *infra* notes 25-26. WILBUR AND ELY, *op. cit. supra* note 7, at 62.

²⁰ Colo. Laws 1925, p. 525; Nev. Stats. 1925, p. 134; N. M. Laws 1925, p. 116; Utah Laws 1925, p. 127, repealed, Utah Laws 1927, p. 1; Wyo. Laws 1925, p. 85.

²¹ Cal. Stats. 1925, p. 1321 (the Finney Resolution). The magnitude of the undertaking added to the legal difficulties made it difficult for any agency other than the Federal Government to undertake such construction, although the Southern California Edison Co. had offered to build Hoover Dam at no expense to the Government if the legal obstacles could be removed. For arguments for and against federal control of river development generally, see *Interstate Compact Fails*, 42 *NEW REPUBLIC* 144 (April 1, 1925); and answer thereto, Landis, *States Rights and the Colorado Project*, 42 *NEW REPUBLIC* 265 (April 29, 1925).

²² 45 *STAT.* 1057. (1928). For the legislative history of the Swing-Johnson bills and the Boulder Canyon Project Act see COLORADO RIVER COMMISSION OF THE STATE OF CALIFORNIA, *ANALYSIS OF BOULDER CANYON PROJECT ACT* 13-49 (1930).

the conditions precedent required by the Act were complied with and it could become operative.²³

This Act attempted to reconcile the interests of the basin states and at the same time provide for the needed control of the Colorado. It authorized construction of a great storage dam at Black Canyon and of the All-American Canal to serve Imperial Valley; it provided the financial mechanisms to be used and set up rules for power and water contracts; it approved the Colorado River Compact; it provided for further development of the river; and it authorized such further compacts as the states might enter into, including detailed authorization for a compact between Arizona, California, and Nevada which has not yet been consummated.²⁴

When the Act was passed, four states had already approved the Compact as a six-state agreement.²⁵ Subsequently both Utah and California so approved it.²⁶ In addition California passed the Limitation Act that Congress had requested,²⁷ and on June 25, 1929, President Hoover proclaimed the Compact and the Act to be in effect.²⁸ After the specified power contracts had been negotiated, appropriations were made, and the construction of Hoover Dam began.²⁹

²³ As conditions precedent to the effectiveness of the Act, Section 4(a) stipulated that the Colorado River Compact must be ratified by the seven states concerned or, in the alternative, by six of those states including California, and that this second alternative must be accompanied by the enactment by California of a statute limiting her use of water. In addition, before funds could be made available the Secretary of the Interior had to secure contracts for the sale of water and power sufficient to liquidate the Government's investment.

²⁴ The authorized tri-state agreement was to be subject to the Compact. It would give Nevada 300,000 acre-feet of the water apportioned by III(a) of the Compact, and give Arizona 2,800,000 acre-feet plus one-half of the surplus, including the waters of the Gila River.

²⁵ *Supra* note 20.

²⁶ Utah Laws 1929, p. 25; Cal. Stats. 1929, p. 1, ratifying the Compact as a seven-state agreement, and Cal. Stats. 1929, p. 37, approving it as a six-state agreement without the qualifications of the Finney Resolution, *supra* note 21.

²⁷ Cal. Stats. 1929, p. 38. By this act, California provided that its aggregate annual consumptive use, including all uses under contracts made pursuant to the Project Act and all water necessary for the supply of existing rights, should not exceed 4,400,000 acre-feet of the water apportioned by III(a) of the Compact, plus not more than one-half of surplus water. *Id.* § 1.

²⁸ PUBLIC PROCLAMATION NO. 1882, 46 STAT. 3000 (1929). The Boulder Canyon Project Adjustment Act of July 19, 1940, 54 STAT. 774 (1940), 43 U.S.C. § 618 (1946), modified the financial arrangements of the Boulder Canyon Project Act. For details see WILBUR AND ELY, *op. cit. supra* note 7, at 86-100.

²⁹ *Id.* at 63-77, 81-82. Below Hoover Dam seven other dams now control the Colorado. They are, in order, Davis Dam, Parker Dam, Headgate Rock Dam, Palo Verde Weir, Imperial Dam, Laguna Dam, and Morelos Dam. *Id.* at 1-2.

The Judicial Skirmishes

The varied and widespread opposition which Colorado River development incurred was concentrated in Arizona,³⁰ and through Arizona the unsuccessful fight to halt that development was carried to the Supreme Court four times between 1931 and 1936.

In *Arizona v. California*,³¹ the "Injunction Case," Arizona attacked the Boulder Canyon Project Act as an unconstitutional invasion of its quasi-sovereign rights in that the proposed dam at Black Canyon was to be built partially on Arizona land without the approval of the State Engineer as required by law.³² Arizona further contended that the Act prevented the appropriation by Arizona of water from the Colorado except as provided by the Colorado River Compact to which Arizona had not assented.³³

The Supreme Court sustained a motion to dismiss, taking judicial notice of the navigability of the Colorado River³⁴ and upholding the right of the United States to improve a navigable river regardless of state regulations.³⁵ The Court held further that the Act did not impair Arizona's right to make or permit appropriations of water flowing within the state or on its boundaries, and that until such right was actually interfered with Arizona had no cause for complaint.³⁶

³⁰ The Boulder Canyon Project was fought by opponents of public power, by owners of Mexican lands who were opposed to the All-American Canal, by those who believed the reclamation of more farm land was undesirable, by those who were against Western industrial expansion, by those who thought California was out to steal the water, and by those who simply thought the idea was uneconomic. OLSON, *op. cit. supra* note 16, at 5, 174-193.

³¹ 283 U. S. 423 (1931).

³² Ariz. Laws 1929, p. 1. Hoover Dam was to be built between Arizona and Nevada, and Arizona claimed ownership of the bed of the stream at that point. The authorities are considered in WHITE, MEMORANDUM OF LAW POINTS AND AUTHORITIES RESPECTING THE RIGHTS OF ARIZONA IN THE COLORADO RIVER, PREPARED AND SUBMITTED TO HON. GEORGE W. P. HUNT, GOVERNOR OF ARIZONA 8-17 (1925).

³³ 283 U. S. 423 at 450.

³⁴ The motion to dismiss in effect admitted the allegations of nonnavigability so far as the defendants were concerned.

³⁵ 283 U. S. 423 at 451. There was some disagreement as to the navigability of the Colorado. The question was important as it served as the principal basis for sustaining the Project Act. Arizona earlier had asserted the navigable status of the river (WHITE, *op. cit. supra* note 32, at 6), but in the Injunction Case denied it. History seems to make it clear, however, that the Colorado had been used as an artery of commerce, at least between 1852 and 1880, sufficiently to establish permanently its navigability to a point near Fort Callville, above Black Canyon. *First Annual Report of the Reclamation Service*, H. R. Doc No. 79, 57th Cong., 2d Sess. 121 (1903). Arizona's contention that the recital in the Project Act that the purpose thereof was the improvement of navigation was a subterfuge was overruled by the Court (283 U. S. 423 at 455), even though the Act also stated that it was to be subject to the Colorado River Compact which made navigation subservient to domestic, agricultural, and power purposes. The latter provision of the Compact was specifically severable if not approved by Congress. It was not approved.

³⁶ 283 U. S. 423 at 462-464. It is safe to assume that the Act would have been sustained even if the Colorado had not been navigable. The Court at pp. 457-458 suggests several alternative bases of constitutional authority: irrigation of public lands of the

Following the Injunction Case, questions arose as to the allocation of benefits from the inevitable federal development of the river. To influence that allocation, Arizona sought to file a bill perpetuating the testimony of certain men who had participated in the negotiation of the Compact. The Supreme Court rejected the bill on the ground that the testimony it sought to preserve would be inadmissible in any future action Arizona might initiate.³⁷

The next move was the attempt by Arizona to halt the construction of Parker Dam, the diversion structure for the Los Angeles Metropolitan Water District. This purpose was achieved with interesting success by Arizona's governor when he loaded the steamboat *Nellie* with state militia, declared martial law on Arizona's side of the Colorado, and stationed his "navy" at the spot where Parker Dam was supposed to be built. There the militia stayed with fixed bayonets for six months while the United States tried vainly to obtain an injunction.³⁸ The Supreme Court refused to enjoin Arizona on the ground that the dam had not been authorized by Congress,³⁹ pointing out that specific authorization was required by the Act of March 3, 1899.⁴⁰ This stalemate was terminated by the Rivers and Harbors Act of 1935,⁴¹ after which the militia retired and construction proceeded.

The next case⁴² was as unproductive from Arizona's viewpoint as the others had been. It was an attempt to secure an equitable division of the privilege of future appropriation of the waters of the Colorado without reference to the Compact. But the United States had not been joined as defendant, and the Supreme Court held that such joinder was necessary to safeguard the Government's rights. The Court expressly declined to decide whether such a division could have been decreed if the United States had been a party.⁴³

United States, regulation of floods on an interstate river, conservation and equitable apportionment of the waters of an interstate river, and performance of international obligations as between the United States and Mexico.

³⁷ *Arizona v. California*, 292 U.S. 341 (1934), the "Perpetuation of Testimony Case." The testimony offered was not such as could influence the construction of the Compact or the Act because it was not documentary and had not been communicated to the governments which ratified the Compact. Hence it was not within the general rule that the meaning of a treaty may be determined by reference to the negotiations and correspondence of the contracting parties. *Id.* at 359-360.

³⁸ *Woodbury, op. cit. supra* note 1, at 344.

³⁹ *United States v. Arizona*, 295 U.S. 174 (1935), the "Parker Dam Case."

⁴⁰ 30 STAT. 1121 (1899), 33 U.S.C. § 401 (1946).

⁴¹ 49 STAT. 1028, 1039 (1935).

⁴² *Arizona v. California*, 298 U.S. 558 (1936), the "Equitable Apportionment Case."

⁴³ *Id.* at 572. In the absence of statute the consent of the United States is necessary before it may be sued. See the dissenting opinion of Justice Iredell in *Chisholm v. Georgia*, 2 Dall. 419 (U.S. 1793), for an examination of the ancient development of this rule.

The Remaining Issues

Since the Supreme Court successfully parried the early attempts to force a judicial solution, the substantive differences that might have been resolved remain undecided. At the present time, California is seeking Congressional authority to join the United States as a party in interstate litigation.⁴⁴ The purpose of the litigation would be to terminate the fight that has raged around the Colorado for over a quarter of a century—to terminate it so that vast reclamation projects such as the Central Arizona aqueduct⁴⁵ will not be built, at a cost of hundreds of millions, before the right to the water they must use is assured.

Arizona has now signed the Colorado River Compact.⁴⁶ Under existing law, therefore, the resolution of the controversy is a matter of interpretation of that Compact together with the Project Act, the California Limitation Act,⁴⁷ the Mexican Treaty of 1944,⁴⁸ and the contracts executed by the United States with Arizona and with California covering delivery of water from Hoover Dam.⁴⁹

The issues to be decided center around Article III of the Compact, the water allocation section, which states:

(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 . . . the United States of America shall hereafter recognize in . . . 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 . . .

⁴⁴ H. J. RES. 225, 80th Cong., 2d Sess. (1948); SEN. J. RES. 145, 80th Cong., 2d Sess. (1948); H. J. RES. 3, 81st Cong., 1st Sess. (1949); SEN. J. RES. 4, 81st Cong., 1st Sess. (1949).

⁴⁵ See note 84, *infra*.

⁴⁶ *Supra* note 19.

⁴⁷ *Supra* note 27.

⁴⁸ *Supra* note 15.

⁴⁹ These contracts were entered into under Section 5 of the Project Act and are specifically subject to the Compact. The contracts call for the delivery of a maximum of 5,362,000 acre-feet annually to California and 2,800,000 acre-feet annually to Arizona. Nevada has a contract for 300,000 acre-feet per year. WILBUR AND ELY, *op. cit. supra* note 7, at 101-114.

(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

The differences arising out of Article III are four in number:

(1). Is California entitled to participate in the use of the 1,000,000 acre-feet of water referred to in III(b)?

(2). Is the measure of "beneficial consumptive use," as applied to the waters of the Gila River (a tributary of the Colorado) in Arizona, to be diversions less returns to that river, or depletion of the virgin flow of the Gila at its mouth?

(3). Is the water apportioned by the Compact, especially the 4,400,000 acre-feet of III(a) water to which California is entitled under its Limitation Act, a net quantity or is it subject to reduction by evaporation and other reservoir losses?

(4). Is water allocated to Mexico under the treaty with that nation to be taken out of "surplus" before or after determining the "not more than one-half" to which California is entitled under the Limitation Act?⁵⁰

Who Gets the III(b) 1,000,000 Acre-Feet?

With respect to the first question, it is argued that the 1,000,000 acre-feet given to the lower basin by III(b) of the Compact must be dedicated exclusively to Arizona.⁵¹ The significance of this contention lies in the interaction of the Compact and the California Limitation Act. The latter Act limits California to 4,400,000 acre-feet of III(a) water, but does not directly refer to III(b) water, which may therefore be claimed by California unless Arizona can prove its ownership.

The attempt at proof follows two lines: first, that the framers of the Compact intended III(b) as compensation to Arizona for the inclusion of the Gila River; second, that even if the Compact cannot be so interpreted, Arizona must still get the water because California by the terms of its Limitation Act cannot.⁵²

Much of the dissatisfaction of Arizona with the Compact is due to the fact that it includes the Gila River.⁵³ If the Gila waters are part

⁵⁰ The issues are listed in *Hearings Before the House Judiciary Committee on H. J. Res. 225*, 80th Cong., 2d Sess. 24 (1948).

⁵¹ Statement of Cleon T. Knapp, Arizona attorney in *Hearings before House Public Lands Committee on H. R. 934, 935*, 81st Cong., 1st Sess. 178 (1949). In other words, California is precluded from asserting rights in excess of the 4,400,000 acre-feet covered by the Limitation Act, except in so far as surplus waters to be apportioned after 1963 are concerned.

⁵² *Id.* at 162-164.

⁵³ The Gila River joins the main stream of the Colorado just above the Mexican border. It contributes from 1,300,000 to 2,300,000 acre-feet per year to Arizona. See text at note 67 *infra*.

of the III(a) apportionment, Arizona's rights under that sub-section are virtually exhausted.

The effort to exclude the Gila altogether by restricting the Compact to the main stream of the Colorado is unimpressive and plainly in derogation of the terms of the document which refer uniformly to the "Colorado River System." But inclusion of the Gila could be minimized by identifying its water with III(b) so that Arizona's rights under III(a) would not be so greatly affected.⁵⁴

Support for the idea that III(b) was intended to cover the Gila and add to whatever rights Arizona has under III(a) is furnished by statements made in 1922 by Arizona's delegate to the Santa Fe Conference and by the Governor of Arizona.⁵⁵ But the wording of the Compact is clearly to the contrary. As the Supreme Court pointed out in the *Perpetuation of Testimony Case*, "lower basin" as used in Article III(b) cannot mean "Arizona alone."⁵⁶ The motive behind III(b), according to the commissioners from California, Colorado, and Wyoming, was the probable rapid development and greater need of the lower as compared with the upper basin.⁵⁷ Similarly, Herbert Hoover has stated that III(b) is not dedicated to Arizona nor is it to be considered the equivalent of the Gila River.⁵⁸

Assuming therefore that III(b) is not directly tied to the Gila River, there remains the question as to whether the Limitation Act allows California to use any of that 1,000,000 acre-feet. Arizona contends that III(b) is to be included in the water "apportioned" to the lower basin by the Compact.⁵⁹ If so, California may be excluded from

⁵⁴ *Hearings, supra* note 51 at 1054-1055. The other aspect of the minimization of the Gila, by means of calculating beneficial consumptive use, is discussed in the text at notes 67 to 73 *infra*.

⁵⁵ *Hearings before the Senate Committee on Public Lands on S. 1175*, 80th Cong., 1st Sess. 224-229 (1947). The testimony of Judge C. H. Stone of Colorado is in accord. *Id.* at 573. The tri-state compact proposed by § 4(a) of the Project Act, but never adopted, is said to indicate Congressional agreement.

⁵⁶ *Arizona v. California*, 292 U. S. 341, 358 (1934).

⁵⁷ *Hearings before the Senate Committee on Interior and Insular Affairs on S. 75 and S. J. Res. 4*, 81st Cong., 1st Sess. 814 (1949). Much of the evidence of the framers' intention adduced from subsequent statements of the commissioners might be held inadmissible in light of the *Perpetuation of Testimony Case*, 292 U. S. 341, 358, 359 (1934).

⁵⁸ Herbert Hoover, asked whether the 1,000,000 acre-feet in III(b) applied to the Gila exclusively, replied, "the extra 1,000,000 acre-feet provided for can . . . be taken from the main river or from any of its tributaries." When asked whether any water was apportioned to Arizona, he answered, "no, nor to any other state individually. The apportionment is to the groups." *Letter to Hon. Carl Hayden, Representative from Arizona*, WILBUR AND ELY, *op. cit. supra* note 7, at A34, A41.

If Arizona is correct in contending that III(b) water is Gila water, it would be interesting to consider the result if Mexican claims during a period of shortage required a contribution from the lower basin allotment. As Arizona stated in its brief in the *Injunction Case* (at p. 33), III(b) water, not being apportioned in perpetuity as is III(a) water, would be primarily subject to Mexican claims. See *Hearings, supra* note 57 at 843.

⁵⁹ *Hearings, supra* note 51, at 178.

III(b) because the Limitation Act allows the latter only 4,400,000 acre-feet of the water apportioned by III(a), plus not more than one-half of any unapportioned waters.⁶⁰

To demonstrate that III(b) constitutes an "apportionment" Arizona points to III(f) of the Compact which refers to water "unapportioned by paragraphs (a), (b), and (c)"; to the Arizona-United States water contract of February, 1944, which lists III(b) with apportioned water;⁶¹ to an apparently casual remark by the Supreme Court that III(b) water was "apportioned";⁶² and to a rather vague statement to the same effect by Herbert Hoover.⁶³

The evidence to the contrary is considerably more voluminous and perhaps more convincing, but no more probative.⁶⁴ The most devastating statement is in Arizona's brief urging the unconstitutionality of the Project Act: "Paragraph (b) does not apportion in perpetuity, as does paragraph (a), any beneficial use of water."⁶⁵

⁶⁰ As an additional argument for excluding California, Arizona notes that the Limitation Act is "subject to all water necessary for the supply of any rights which may now exist," one of which is the right of Arizona to use the Gila, which is the equivalent of III(b) water. *Hearings, supra* note 51 at 177. The Act, however, in referring to "rights which may now exist," is obviously concerned with rights within California.

⁶¹ The contract (Ariz. Laws 1944, p. 419) gives Arizona the right to a maximum of 2,800,000 acre-feet from Lake Mead, which would necessarily exclude the Gila from III(a), put it under III(b), and indicate that III(b) was apportioned; however, the contract is expressly subject to the Compact (§ 13) and disclaims any intention to serve as an interpretation thereof (§ 10).

⁶² The Perpetuation of Testimony Case, 292 U.S. 341, 357. The statement of the Court that "both Arizona and California apparently consider the water under Article III(b) as apportioned" is said to be totally unsupported by the briefs (there was no oral argument), and does not appear to have been necessary to the decision of the case. *Hearings, supra* note 57, at 846.

⁶³ At various times both factions have claimed Mr. Hoover as an advocate. His report on the Santa Fe Conference, H. R. Doc. No. 605, 67th Cong., 4th Sess. (1923), stated: "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." H. R. Doc. No. 605, 67th Cong., 4th Sess. 1923; also in *Hearings, supra* note 51, at 164-165.

⁶⁴ Consider, for instance, the statement of Delph Carpenter, commissioner from Colorado, included in the Senate debates on the Boulder Canyon Project Act, the "permissible additional development . . . of 1,000,000 acre-feet . . . is not a final apportionment." 70 CONG. REC. 578 (1928).

The background and legislative history of the Project Act is considered at length in *Hearings, supra* note 57, at 827-841. The facts presented indicate that the framers did not intend that III(b) would constitute an apportionment to Arizona; that Congress assumed that California had a right to half of III(b); and that § 4(a) of the Project Act includes III(b) among unapportioned water.

The fruitless negotiations for a lower basin compact following the passage of the Project Act support the above conclusions, which were among the reasons for Arizona opposition.

⁶⁵ Brief of the Attorney General of Arizona, p. 33, *Arizona v. California*, 283 U.S. 423 (1931), in HARDY, HOWARD, & SHAW, CALIFORNIA'S COMMENTS ON AN ARIZONA MEMORANDUM ENTITLED "HISTORY AND STATUS OF THE COLORADO RIVER CONTROVERSY" 9 (1949). "The flow of the system in excess of 15,000,000 acre-feet annually is not appor-

If III(b) is not an apportionment, one-half of it is available to California as "surplus water unapportioned by the Compact." If III(b) is an apportionment, California still has an argument: that the Limitation Act is not all-inclusive, that III(b) is not mentioned in that Act and therefore falls into an unrestricted classification subject to appropriation *in toto* by California.⁶⁵

How is "Beneficial Consumptive Use" Measured?

The Compact allocates water in terms of beneficial consumptive use without defining the term. A definition is necessary, however, to determine when the prescribed limits have been reached. Assuming that Arizona is entitled to share in III(a) water to the extent of 2,800,000 acre-feet annually,⁶⁷ the point of time at which that figure will be reached depends to a large extent on how beneficial consumptive use is to be measured; or, in effect, on how much water Arizona now uses from the Gila River. If Arizona takes 2,300,000 acre-feet from the Gila, 500,000 more completes the quota; but if only 1,300,000 is chargeable to the Gila, Arizona can consume 1,000,000 acre-feet in other areas. Both figures are seriously urged as representative of the beneficial consumptive use attributable to the Gila.

Arizona reaches the 1,300,000 acre-foot figure via a simple line of reasoning. The Bureau of Reclamation has estimated that in a state of nature the Gila poured that amount into the main stream of the Colorado in an average year.⁶⁸ Arizona now uses it all. The Colorado River System has therefore been depleted by 1,300,000 acre-feet which is the amount of water beneficially consumed. In other words, beneficial consumptive use means depletion of virgin flow.⁶⁹

But beneficial consumptive use is not ordinarily calculated in terms of depletion. In the words of the Supreme Court, "consumptive use represents the difference between water diverted and water which returns to the stream after use for irrigation."⁷⁰ If Gila water is meas-

tioned." Arizona brief, *supra*, p. 4, in *Hearings, supra* note 57 at 843. For the present Arizona position see the statement of C. A. Carson in *Hearings, supra* note 57, at 688-733. Arguments for California are considered in the statement of Northcutt Ely, *id.* at 809-856.

⁶⁵ *Hearings, supra* note 57, at 846.

⁶⁷ This is the allocation from III(a) proposed by § 4(a) of the Project Act, which is undisputed if Gila water is charged thereto.

⁶⁸ U. S. BUREAU OF RECLAMATION *March 1946 Report, The Colorado River 285*, now H. R. DOC. NO. 419, 80th Cong., 1st Sess. (1947).

⁶⁹ The Arizona "depletion" theory is supported by the language of Art. III(d) of the Compact and by Art. VI of the Upper Colorado River Basin Compact of 1948 (*supra* note 13). This compact of course concerns only the upper basin.

⁷⁰ *Nebraska v. Wyoming*, 325 U. S. 589, 600 (1944).

ured by diversions from the river less returns thereto, the 2,300,000 acre-foot figure is correct.⁷¹

The disparity arises from the fact that the lower Gila winds through a desert where a million acre-feet, more or less, formerly was lost through evaporation and transpiration. That water is now trapped before it gets to the desert and is put to use before it disappears.⁷²

Both theories charge to beneficial consumptive use only water that is destroyed or disappears through use by man. But California would take the amount of water removed from the entire river, subtract the amount returned thereto, and call the difference beneficial consumptive use. Arizona wants to do the measuring at the state line, taking the virgin flow as the maximum figure and subtracting therefrom whatever water now crosses the state line. By so doing Arizona would not have to account for the million acre-feet that does irrigate farms, but which if allowed to flow through the desert would never have reached the state line. It is, however, hard to believe that water is not beneficially used merely because it is salvaged. Much of the water of the Colorado is salvaged in the sense that without storage dams it would inevitably flow into the sea and be wasted. Furthermore, it is incongruous to say that water which vanishes while being used to irrigate farmland is not used. The California analysis is clearly more realistic.⁷³

When Should Evaporation be Deducted?

The Arizona position on the evaporation question is that losses from reservoirs serving several states should be born ratably.⁷⁴ The amount that could be withdrawn by both Arizona and California under any given contract would be reduced in proportion to the maximum amount of authorized withdrawal.

California responds by pointing to the Limitation Act which refers to water diverted for "use in the State of California," arguing that water evaporating from reservoirs is not diverted for use in California, and urging the unfairness of grafting an additional limitation upon California's already shackled expansion. Evaporation losses from

⁷¹ In support of this theory see Project Act, § 4(a); *Statement of G. W. Malone, State Engineer of Nevada, Colorado River Development*, S. Doc. No. 186, 70th Cong., 2d Sess. 36 (1929); Art. I(j) of the Mexican Treaty of 1944; *Hearings, supra* note 57 at 819-827; *Hearings, supra* note 51 at 1016-1030. Arizona authorities in years past have themselves lent support to the above definition, claiming that the Gila produced over 2,300,000 acre-feet annually. WILBUR AND ELY, *op. cit. supra* note 7 at A69.

⁷² *Hearings, supra* note 57, at 819.

⁷³ Except in the case of a wasting stream, both theories would result in substantially the same conclusion, and "depletion" would approximate beneficial consumptive use. *Hearings, supra* note 57, at 819.

⁷⁴ *Hearings, supra* note 51, at 176. Lest it seem picayunish to worry about evaporation, it should be mentioned that such losses from lower basin reservoirs alone, when contemplated developments are completed, may amount to 900,000 acre-feet per year, in addition to evaporation losses under natural conditions. *Id.* at 404.

interstate reservoirs, according to the California viewpoint, merely cut down the surplus.⁷⁵

The latter solution results in splitting the losses between the states which possess the residuary rights to the water, that is, California and Arizona. But since each claims half the surplus, the burden is equal. But if evaporation is allocated in proportion to contract withdrawals from Lake Mead, California will bear the lion's share of the loss. The federal contracts under which California receives water from Hoover Dam refer to net withdrawals and make no provision for evaporation losses.⁷⁶

When Should "Surplus" be Measured?

The fourth point of difference, that of determining whether the surplus which California may claim is to be measured before or after deducting the amount that must go to Mexico, has not been argued extensively by either side. But since it is likely that all the water available to the United States will be used before Mexico approaches its 1,500,000 acre-foot limit, there is no apparent reason why California's rights to one-half of the surplus should take precedence over Arizona's similar rights. The question will be of importance only if California's claims exceed the amount of the present Government contracts, by which amount recent claims have been limited.⁷⁷

Central Arizona vs. Los Angeles and the Imperial Valley

Behind the various interpretive arguments advanced by both contestants is a sense of urgency attributable to the realization that the

⁷⁵ HARDY, *op. cit. supra* note 65, at 18.

⁷⁶ The contracts are collected in WILBUR AND ELY, *op. cit. supra* note 7, at A473-A-581.

⁷⁷ See Appendix, *infra*, note 6. It is interesting to compare the present Arizona position with that taken in the Injunction Case, 283 U.S. 423 (1931). Arizona's eminent counsel, Dean Acheson and Clifton Mathews, there argued: (1) That the uses on the Gila River, being perfected rights, were accountable under Art. III(a), and that Arizona's rights to main stream water were thereby greatly diminished; (2) That the use of the Gila amounted to 2,900,000 acre-feet annually; (3) That the apportionment proposed by § 4(a) of the Boulder Canyon Project Act gave Arizona only 2,800,000 acre-feet to cover its existing uses which were already greater than that; (4) That the Compact apportioned only 15,000,000 acre-feet of water, hence III(b) was not an apportionment; (5) That Art. III(d) of the Compact, providing that the Upper Basin must deliver 75,000,000 acre-feet in any consecutive ten year period, does not indicate that III(a) refers only to main stream water, because the 75,000,000 is entirely independent of the amount apportioned. See *Hearings, supra* note 57, at 842-849.

After changing its interpretation to exclude California from III(b) in the *Perpetuation of Testimony Case*, and having that argument rejected by the Court, Arizona reverted to the *Injunction Case* stand as to the meaning of the Compact and Act, reiterating that both documents were unconscionable. *Hearings, supra* note 57, at 842-849. For a discussion of how disadvantageous the Compact is for Arizona, and opposing ratification by that state, see D'AUTREMONT, MORE DATA ON THE COLORADO RIVER QUESTION 38-45 (1943).

2,000,000 acre-feet⁷⁸ around which the fight rages is the last major amount of water in the Southwest that is not firmly pinned down. When it is finally divided, areas then without water rights are apt to continue in that unfortunate situation indefinitely.

When the Compact was negotiated, it was assumed, on the basis of figures then available, that the Colorado could furnish some 20,500,000 acre-feet of water annually, which left a surplus of four or five million acre-feet.⁷⁹ The estimates have been revised downward to a maximum of about 19,000,000 acre-feet.⁸⁰ The Compact accounts for 16,000,000 and the Mexican Treaty for 1,500,000. The surplus for division in 1963 will amount, therefore, to only 1,500,000 acre-feet.⁸¹ Contractual claims to the water supply already exceed the total.

If Arizona had no more to back up its claim to the crucial 2,000,000 acre-feet than its interpretation of the law of the river as outlined above, its case would be rather weak; the documents favor California. But Arizona's strength is not legal; it is rather the picture of immediate need that can be presented, as against the less immediate and perhaps less poignant need of the Colossus of the West. Arizona can point to 226,000 acres now cultivated which will revert to desert if additional water is not made available, and to 725,000 acres that badly need supplemental irrigation.⁸² Without added water the state faces the spectre of an enforced migration of a pitiful horde of displaced persons. Looming in the background is the disaster to the merchants, bankers, and workers of the state that is commonly supposed to follow any agricultural regression.⁸³ To avert the cataclysm Arizona is back-

⁷⁸ Roughly this is the sum of the 1,000,000 acre-foot difference in Gila water computation and the disputed 1,000,000 acre-feet of main stream water. See Appendix, *infra*.

⁷⁹ Report of Delph E. Carpenter, Commissioner for Colorado, December 15, 1927. WILBUR AND ELY, *op. cit. supra* note 7, at A82. Some estimates ran as high as 21,000,000 acre-feet. *The Colorado River Compact: Analysis by Hon. Herbert Hoover, Jan. 27, 1923*, in WILBUR AND ELY, *op. cit. supra* note 7, at A36.

⁸⁰ U. S. Bureau of Reclamation Report, *supra* note 68, at 12. For a discussion of the downward revision see M. B. Parsons, *Limitations on Continued Colorado River Development in Arizona*, 20 ROCKY MOUNTAIN L. REV. 280 (1948). There has been considerable disagreement as to the amount of water in the river. The disparity is attributable partly to extreme variations in flow—annual discharges from 5,000,000 to 25,000,000 acre-feet have been recorded; and partly to the difficulties inherent in estimating the flow of any river. *Report and Proceedings of the Fact Finding Committee of the Upper Colorado River Basin States*, July 1938, Vol. I, pp. 65-66. The latest available figures are set forth in the Appendix, *infra*.

⁸¹ If salvaged waters are not included, the 1963 surplus may be as low as 220,000 acre-feet. See Appendix, *infra*.

⁸² Report of the Committee on Interior and Insular Affairs to Accompany S. 75 (the Bridge Canyon Project), SEN. REP. NO. 832, 81st Cong., 1st Sess. 5 (1949). Central Arizona is dependent upon underground water, and the water table has been receding since 1940 because of excessive pumping. The draft is now approximately double the recharge, and storage in the Salt River Valley has dropped from 1,560,000 acre-feet in 1941 to 393,899 in 1946. *Id.* at 6, 22.

⁸³ *Id.* at 2.

ing the Bridge Canyon Project which would provide water for the 725,000 acres.⁸⁴

California is opposed to the project for a number of relatively austere reasons. It is said that the cost is excessive;⁸⁵ the repayment scheme is inequitable and financially doubtful;⁸⁶ and the result, pumping water 987 feet high and transporting it 315 miles to raise field crops in a nation already staggering under agricultural surpluses, is sheer madness.⁸⁷ But most important of all, the water required for the project is not legally available unless Arizona's contentions with respect to the Colorado River are correct. In sponsoring the Gila project in 1948, Arizona used the last of its uncontested water; further developments are impossible without using water claimed by California.⁸⁸

Relying upon the soundness of California's claims, the people of Southern California have invested \$220,000,000 on the Colorado River Aqueduct.⁸⁹ The water that Aqueduct was designed to carry

⁸⁴ The Bridge Canyon Project, which consists principally of the Central Arizona Project, is intended to furnish 1,200,000 acre-feet of water to Arizona and New Mexico. To facilitate authorization of the project, Arizona has claimed that there is no bona fide controversy with California. *Letter of Governor Osborn of Arizona to Earl Warren, Governor of California, Hearings, supra* note 50, at 5-7. The contention seems absurd in light of the many official documents recognizing the points of difference. For instance, see the Arizona water contract of 1944, *Ariz. Laws 1944*, p. 419. Of course, the influence of completed works upon the legal decision cannot be forgotten. California already possesses works sufficient to handle its maximum claims; Arizona does not. Report, *supra* note 82, at 17.

⁸⁵ The initial cost would be \$738,000,000—five times the cost of the Boulder Canyon Project. This may be increased by \$550,000,000 for a proposed 80-mile tunnel and such hidden items as \$456,600,000 for interest on money loaned gratis and \$315,000,000 for contributed electrical energy. The initial cost per acre benefited would be over \$1000, but the value of the land upon completion would be only \$300 per acre. *Id.* at 18-29.

⁸⁶ Some \$650,000,000 of the initial cost would be repaid through charges on water and power, principally the latter. As one-third of the 770,100 kilowatts generated would be donated for project pumping, the other two-thirds must bear most of the cost. The arrangement might not work without breaching the Hoover Dam power contracts. *Ibid.*

⁸⁷ All federal reports except that of the Department of the Interior, but including that of the President, are critical. The project would bail out landowners who speculated in war boom development knowing of the water situation, and would permit development of 125,000 additional acres to the detriment of other areas. *Ibid.*

⁸⁸ Existing Arizona projects plus those under construction account for 3,600,000 acre-feet. The water for the Bridge Canyon Project would have to come, at least in part, from the 962,000 acre-feet of surplus included in the United States-California water contracts. See Appendix, *infra*. Despite the arguments of the California faction, the majority of the Senate Committee on Interior and Insular Affairs reported the Bridge Canyon bill favorably ostensibly because of the urgent need for the benefits it would provide and the great intangible value of such benefits to the state of Arizona and to the nation at large. Report, *supra* note 82, at 16-17. Apparently California is not seriously opposed to construction of works on the Colorado in so far as they are used for power production, *id.* at 13, although the value of the Bridge Canyon Dam for that purpose without further construction to handle the silt problem is questionable. Statement of W. S. Peterson, Asst. Chief Electrical Engineer, Dept. of Water and Power of the City of Los Angeles in *Hearings, supra* note 57, at 482.

⁸⁹ *Statement of Representative Clair Engle of California in NEW YORK AND LOS ANGELES WATER SUPPLY PROBLEMS 3* (Jan. 5, 1950).

is said to be essential for the development of metropolitan Los Angeles.⁹⁰ If this actually is demonstrable the equities clearly favor California.⁹¹ The same water that would benefit 25,000 people on 4,000 farms in Arizona can support 5,000,000 people in the cities of California. And Los Angeles can pay for its water, while Central Arizona farms would be irrigated largely through the grace of the American taxpayer and Southern California power users.⁹²

But California's necessity lies in the future. At present only 3,000,000 of the 4,400,000 acre-foot apportionment made by III(a) is consumed.⁹³ And there is considerable force, if negligible legal validity, in the contention that if Los Angeles ever suffers for lack of water, it will be due to the excessive interior allocation to the Imperial Valley and adjacent areas.⁹⁴

The Solution—Adjudication

It is an oversimplification to say that the equitable issue can be narrowed to whether it is better to withdraw an acre from production in Arizona, or to withdraw an acre from production in California, but that question shows the nature of the problem. It might be desirable to withdraw both acres; in a country where the urban population must continually subsidize the rural areas, it may be folly to consider spending further billions to add to the domain of the farmer. But argument over basic reclamation philosophy is endless, and some conclusion to the immediate controversy should be reached before more millions of dollars are spent building water works that will shortly be without

⁹⁰ COLORADO RIVER ASSOCIATION, CALIFORNIA AND THE COLORADO RIVER 17 (1949); METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, THE GREAT AQUEDUCT 9 (1941). It is somewhat startling that only 9% of Southern California's 50,000 square miles can ever be developed because of the shortage of water. COLORADO RIVER ASSOCIATION, *supra*, at 12. For a general survey of the water problem in Central and Southern California see de Roos, *California's Water* (in 20 parts), S. F. Chronicle, Oct. 23 through Nov. 13, 1949.

⁹¹ "Drinking and other domestic purposes are the highest uses of water." Connecticut v. Massachusetts, 282 U. S. 660, 673 (1931).

⁹² Landis, *States Rights and the Colorado Project*, 42 NEW REPUBLIC 265 (April, 1925).

⁹³ *Water Fight Rages*, Business Week, July 10, 1948, p. 32.

⁹⁴ Under the original Arizona interpretation of the law of the river, California had a right to 5,484,500 acre-feet of water annually from the Colorado. Arizona v. California, 298 U. S. 558, 564 (1936). The contracts for water from Lake Mead aggregated 123,500 acre-feet less than this estimated maximum amount. The 5,362,000 acre-feet covered by the contracts was divided as follows: water apportioned under III(a) of the Compact (4,400,000 acre-feet)—3,850,000 to agricultural groups, 550,000 to the Los Angeles Metropolitan Water District; surplus water—the next 550,000 acre-feet to the water district, and everything in excess of 4,950,000 to agricultural groups. WILBUR AND ELY, *op. cit. supra* note 7, at 106-109, discusses the struggle that resulted in this division. For a defense of the Imperial Valley and its allocation as against Central Arizona, see *Hearings, supra* note 51, at 868-891. The contrary position is argued in Carson, *Arizona's Interest in the Colorado River*, 19 ROCKY Mt. L. REV. 352 (1947).

water. The one solution that can subordinate political pressure to reason is the legal solution, and the development of that solution is for the Supreme Court.⁹⁵

There can be little doubt that the jurisdiction of the Supreme Court extends to the parties and subject matter of the Colorado River controversy.⁹⁶ The interpretation of the Project Act, the contracts made with the United States under that Act, and the Mexican Treaty is clearly a judicial question. And it has been held on several occasions that an interstate compact sanctioned by Congress becomes law, the construction of which is for the federal judiciary.⁹⁷

In the past there might have been some question whether the dispute between Arizona and California was within the oft-repeated case or controversy rule.⁹⁸ The Supreme Court has frequently declined to render declaratory judgments,⁹⁹ but present indications are that the

⁹⁵ The solution "must be a legal one, for there is really no hope that any other remedy will solve the problem." Williams, *The Colorado River and the Constitution*, 12 A. B. A. J. 839 (1926). Since the states have been unable to reach any satisfactory compromise because of the gravity of the sacrifice that is required, it is necessary to resort to independent authority. *Letter from Earl Warren, Governor of California, to Hon. Clifford P. Case, Representative from New Jersey*, in *Hearings, supra* note 50 at 4.

But for an argument that it is absurd to treat the issues as purely legal, as California is doing, and equally improper to attempt to capitalize on California's political unpopularity in the West, as Arizona is doing, and hence that a central authority is required, see Carey McWilliams, *The Colorado is Sovereign*, 168 NATION 417-418 (April 9, 1949).

The conceivable ways of settling the dispute are discussed in Comment, 2 STAN. L. REV. 334 (1950). The methods considered include interstate compact, arbitration, federal administrative action, direct or indirect Congressional settlement, and litigation before the Supreme Court. It is concluded that the judicial solution is the best and most practical approach.

⁹⁶ Article III, § 2 of the Constitution gives the federal courts power to determine controversies between two or more states. *New Jersey v. New York*, 30 U. S. 284 (1831); *Cohens v. Virginia*, 19 U. S. 264 (1821). Section 1251 of the Judicial Code, 28 U. S. C. § 1251 (1950), gives the Supreme Court exclusive jurisdiction of all controversies between two or more states.

⁹⁷ *Missouri v. Illinois*, 200 U. S. 496, 519 (1905); *Pennsylvania v. Wheeling Bridge Co.*, 54 U. S. 518, 566 (1851) (compact concerning navigation of Ohio River); *Rhode Island v. Massachusetts*, 37 U. S. 657, 724 (1838) (boundary compact). James H. Howard, General Counsel for the Los Angeles Metropolitan Water District, argues that the law of the river is contractual in nature and that the interpretation is therefore inevitably a judicial question. *Hearings, supra* note 57, at 861-884.

⁹⁸ The constitutional provisions conferring jurisdiction in all cases in which a state shall be a party are confined to proceedings of judicial cognizance. *Massachusetts v. Mellon*, 262 U. S. 447 (1922). Jurisdiction is generally limited to disputes which, between states entirely independent, might properly be the subject of diplomatic adjustment (such a situation is present where a drainage system in one state floods land in another). *North Dakota v. Minnesota*, 263 U. S. 365, 374 (1923). But it is not necessary that a situation exist that would justify war or reprisal between independent sovereigns before the jurisdiction of the Court may be invoked. *Kansas v. Colorado*, 185 U. S. 125, 143 (1901).

⁹⁹ Before the Court will intervene between states the case must be of serious magnitude and fully proved. *Colorado v. Kansas*, 320 U. S. 383, 393 (1943) (refusing to intervene where appropriations from an interstate river in the upper state had increased

Court can in fact determine the relative rights of two states to the waters of an interstate stream.¹⁰⁰ "Bound hand and foot by the prohibitions of the Constitution, a complaining State can neither treat, agree, nor fight with its adversary without the consent of Congress; resort to the judicial power is the only means left."¹⁰¹

Recently, in *Nebraska v. Wyoming*,¹⁰² the Court declared that where the claims to the water of an interstate river exceed its natural flow, the clash of interests results in a justiciable controversy under the original jurisdiction of the Court.¹⁰³ This opinion covers the instant situation almost perfectly.

The remaining hurdle is the consent of Congress to joinder of the United States.¹⁰⁴ Once that obstacle is removed the way will be open for a solution of the Colorado River controversy.

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but there had been no diminution of flow to the lower state). The Federal Declaratory Judgments Act, 28 U.S.C. § 400 (1946) (274(d) of the Federal Judicial Code), does not enlarge the jurisdiction of the Court but merely provides for a pacific declaratory remedy in cases and controversies otherwise justiciable. *United States v. West Virginia*, 295 U.S. 463 (1935).

¹⁰⁰ Where a "stream flows through two (states) and a controversy is presented as to the flow of that stream . . . the disagreement, coupled with its effect . . . makes a matter for investigation and determination by this court." *Kansas v. Colorado*, 206 U.S. 46, 95 (1906). The Court may determine the relative rights of two states to divert and use the waters of a river. *Wyoming v. Colorado*, 286 U.S. 494, 507 (1931). In *Nebraska v. Wyoming*, 295 U.S. 40 (1934) the Court declined to dismiss a bill asking for an equitable apportionment of the North Platte River where priority of appropriations in each of the two states was in issue. Where there is a concrete case admitting of an immediate and definitive determination of the legal rights of the parties in an adversary proceeding upon the facts alleged, the judicial function may be appropriately exercised. *Aetna Life Ins. Co. v. Haworth*, 300 U.S. 227, 241 (1936).

¹⁰¹ *Rhode Island v. Massachusetts*, 12 Pet. 657, 726 (U.S. 1838), quoted in *Kansas v. Colorado*, 185 U.S. 125, 144 (1901).

¹⁰² 325 U.S. 589 (1944) (granting a decree apportioning the water of the North Platte River between Nebraska, Colorado, and Wyoming).

¹⁰³ *Id.* at 610. The dissenting opinion of Mr. Justice Roberts indicates that the Court has issued a declaratory judgment and that "the precedent now made will arise to plague this court not only in the present suit, but in others." *Id.* at 657.

¹⁰⁴ See note 43 *supra*.

APPENDIX

WATER SUPPLY OF THE COLORADO RIVER

<i>Table I: Virgin Flow¹</i>	Acre-feet
Average annual virgin flow at Lees Ferry	16,270,000
Plus average annual net gain, Lees Ferry to Hoover Dam, under virgin conditions	<u>1,060,000</u>
Average annual virgin flow at Hoover Dam	17,330,000
Plus average annual tributary inflow, Hoover Dam to mouth of Gila River (excluding Gila)	150,000
Less average annual natural channel losses, Hoover Dam to mouth of Gila	<u>1,030,000</u>
Average annual virgin flow above Gila River	16,450,000
Plus average annual virgin flow of Gila River at mouth	<u>1,270,000</u>
Average annual virgin flow at international boundary	<u>17,720,000</u>

Table II: Water Supply and Requirements—Arizona and California²

The following material graphically presents the conflict between Arizona and California. The divergence in results is due primarily to the insistence by California on its full quota under the United States-California contracts, on the one hand, and Arizona's desire, on the other, to limit California to 4,400,000 acre-feet of III(a) water, plus one-half of a "surplus" that is reduced from 2,550,000 acre-feet to an insignificant 220,000 acre-feet by exclusion of all III(b) and salvaged water. The remaining discrepancy follows from differing treatment of reservoir losses.

If nothing else, the figures forcibly demonstrate that any reclamation projects in either state beyond those already completed or authorized can be carried through only at the expense of claims now made by the other state.

<i>A. Water Supply</i>	<i>Calif. Data</i>	<i>Ariz. Data</i>
1. Average annual virgin flow at international boundary	17,720,000	17,720,000
2. Plus water made available through salvage, largely on the Gila River	<u>1,330,000</u>	<u>not included</u>
3. Total amount of water available for use from the Colorado River System	19,050,000	17,720,000
4. Less allocation to Upper Basin	7,500,000	7,500,000
5. Less allocation to Mexico ³	<u>1,500,000</u>	<u>1,500,000</u>
6. Maximum available to Lower Basin ⁴	10,050,000	8,720,000
7. Less undisputed claims of Nevada, Utah, and New Mexico ⁵	430,000	430,000
8. Less Reservoir Losses	900,000	not deducted
9. Less surplus covered by III(f) of the Compact	not deducted	<u>220,000</u>
10. To be divided between Arizona and California	<u>8,720,000</u>	<u>8,070,000</u>

¹ Data from U. S. BUREAU OF RECLAMATION, *THE COLORADO RIVER* 279-285 (1946).

² Data from COLORADO RIVER ASSOCIATION, *CALIFORNIA AND THE COLORADO RIVER* 31 (1949); SEN. REP. NO. 832, 81st Cong., 1st Sess. 9 (1949); and U. S. BUREAU OF RECLAMATION, *op. cit. supra* note 1, at 184.

³ The amount required to satisfy the Mexican allocation could be as large as 1,700,000 acre-feet because of seasonal regulation losses.

⁴ Both figures on maximum lower basin water might be reduced by upper basin claims on surplus or by severe drought, when the upper basin is required only to maintain a total of 75,000,000 acre-feet for any period of ten consecutive years. This would reduce maximum figures by 1,270,000 acre-feet.

⁵ Claims of Utah and New Mexico are estimated at 130,000 acre-feet, but might be higher.

B. Water Requirements⁶

	Calif. Data	Ariz. Data
1. Water available to California under U. S. contracts (including 4,400,000 of III(a) water, plus 962,000 from "surplus")	5,362,000	
2. California under III(a) alone		4,400,000
3. Additional water available to California from "surplus"	none	110,000
4. Total water available to California	<u>5,362,000</u>	<u>4,510,000</u>
5. Disposition of water available to California:		
a. Present depletions (1946)	2,680,000	2,680,000
b. Proportionate share of reservoir loss	none	887,000
c. Further depletion by existing and authorized projects, allowable	2,682,000	943,000 ⁷
	<u>5,362,000</u>	<u>4,510,000</u>
6. Water available to Arizona (remainder after subtracting California's share from Item 10 under Water Supply, <i>supra</i>)	3,358,000	3,670,000
7. Additional water available to Arizona from surplus	none	55,000
8. Total water available to Arizona	<u>3,358,000</u>	<u>3,725,000</u>
9. Disposition of water available to Arizona:		
a. Present depletions (1946)	2,438,000	1,408,000
b. Proportionate share of reservoir loss	none	313,000
c. Further depletion by existing and authorized projects, not including Central Arizona Project, allowable	920,000 ⁸	927,000
	<u>3,358,000</u>	<u>2,648,000</u>
10. Water remaining for further developments in Arizona (Central Arizona Project)	none	1,077,000 ⁹
	<u>3,358,000</u>	<u>3,725,000</u>

THE KINGS RIVER CONTROVERSY

Many of the problems involved in the development of California's hydroelectric power potential are now before the Federal Power Commission in a proceeding brought by the Pacific Gas and Electric Company and the Fresno Irrigation District. The PG&E and the district filed conflicting requests for permission to develop certain power resources of the Kings River. The Bureau of Reclamation intervened, claiming that the area concerned is within its comprehensive plans

⁶ The experts vary as to these figures. See, for instance, the comparative table in *Hearings before Committee on Interior and Insular Affairs on S. 75 and S. J. Res. 4*, 81st Cong., 1st Sess. 189-191 (1949). Variations result from rounding figures differently and from modifying or extending the relative claims. California's claims go as high as 6,030,000 acre-feet when the contractual amount is not considered as the top limit and one-half the surplus is calculated before deducting the Mexican allocation.

⁷ Allowance of the full amount required by existing and authorized projects would cause California to exceed this figure.

⁸ Allowance of the full amount required by existing and authorized projects would cause Arizona to exceed this figure.

⁹ The Central Arizona Project calls for the diversion of 1,200,000 acre-feet; however, 123,000 of that would be recovered as return flow. SEN. REP. NO. 832, 81st Cong., 1st Sess. 5 (1949).

for the Central Valley Project.¹ The issues are complicated by the presence downstream of Pine Flat Dam, a flood control project under construction by the Army Corps of Engineers.

The commission rendered an opinion which: (1) granted licenses to PG&E for power developments in the Kings River basin on Helms Creek, North Fork, and the main channel of the river, and authorized the enlargement of the company's existing plant at Balch, also on the North Fork; and, (2) granted the district a license for hydroelectric installations at Pine Flat Dam. At the same time it denied the district's request for the identical sites asked for by PG&E.² At the request of the bureau a rehearing was granted. Pending an attempt to secure congressional authorization for the development of the upper Kings River as part of the Central Valley Project, no final decision has been rendered.³

The most vital problem that the controversy presents is the scope of a multiple-purpose project. Except for Pine Flat Dam (the Engineer's project), the sites of the Upper Kings River are useful for little other than the production of power.⁴ The bureau claims that the entire Central Valley Project is one multiple-purpose project of which individual single-purpose power projects within the basin are properly a part. The bureau reasons that it must develop the sites in question to provide power for pumping operations and revenues to aid irrigation in the Central Valley; it asks that FPC refuse the licenses under Section 7 of the Federal Power Act,⁵ which permits FPC in its judgment to reserve sites for development by the Federal Government.⁶

The FPC opinion was based on the narrow ground that the bureau's plans were technically insufficient. The proposed developments were found: (1) to be contingent upon highly doubtful congressional approval; (2) to produce a smaller amount of power than the PG&E plans; and, (3) to require a longer time for construction than the PG&E plans. President Truman earlier had rejected the bureau proposal as based upon insufficient study. Yet within six weeks the bureau rushed plans to completion and placed them before FPC.⁷ Moreover, the FPC noted that the flow on Kings River is highly vari-

¹ U. S. DEPT. OF INTERIOR: BUREAU OF RECLAMATION, CENTRAL VALLEY BASIN (1949) includes a complete statement of the bureau's plans.

² Opinion No. 183, Nov. 9, 1949.

³ This is in accord with the bureau's suggestion that at least an opportunity for action be given at this session of Congress. Opening Brief of Bureau, p. 69. The legislation will be discussed *infra* at note 43.

⁴ Opening Brief of FPC Staff Counsel, p. 26.

⁵ 41 STAT. 1067 (1920), 16 U. S. C. § 800(b) (1946).

⁶ The bureau also argues for possible benefits of cheap public power to the economy of the nation.

⁷ The Commission noted this action of the President in its opinion. See U. S. DEPT. OF INTERIOR, *op. cit. supra* note 1, at 5, for the President's report of August 15.

able and that the low-load factor power produced would have to be firmed up by a steam plant. The FPC must have observed that the bureau had for several years unsuccessfully struggled to have a Delta steam plant authorized,⁸ and had failed to secure appropriations for a development downstream at Pine Flat in 1944.⁹

The FPC in refusing to reserve the sites for federal development under Section 7¹⁰ held the bureau to the same strict economic and technical justification that would be required of a private licensee. To a contention that its plans were inadequate, the bureau pleaded that they were a first attempt and would ultimately be more comprehensive. Furthermore, the bureau claimed immunity from the strict standards of Section 7. The section literally would not require such strict standards, and perhaps holding an agency continually struggling against administrative and congressional revision to such exactitude in formulating its plans is undesirable.

What may have influenced the FPC more than anything else was that it wanted prompt construction at the sites in question. The bureau contemplated that it would need the improvements around 1960.¹¹ The PG&E promised immediate construction.¹² The FPC noted the company's immediate need for power and took the course which would furnish the most power in the shortest time. It emphasized the savings of natural resources, particularly non-replaceable fuels, that would attend quick development of hydroelectric power.

The irrigation district is also competing with the PG&E for sites and is entitled to a preference under Section 7 as a municipality.¹³ Nevertheless it was denied permits, with the commission looking at the needs that the district, like the bureau, could not satisfy—integration of low-load factor power into a large system, and speedy completion.¹⁴ The FPC properly noted that an applicant for such a small

⁸ Opening Brief of FPC Staff Counsel, p. 34, pointed out this difficulty.

⁹ See COMMITTEE ON PUBLIC ADMINISTRATION CASES, *THE KINGS RIVER PROJECT IN THE BASIN OF THE GREAT CENTRAL VALLEY* 34-44 (1949). This treatise is invaluable for a study of the interrelated controversy on the lower Kings.

¹⁰ "Whenever, in the judgment of the Commission, the development of any water resources for public purposes should be undertaken by the United States itself, the Commission shall not approve any application for any project affecting such development, but shall cause to be made such examinations, surveys, reports, plans, and estimates of the cost of the proposed development as it may find necessary, and shall submit its findings to Congress with such recommendations as it may find appropriate concerning such development." 16 U. S. C. § 800(b) (1946), 41 STAT. 1067 (1920).

¹¹ U. S. DEPT. OF INTERIOR, *op. cit. supra* note 1, at 65.

¹² Opening Brief of PG&E, p. 11.

¹³ 41 STAT. 1067 (1920), 16 U. S. C. § 800(a) (1946).

¹⁴ See Exceptions of FPC Counsel to the Recommended Decision of the Presiding Examiner, p. 16, for the conclusion that the district could not plan and order its electrical equipment within the time during which Pine Flat was being completed. The PG&E had completed this planning.

system could not devise plans by which it could conduct economical operations at the sites in question.

Pine Flat Dam, the Army Engineers' project, will reregulate the flow of Kings River for irrigation uses by providing storage below the power sites. The normal flow of the river is subject to the rights of water users;¹⁵ without Pine Flat there could be no production of water on the upper river which would not interfere with those rights.¹⁶ Since the Engineers offered no opposition, FPC used its broad power of conditioning licenses to require PG&E to reach an agreement with the downstream owners for use of the river for power purposes, and to pay compensation for the storage space utilized.¹⁷

The bureau and the district each claimed that it could integrate operations with Pine Flat Dam better than could PG&E. The district emphasized that its members were also the owners of the water rights. The bureau contended that PG&E could not legally be required to compensate anyone, as reregulation payments could not be imposed by the FPC, and that the water users had no proprietary interest in the stored water at Pine Flat to bargain away.¹⁸ The FPC opinion paid little heed to these arguments.

Basic Problems Raised by the Controversy

Four basic problems are suggested by the Kings River controversy:

1. Federal multiple-purpose planning v. licensed private power development.
2. Federal v. local administration of water resource development.
3. Application of reclamation law to Engineers' projects.
4. Jurisdiction of the Bureau and the Engineers.

Each of these problems should be examined.

1. *Federal multiple-purpose planning v. licensed private power development.* It has already been pointed out that the bureau's main

¹⁵ Brief of the Fresno Irrigation District before the FPC, p. 1.

¹⁶ Opening Brief of the Staff Counsel, pp. 11-12.

¹⁷ It imposed the conditions under §§ 10(e) and (g) of the Federal Power Act, 41 STAT. 1069-1070 (1920), 43 U.S.C. §§ 802(e), (f) (1946). The bureau had claimed that specific words of 10(e), referring to Government "property", and 10(f), providing for charges for the use of storage reservoirs, limited the general clauses.

The FPC also imposed conditions as to time of construction, protection of fish and recreational values, and for the later development of tributary streams. Order Authorizing Issuance of License of PG&E Project No. 1988, Nov. 9, 1949, pt. (B).

The bureau has evoked local opposition by claiming that it would not need to make any such payments or credit local users for their own storage payments to the extent of the power storage utilized. Opening Brief of the Staff Counsel, p. 26.

¹⁸ The bureau had even requested legislation transferring Pine Flat to it for operation. U.S. DEPT. OF INTERIOR, *op. cit. supra* note 1, at 11.

contention in the Kings River controversy has been that the river is intimately connected with the Central Valley Project, because of the need for pumping power and subsidies for irrigation.¹⁹ Had the bureau's plan been more comprehensive and likely to be approved by Congress, the FPC would have had to face this contention in its decision.²⁰

There can be little doubt that pumping power is a proper reason for multiple-purpose expansion. But in this case, the PG&E offered to trade San Joaquin power for this purpose in exchange for a similar quantity of Shasta power.²¹ Furthermore the technical difficulties and great expense of firming up the power for pumping purposes had to be considered by the FPC.²²

The need for revenues to subsidize irrigation is far more questionable. Carried to its logical extreme, such a policy would halt the licensing procedures of the Federal Power Act in any river basin where a reclamation project is authorized, and reduce the FPC, as a licensing

¹⁹ Text, *supra* note 5. See Bureau Reply Brief, p. 36, for a forceful statement that the Federal Government is undertaking a comprehensive development of the resources of the area. Also note the following remarks of Assistant Secretary of the Interior William E. Warne at the Dedication of Shasta Dam, June 17, 1950: "Because irrigation and power are inextricably linked, each depending on the other, multiple-purpose development of the Central Valley's rivers by public agencies is essential if we are to make prudent and optimum use of these water resources. That is why the Department of the Interior is now opposing PG&E's application for Federal authority to develop electric power on the Kings River."

²⁰ The bureau did not strongly urge that it would have statutory authority to develop single-purpose projects and it seems clear that statutory and even constitutional obstacles might attend such an enterprise. See *Ashwander v. Valley Authority*, 297 U. S. 288, 340 (1936) for a dictum, based on government concession, that federal works could not be constitutionally operated merely for power production. In that case, however, secondary navigation elements did furnish the needed multiple-purpose character to the project. But note *Oklahoma v. Atkinson*, 313 U. S. 508 (1941) where the question in issue was expressly left open and where a dam constructed mainly for power purposes was upheld as a proper part of a flood control project even where a non-navigable portion of a tributary was involved and benefits were conjectual. Also see *United States v. Commodore Park*, 324 U. S. 386 (1945) and *United States v. Chicago, M., St. P., & P. R. R.*, 312 U. S. 592 (1941), stating a federal proprietary right in navigable waters. It is arguable that this "ownership", at least in the case of navigable waters, might allow disposition of the energy in them as a sale of Government property. At best this is a relatively unexplored field of constitutional law.

It is clear that such a project could not be authorized within the pattern of existing reclamation law. See Reclamation Project Act of 1939, 53 STAT. 1187 (1939), 43 U. S. C. 485h (1946) authorizing power development as an *incidental* function; *cf.* *Burley Irrigation District v. Ickes*, 116 F. 2d 529, 530 (D. C. Cir. 1941). Only in its oral argument did the bureau claim that such authorization was possible. Tr. 1508. But see *Kuđer*, *ante* at 638, 648-651, for a rejection of these claims.

²¹ PG&E Opening Brief, p. 24. The bureau attacked this offer as a "self-serving" statement. Bureau Reply Brief, p. 24.

²² See Exceptions of FPC Staff Counsel to the Recommended Decision by the Presiding Examiner, pp. 21-40. The FPC ruled that the bureau possessed sufficient power at Shasta for this purpose.

agency, to a role of subservience to the bureau.²³ A subsidy of irrigation at the expense of power is concededly authorized as multiple-purpose projects;²⁴ on the other hand it would be unwarranted to use independent single-purpose projects for this purpose.²⁵ Not only may a power subsidy result in overall revenue losses through failure to consider tax losses and use realistic interest rates, but it is also possible that an undue burden may be placed on a limited class of power users to provide a subsidy more properly taken from general revenues.²⁶

²³ Reply Brief of FPC Staff Counsel, p. 7.

²⁴ See § 2 of the 1940 Rivers and Harbors Act, 54 STAT. 1198, 1199, reauthorizing the Central Valley Project and providing for the production of electrical energy "as a means of financially aiding and assisting such undertakings". See Reply Brief of FPC Staff Counsel, p. 12. This subsidy would be accomplished in the Kings River projects by an allocation to power of the remainder of the \$73,523,000 above the \$16,858,800 allocated to irrigation (on which no interest is by law collectible) and by a practice of crediting the interest collected from power to the irrigation component. Exceptions of FPC Staff Counsel to the Recommended Decision of the Presiding Examiner, pp. 5-6. It has been stated that the bureau wants the Kings River power revenues to subsidize the San Luis West Side Irrigation Development, a part of Central Valley although not of the project, where otherwise irrigation could not be financed. See S. F. News, March 30, 1950, § 2, p. 2, col. 1.

²⁵ Reply Brief of the FPC Staff Counsel, pp. 12-13 that no such federal policy exists and that the FPC has questioned the wisdom of subsidizing irrigation projects from the power revenues of separate multiple-purpose projects. Also see COMMITTEE ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON REVOLVING FUNDS AND BUSINESS ENTERPRISES OF THE GOVERNMENT (Appendix J) 30-31, criticizing "concealed" subsidies by insufficient allocations and the use of interest-free funds.

²⁶ It was probably partly for these reasons that FPC refused to give effect to a first-form reclamation withdrawal, under § 3 of the Reclamation Act of 1902, 32 STAT. 388 (1902), 43 U. S. C. § 416 (1946), for power use by the Secretary of the Interior. The FPC treated the withdrawals as valid but found that any proper use for power, even if not by the Government, would satisfy the condition of the withdrawals. It did not discuss the bureau contentions that these withdrawals were power withdrawals for the special purpose of producing revenue in aid of irrigation.

It had been argued that reclamation law did not extend to a use solely for power inasmuch as the Act refers only to "irrigation works." PG&E Opening Brief, p. 34.

Section 4(e) of the Federal Power Act, 41 STAT. 1065, 16 U. S. C. § 797(e) (1946) seems to support the FPC finding: ". . . licenses shall be issued within any reservation only after a finding by the commission that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired, and shall be subject to and contain such conditions as the Secretary of the department under whose supervision such reservation falls shall deem necessary for the adequate protection and utilization of such reservation." It was claimed by the bureau that the licenses could not be issued because protection of the reservation by conditions was impossible. Thus the effect of such withdrawals remains uncertain.

A contention of the bureau that the FPC had lost jurisdiction under § 7(b) and 4(e) of the Federal Power Act, requiring the commission to report to Congress when sites or Government dams respectively can be used advantageously by the United States, was dismissed even more summarily. The bureau's authority, *Savannah River Electric Company v. Federal Power Com'n*, 164 F.2d 408 (4th Cir. 1947) was distinguished by the staff counsel as a case where the project involved was not only proposed but was also under construction and it was suggested that the matter was one of discretion rather than of jurisdiction. This seems clear at least in the case of Section 7(b), which refers to the "judgment" of the commission. Reply Brief of the FPC Staff Counsel, pp. 16-18.

2. *Federal v. local administration of water resource development.*

The Fresno Irrigation District is also competing with the bureau for power projects at Kings River. Although it was denied some sites awarded to PG&E in the FPC decision, it was awarded a permit for power production at Pine Flat over bureau opposition. The integration problem already discussed is present here. If basin development under federal auspices can proceed without federal ownership of every element within the basin, the bureau's position is without merit. The solution depends upon the resolution of the Government's role in the Central Valley—builder only, or permanent proprietor. This question must be resolved that local capital, public or private, may be channeled into a realm of defined responsibility.²⁷

3. *Application of reclamation law to Engineers' projects.* Considerable confusion exists as to whether reclamation law applies to flood control projects of the Corps of Engineers that are used "incidentally" for irrigation. There is a widespread belief that the 160-acre limitation, anti-speculation safeguards, and public preferences of reclamation law do not apply. This belief has encouraged private power interests and large landowners to favor construction by the Engineers rather than by the bureau.²⁸

Section 8 of the Flood Control Act of 1944²⁹ was thought by its

Perhaps this controversy is merely a phase of the recurrent battle as to whether private power, controlled and integrated by FPC licensing, can fulfill the public interest to the same extent as public power. In California, this may be considered the third stage of a prolonged struggle between the bureau and PG&E. In the first period, from 1922 to 1936, the company sought to maintain its near monopoly as *producer* of power, by opposition to the power features of the Central Valley Project. Following the construction of Shasta and Keswick dams, it sought to maintain its near monopoly as *distributor* of power, by opposition to public transmission lines and the Antioch steam plant. In the present controversy the bureau has taken the lead by opposing private production and distribution of new power within the Central Valley watershed. MONTGOMERY AND CLAWSON, *HISTORY OF LEGISLATION AND POLICY FORMATION OF THE CENTRAL VALLEY PROJECT* 179-201 (1946).

²⁷ See *id.* at 107-128 for a detailed account of the origin and development of the question.

²⁸ *Id.* at 233; COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 13; U. S. DEPT. OF INTERIOR, *op. cit. supra* note 1, at 10. Local power interests would take the same point of view since the engineers do not engage in power production.

²⁹ 58 STAT. 891 (1944), 43 U. S. C. § 390 (1946). "Hereafter, whenever the Secretary of War determines, upon recommendation by the Secretary of the Interior, that any dam and reservoir project operated under the direction of the Secretary of War may be utilized for irrigation purposes, the Secretary of the Interior is authorized to construct, operate, and maintain, under the provisions of the Federal reclamation laws . . . such additional works in connection therewith as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in said Federal reclamation laws and after subsequent specific authorization of the Congress by an authorization Act; . . . Dams and reservoirs operated under the direction of the Secretary of War may be utilized hereafter for irrigation purposes only in conformity with the provisions of this section"

advocates to apply reclamation law to the Engineers' projects,³⁰ but there was considerable confusion among the members of the Senate as to whether the section accomplished this.³¹ It would appear from its wording that specific congressional authorization for the construction of irrigation works may be a condition precedent for the application of reclamation law, yet undoubtedly only the Interior Department could build such works. A further complication arises in the Kings River basin because all needed irrigation works are already built and privately operated.³² Section 8 does not seem to cover such a situation despite the contention of the bureau to the contrary.³³ Moreover, the bureau has no way of controlling releases of water from Pine Flat to exclude those who have not agreed to receive water under reclamation law.³⁴ The bureau, over Engineer opposition, tried to postpone construction at Pine Flat, pending negotiation of such an agreement, to no avail.³⁵

4. *Jurisdiction of the Bureau and the Engineers.* Although not directly at issue in the present case, there would have been no controversy as far as Pine Flat Dam is concerned, had there been only one federal agency with well-defined responsibilities to construct and provide for the operation of water resources projects. The Fresno Irrigation District, over objections by the Reclamation Bureau, was granted power rights at the Pine Flat Dam, an Army Engineer "flood-control" project. The bureau, however, has sought control over the operation

³⁰ See MONTGOMERY AND CLAWSON, *op. cit. supra* note 26, at 237-238. It is to be noted that the section does not purport and was not intended to apply reclamation law to Engineer projects already constructed in whole or in part. Secretary Ickes advised President Roosevelt to sign the Flood Control bill (which also authorized construction of Pine Flat by the Army Engineers rather than by the bureau) only because it contained this provision and Section 5 (Interior Department disposal of power from army flood-control projects). See COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 46-47.

³¹ MONTGOMERY AND CLAWSON, *op. cit. supra* note 26, at 237-238.

³² COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 50.

³³ It has been said that the Engineers announced this position to court favor with local interests. They apparently have backed down as to this claim in regard to Kings River, under strong pressure from the President, but still assert it as to other projects. *Id.* at 51-53. See the Bureau's Opening Brief, p. 20.

Another issue is the controversy over the equally doubtful provisions of § 5 which would require distribution by the Secretary of the Interior of "electric power . . . generated at reservoir projects under the control of the War Department and . . . not required in the operation of such projects . . ." Although not considered by the FPC at the first hearing because the question was not argued, the section at least raises serious doubts as to the validity of the Fresno Irrigation District's permit at Pine Flat.

³⁴ It is estimated that at least 50% of the benefits will occur merely from the construction of the dam. It is further predicted that the Engineers would probably succumb to local pressure to govern flood control releases so as to provide irrigation benefits. COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 59.

³⁵ *Id.* at 58-59. Opposition of the Kings River water users is intensified by the negligible amount of new water to be received from the improvements—six per cent according to the staff counsel's estimates. Opening Brief of FPC Staff Counsel, p. 10.

of Pine Flat.³⁶ The state of California and many local interests, however, have declared themselves in favor of continued control by the Engineers.³⁷

What is the basis of this controversy? The Bureau of Reclamation, expanding a jurisdiction based on irrigation and development of arid lands, and the Corps of Engineers, expanding a jurisdiction based on flood control and the improvement of navigation, have clashed head on.³⁸ The Engineers have been allowed an opportunistic role of piecemeal development going far beyond "flood-control".³⁹ The bureau, with its own comprehensive program, is forced into the role of competitor. According to the Hoover Commission, this dualism results in duplication of effort, confusion, and competitive legislative bidding by each agency for projects and funds.⁴⁰ Yet many state and local groups continue to favor Engineer developments, because they believe them to be free from the acreage limitation, the anti-speculation safeguards, and the public agency preferences of reclamation law.⁴¹

³⁶ U. S. DEPT. OF INTERIOR, *op. cit. supra* note 1, at 11.

³⁷ See *id.* at 297, for comments of the State of California favoring Engineer development. Local interests opposed bureau development, with the exception of the State Grange and the California Federation of Labor. Opening Brief of FPC Staff Counsel, pp. 26-27. Also see COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 12-13.

³⁸ See COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 8, 4-12 for a survey of the background and traditions of the two agencies.

³⁹ See MONTGOMERY AND CLAWSON, *op. cit. supra* note 26, at 232-233 for cited criticism and discussion of Engineer projects along these lines. See COMMITTEE ON ORGANIZATION OF THE EXECUTIVE BRANCH OF GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES PROJECTS (Appendix K) 11-12, for the conclusion that flood control is often *de minimis* at Engineer Projects—it was concluded to have been only 1% of the retardation of the stream flow at Bonneville.

⁴⁰ *Id.* at 20, 40-42. Even expensive surveys are duplicated. Other sources concur in this conclusion. See VIEWS OF THE STATE OF CALIFORNIA ON ELEMENTS OF A NATIONAL WATER RESOURCES POLICY SUBMITTED TO THE PRESIDENT'S WATER RESOURCES POLICY COMMISSION 60-62 (June 1950). This study reaches the conclusion that poorly made plans are rushed to authorization to cut out the competing agency. Since 1940 the agencies have engaged in a running legislative battle, marked by the Engineer victory in the Flood Control Act of 1944 in which it was authorized to build Pine Flat. Particularly noticeable has been a traditionally close liaison between Congress and its Engineer "consultants", and between the bureau and the Executive Office of the President; the Engineers have resisted executive control. Also both agencies deal with different Congressional Committees. All of this leads to continual quibbling, misunderstanding, and cross purposes. See COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, especially at 7-12.

⁴¹ Also the Engineers allow local agencies to administer their projects, while the bureau tends to administer its developments at least for a long term of years. There is less repayment required under Engineer projects since they have a greater calculated proportion of non-reimbursable flood control benefits. MONTGOMERY AND CLAWSON, *op. cit. supra* note 26, at 232-233; COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 22-24.

Conclusion

In view of the many factors involved in water policy determination in California, it is difficult to pass judgment upon the current case. In view of the international crisis, it is certainly proper in a growing industrial community, to emphasize comprehensive power development of water resources over the claimed advantages of multiple-purpose planning, if indeed multiple-purpose planning is involved here at all. In so far as the present dispute will serve to promote greater standards of exactitude and comprehensiveness in the planning of government construction agencies, it is commendable. It is to be expected that examination of the bureau's plans by an agency whose stock in trade is efficiency and precision might be technical and exact. Yet the FPC was not clear as to why the bureau's broad claims as to the advantages of public development at these sites were not worthy of attention. It contended itself with characterizing the bureau's plans as lacking "demonstrable advantage." Probably a more explicit rejection of the bureau claims would have been in order for a matter of such importance.

It must be realized, however, that the momentous problem of reconciling public and private development is beyond the range of effective action by any administrative agency. It is unfortunate that the FPC must assume a role as arbiter of the claims of public and private power.⁴² In a field so heavily laden politically, continual congressional intervention and revision is necessary and even desirable. There is pending in the House of Representatives, the White bill,⁴³ which in effect would reverse the decision of the FPC by authorizing both the upper Kings and Pine Flat projects as bureau developments under the reclamation laws.⁴⁴ Yet a project by project approach may be too

⁴² See Lewis, *The Role of the Federal Power Commission Regarding the Power Features of Federal Projects*, 14 GEO. WASH. L. REV. 96, 104-105 (1945) for the conclusion that it is bad policy to place the FPC in the embarrassing position of controlling the projects of a competing agency.

⁴³ H. R. 9632, 81st Cong., 2d Sess. (1950), first introduced as H. R. 5264, 81st Cong., 1st Sess. (1949). Mrs. Douglas introduced similar legislation. H. R. 6919, 81st Cong., 2d Sess. (1950). It is doubtful that either bill will pass. The House Rules Committee is said to be hostile and the California Senators have expressed disfavor of similar projects. S. F. News, March 30, 1950, sec. 2, p. 2, col. 1. But committee approval of the Folsom Dam bill in both houses may have brightened the White bill's chances. S. F. News, June 21, 1950, sec. 2, p. 2, col. 8. However, it should be noted that the Folsom project is definitely a multi-purpose project.

⁴⁴ The bill would also authorize the bureau to purchase PG&E's existing Balch plant, repayment to be made in power. This provision for repayment in power is a curious one. The bureau has consistently tried to eliminate PG&E as a middleman distributor of Shasta power; yet this method of repayment would make PG&E a middleman distributor in the Kings River area. If PG&E refused to sell, the bureau would be authorized to condemn the plant.

narrow, especially when it will involve repeated clashes by the partisans of conflicting agencies.

A broader approach is needed. The conflict of jurisdictions, the uncertainty of law, and the lack of administrative standards that produce excessive piecemeal legislative intervention with the sacrifice of consistency should be remedied. The bureau and the Engineers should at least be put under the same substantive law governing multiple-purpose projects, and some independent agency given the role of determining whether "flood-control" or "irrigation" is in fact the predominating consideration.⁴⁵ Congress should provide an overall administrative regulation of water resources in some one water resources agency.⁴⁶

Past attempts have created organizations that were advisory rather than supervisory. The Federal Power Commission, as it was from 1920 to 1930 when it consisted of the Secretaries of Interior, Agriculture, and War, could provide some of the supervision needed. The Water Resources Committee of the National Resources Planning Board made commendable progress with its procedures for local representation until its abolition by Congress in 1943.⁴⁷ The Federal Inter-Agency Basin Committee was a regression; hamstrung by procedure, it has made little progress.⁴⁸

⁴⁵ See COMMITTEE ON ORGANIZATION OF THE EXECUTIVE BRANCH, *op. cit. supra* note 39, at 48, for a conclusion that the FPC or a newly created water resources board should independently calculate benefits and screen. At present the FPC generally fixes rates and allocates costs at Engineer but not at bureau projects. COMMITTEE ON ORGANIZATION OF THE EXECUTIVE BRANCH, *op. cit. supra* note 25, at 28-29.

Another part of the report spoke of a broader need for a screening board to review all agency projects and present impartial figures, properly correlated, as a basis for congressional action. Congress now hears far too many voices raised as to what are the facts. *Id.* at 1, 16.

The Committee on Organization argued that the Army has no proper role in water development in the West other than mere approval of the navigation aspects of projects, and recommended that the civil responsibilities of the Engineers be transferred to the Interior Department. REORGANIZATION OF THE DEPARTMENT OF THE INTERIOR 35 (1949).

The so-called "Folsom formula," which grew out of the Folsom Dam controversy, would make all multiple-purpose projects the responsibility of the bureau and flood control projects the responsibility of the Engineers in so far as operation is concerned. The Engineers might of course be given construction duties. See U. S. DEPT. OF INTERIOR, *op. cit. supra* note 1, at 5.

⁴⁶ See THE COMMISSION ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, REORGANIZATION OF THE DEPARTMENT OF THE INTERIOR 2, 4, 15 (1949), advising creation of a board of impartial analysis for engineering and architectural projects in the President's office, and advising integration of all water resources administrative and survey functions in a water development and use service section of the Department of the Interior.

⁴⁷ See COMMITTEE ON PUBLIC ADMINISTRATION CASES, *op. cit. supra* note 9, at 10-12.

⁴⁸ *Ibid.* Lack of a permanent staff, the requirement of a unanimous vote of the agencies represented, and no liaison with the Executive Office of the President are the defects of the committee.