

COLORADO RIVER STORAGE PROJECT

REPORT
OF THE
COMMITTEE ON INTERIOR AND
INSULAR AFFAIRS
HOUSE OF REPRESENTATIVES
TOGETHER WITH
MINORITY VIEWS
TO ACCOMPANY
H. R. 3383

A BILL TO AUTHORIZE THE SECRETARY OF THE
INTERIOR TO CONSTRUCT, OPERATE, AND MAIN-
TAIN THE COLORADO RIVER STORAGE PROJECT
AND PARTICIPATING PROJECTS, AND FOR OTHER
PURPOSES



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AUTHORIZING THE SECRETARY OF THE INTERIOR TO CONSTRUCT,
OPERATE, AND MAINTAIN THE COLORADO RIVER STORAGE
PROJECT AND PARTICIPATING PROJECTS

JULY 8, 1955.—Committed to the Committee of the Whole House on the State
of the Union and ordered to be printed

Mr. ENGLE, from the Committee on Interior and Insular Affairs,
submitted the following

R E P O R T

[To accompany H. R. 3383]

The Committee on Interior and Insular Affairs, to whom was referred the bill (H. R. 3383) to authorize the Secretary of the Interior to construct, operate, and maintain the Colorado River storage project and participating projects, and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill do pass.

The amendments are as follows:

AMENDMENTS TO H. R. 3383

Page 1, lines 4 to 6 inclusive, strike the words:

, the Congress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States and with the Indian tribes, and to make all needful rules and regulations respecting property belonging to the United States, and

Page 2, lines 7 and 8, strike the words "and for the improvement of navigation".

Page 2, line 8, following the word "and", insert the word "for".
Strike the comma following the word "power".

Page 2, line 9, following the word "purposes," strike the words "hereby authorizes".

Page 2, line 10, following the word "Interior", insert the words "is hereby authorized".

Page 2, line 14, strike the words "Echo Park,". Following the words "Flaming Gorge", insert the words ", Navajo (dam and reservoir only),

Page 3, line 10, following the word "Silt," insert the word "and". Strike the comma following the words "Smith Fork" and insert a period in lieu thereof.

Pages 3, 4 and 5, strike everything beginning on page 3, line 11, through page 5, line 7. Insert in lieu thereof the following new language:

SEC. 2. In carrying out further investigations of projects under the Federal reclamation laws in the upper Colorado River Basin, the Secretary shall give priority to completion of planning reports on the Gooseberry, San Juan-Chama, Navajo, Parshall, Troublesome, Rabbit Ear, Eagle Divide, Woody Creek, West Divide, Bluestone, Battlement Mesa, Tomichi Creek, East River, Ohio Creek, Fruitland Mesa, Bostwick Park, Grand Mesa, Dallas Creek, Savery-Pot Hook, Dolores, Fruit Growers Extension, Animas-LaPlata, and Sublette participating projects. Said reports shall be completed as expeditiously as funds are made available therefor and shall be submitted promptly to the affected States and thereafter to the President and the Congress: *Provided*, That with reference to the plans and specifications for the San Juan-Chama project, the storage for control and regulation of water imported from the San Juan River shall (1) be limited to a single off stream dam and reservoir on a tributary of the Chama River, (2) be used solely for control and regulation and no power facilities shall be established, installed or operated thereat, and (3) be operated at all times by the Bureau of Reclamation of the Department of the Interior in strict compliance with the Rio Grande Compact as administered by the Rio Grande Compact Commission. The preparation of detailed designs and specifications for the works proposed to be constructed in connection with projects shall be carried as far forward as the investigations thereof indicate is reasonable in the circumstances.

SEC. 3. It is not the intention of Congress, in authorizing only those projects designated in section 1 of this Act, and in authorizing priority in planning only those additional projects designated in section 2 of this Act, to limit, restrict, or otherwise interfere with such comprehensive development as will provide for the consumptive use by States of the upper Colorado River Basin of waters, the use of which is apportioned to the upper Colorado River Basin by the Colorado River Compact and to each State thereof by the upper Colorado River Basin Compact, nor to preclude consideration and authorization by the Congress of additional projects under the allocations in the compacts as additional needs are indicated.

Page 5, line 8, renumber "SEC. 3." as "SEC. 4."

Page 6, line 16, renumber "SEC. 4." as "SEC. 5."

Page 6, line 21, strike the numeral "7" following the word "section" and insert in lieu thereof the numeral "8".

Page 6, line 23, strike the numeral "7" following the word "section" and insert in lieu thereof the numeral "8".

Page 8, line 2, strike the numeral "5" following the word "section" and insert in lieu thereof the numeral "6".

Page 8, line 8, strike the numeral "5" following the word "section" and insert in lieu thereof the numeral "6".

Page 8, line 21, strike the numeral "5" following the word "section" and insert in lieu thereof the numeral "6".

Page 9, line 20, renumber "SEC. 5." as "SEC. 6."

Page 9, line 23, strike the numeral "7" following the word "section" and insert in lieu thereof the numeral "8".

Page 10, line 16, renumber "SEC. 6." as "SEC. 7."

Page 11, line 9, renumber "SEC. 7." as "SEC. 8."

Page 12, line 6, renumber "SEC. 8." as "SEC. 9."

Page 12, line 14, renumber "SEC. 9." as "SEC. 10."

Page 12, line 15, strike the words "Echo Park" and insert in lieu thereof the word "Navajo".

Page 12, line 19, renumber "SEC. 10." as "SEC. 11."

Page 12, line 22, renumber "SEC. 11." as "SEC. 12."

Page 12, line 25, strike the figure "\$1,055,000,000" and insert in lieu thereof the figure "\$760,000,000".

Page 12, following line 25, insert the following new section:

SEC. 13. The Secretary of the Interior of the United States is hereby authorized and directed to negotiate with the city and county of Denver, Colorado, or any other municipality or governmental subdivision in the State of Colorado, on the procedure for and the feasibility of a program which would authorize the said Secretary of the Interior to convey to the city and county of Denver, Colorado, or any other municipality or governmental subdivision in the State of Colorado, for use as a part of its municipally owned water system, such interests in lands and water rights used or acquired by the United States solely for the generation of power, and such other property of the United States as shall be required in connection with the development or use of such municipal water system. The said Secretary of the Interior shall report his findings and recommendations to the Congress of the United States as soon as possible, but not later than March 1, 1956: *Provided*, That in making his report the said Secretary of the Interior shall recommend a formula governing the charges to be made for any such conveyance.

Page 13, line 1, renumber "SEC. 12." as "SEC. 14."

Page 13, line 13, renumber "SEC. 13." as "SEC. 15."

Page 14, line 3, renumber "SEC. 14." as "SEC. 16."

Page 14, line 10, renumber "SEC. 15." as "SEC. 17."

H. R. 3383 was introduced by Mr. Aspinall. Similar bills were introduced by Messrs. Rogers of Colorado, Dawson of Utah and Fernandez. Twelve days of public hearings on this legislation were held by the committee and 6 days of executive sessions were spent in marking up the bill. Some 68 witnesses were heard, including Members of the Senate and House of Representatives, Department officials and officials of the upper Colorado River Basin States. Testimony submitted to the committee during hearings comprises 1,148 pages.

COMMITTEE'S CONCLUSIONS

The committee's conclusions relate only to the units herein recommended for authorization to meet the initial requirement for river regulation and storage and the initial need for participating irrigation projects; and units and participating projects not herein recommended are without prejudice at such time that consideration is given to further needs and requirements.

The committee concludes that the storage units and participating irrigation projects herein recommended for authorization will accomplish the initial requirement in the upper basin for storage for river regulation and will meet the most pressing needs for developing the upper basin's land and water resources. The committee has given consideration to all participating projects on which planning reports have been completed and submitted to Congress.

The committee concludes that the storage units and participating projects herein recommended for authorization together comprise sound and feasible development from both an engineering and economic standpoint.

The legislative proposals made herein are in general accord with the established policy followed by the Congress in connection with Federal reclamation projects for the last 50 years. In some respects the provisions of this bill are more conservative than established policy. The repayment required under provisions of this bill is designed to insure the concurrent return to the Treasury of expenditures for power, irrigation, municipal and industrial water supply purposes. Expenditures

ready market for the electric energy which would be available from the power facilities herein authorized.

With respect to agricultural surpluses, the committee concludes that, in view of the types of crops involved, the long-range nature of the construction program in the upper Colorado River Basin, and the anticipated future demands for agricultural products, there is no basis for the concern that the projects herein authorized will contribute to agricultural surpluses.

PURPOSE OF THE BILL

This legislation would permit orderly development of the land and water resources of the upper Colorado River Basin. First, the legislation would authorize a series of holdover storage reservoirs with hydroelectric plants and incidental works. Second, it would authorize a number of irrigation projects. Third, it would authorize priority in planning for a number of additional irrigation projects. The legislation recognizes that the units and projects authorized and the additional projects named for planning constitute only an initial phase of a comprehensive plan for development of the water resources apportioned to the upper basin and that the legislation is not intended to limit or preclude, in the future, as additional needs are indicated, authorization by the Congress of other projects for the use of waters apportioned to the upper basin States under the Colorado River compact.

BACKGROUND

The comprehensive basin plan for developing the land and water resources of the upper Colorado River Basin is the direct result of many years of thorough investigation by the Bureau of Reclamation in cooperation with the States of the upper basin and with other Federal agencies and departments of Government. The necessity for and the foundation of the overall plan of development of the water resources of the upper basin is to be found in the historical, geographical, physical, climatic, and economic conditions peculiar to that region. The Colorado River is an erratic stream. The periods of high flow do not coincide with the periods of greatest demand on its waters. Large holdover reservoirs, like Lake Mead behind Hoover Dam which stores and regulates water for use in the lower basin, are needed in the upper basin for storing water during years of high flow for use during subsequent years of low stream discharges, as well as to serve on a seasonal basis. By these large storage reservoirs the flows of the river can be equated from year to year and the maximum amount of water utilization can be accomplished on a long-term basis.

The Colorado River compact of 1922 divides the Colorado River Basin into two parts, the upper basin, comprising those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming—

within which and from which waters naturally drain into the Colorado River system above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River system which are now or shall hereafter be beneficially served by waters diverted from the system above Lee Ferry (Colorado River compact, art. II (f))—

and the lower basin, comprising—

those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River system

below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River system which are now or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry (Colorado River compact, art. II (g)).

Article III (a) of the compact apportions to each basin in perpetuity—

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

Article III (d) of the compact provides that the—

States of the upper division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75 million acre-feet for any period of 10 consecutive years * * *.

The Colorado River compact and the Boulder Canyon Project Act (45 Stat. 1057) became effective in 1929 upon ratification of the compact by all States other than Arizona, the enactment of the California Limitation Act, and proclamation by the President.

The upper Colorado River Basin compact of 1948 apportions among the States of Arizona, Colorado, New Mexico, Utah, and Wyoming the consumptive use of waters apportioned to the upper basin by the Colorado River compact of 1922.

After the Colorado River compact and the Boulder Canyon Project Act became effective, lower basin development proceeded at a rapid pace with construction of the Hoover Dam and the Boulder Canyon project, Parker Dam, Davis Dam, and other works. Large populations in cities such as Los Angeles and San Diego, and extensive agricultural areas served by the Imperial Irrigation District, the Palo Verde District, and others have created expanding uses of the waters of the Colorado River for domestic, industrial, and agricultural purposes.

Development in the upper basin States of the water resources apportioned to that area by the original compact has been retarded while a comprehensive plan for the most efficient use of the upper basin's share of the water has been in preparation, while the investigation and selection of the best dam sites has been underway, and while engineering and economic problems have been considered. Completion of the upper Colorado River Basin compact in 1948 has permitted the formulation of the comprehensive basin plan mentioned above whereby the upper basin States could eventually use all the water of the Colorado River system allotted to them. Under this plan, sufficient holdover storage capacity would be provided in the upper basin to enable it to meet its commitment to the lower basin required by the Colorado River compact of 1922 and at the same time permit the upper basin States to make full use of their apportioned share of the water.

The upper basin comprises an area of some 110,000 square miles. On its fringes lie such large centers of population as Denver, Salt Lake City, and Albuquerque, each of which has experienced rapid growth in recent years and each of which anticipates additional significant growth, with an ever-increasing and urgent need for water and power. Growth within the basin itself has been rapid during recent years. The upper basin proper has been primarily an agricultural area; however, it contains valuable mineral resources which are becoming more important to our national welfare and economy. The mineral resources in the upper basin include uranium, vanadium, iron, co-

development of mineral resources and other industrial expansion in the area in recent years, and the increased population as a result thereof, have taxed to the extreme the municipal and industrial water supply facilities in many localities. The demand for municipal and industrial water in the project area is increasing rapidly. The Colorado River is the last water resource available in many parts of the area to supply additional water for municipal and industrial purposes. The future growth and development of the municipalities and their industries is therefore dependent to a large extent upon this comprehensive basin plan. The area stands on the verge of great industrial growth, with consequent increase in need for water for domestic, industrial, and agricultural purposes as well as for power.

Testimony given to the committee by representatives of all the upper Colorado River Basin States left no doubt that the future of these States is dependent upon the plan which would be initiated by this legislation or one similar thereto. This plan would make possible the utilization of the area's abundant natural resources and enrich the economy of the area and the Nation. Without it, development of these resources will be hampered and growth will be slow.

PLAN OF DEVELOPMENT

The initial phase of the comprehensive plan to develop the land and water resources of the upper Colorado River Basin, both in terms of storage units and irrigation projects, would be authorized by this legislation. The storage provided with the consequent river regulation would permit the development of irrigation projects to go forward in an orderly manner. The initial irrigation projects would result in the irrigation of about 132,000 acres of new land and a supplemental water supply for an additional 234,000 acres, as indicated in table 1. A great new source of hydroelectric power would be provided to meet the need of the expanding economy of the area. In conjunction with the reclamation projects, municipal and industrial water would be furnished to many towns and cities. In addition, the plan would create new recreational facilities and substantial benefits to fish and wildlife.

The storage units which would be authorized are Flaming Gorge, Navajo, and Glen Canyon. In addition, the Curecanti unit would be authorized subject to a finding of feasibility and report to Congress. The irrigation projects, referred to as participating projects, which would be authorized are: Central Utah (initial phase), Emery County, Florida, Hammond, La Barge, Lyman, Paonia (including the Minnesota unit), Pine River Extension, Seedskadee, Silt, and Smith Fork. A brief description of these storage units and participating projects follows:

STORAGE UNITS

Curecanti (modified plan)

The Curecanti unit would consist of a reservoir on the Gunnison River formed by the Blue Mesa Dam below the town of Gunnison, Colo., and of three downstream reservoirs respectively referred to as the Narrow Gauge, Morrow Point, and Crystal Reservoirs. The bill limits the water-surface elevation of the reservoir formed by Blue Mesa Dam to 7,520 feet. At this water-surface elevation, the ca-

capacity of the reservoir is estimated at 940,000 acre-feet. The units of downstream reservoirs would be primarily for the development of power head with only nominal active storage capacities. Sufficient active capacity would be provided at the Morrow Point site for some seasonal regulation of stream inflows below Blue Mesa Dam.

Flaming Gorge

The principal feature of the Flaming Gorge unit is the dam, which will be located on the Green River in Utah, about 32 miles north of Vernal, and which would be a concrete, gravity-type structure rising 440 feet above the river. Flaming Gorge Reservoir formed by the dam would have a total capacity of 3,940,000 acre-feet. The power-plant at the dam would have a capacity of 72,000 kilowatts.

Navajo

The Navajo Dam would be located on the San Juan River in northwestern New Mexico about 34 miles east of the town of Farmington. The dam would be a rolled, earth-filled embankment rising 335 feet above streambed. Navajo Reservoir would have a total capacity of 1,450,000 acre-feet. The dam and reservoir will provide for gravity diversion for white and Indian lands to be irrigated under the Navajo project. Also, in connection with the San Juan-Chama project, the reservoir would constitute a source of supply for downstream irrigation users in exchange for natural flow diverted upstream.

Glen Canyon

The Glen Canyon Dam would be located on the Colorado River in northern Arizona, about 13 miles downstream from the Utah-Arizona State line and 15 miles upstream from Lee Ferry—the division point between the lower and upper basins. It would be a concrete, curved gravity-type structure rising 700 feet above bedrock. The reservoir with a total capacity of 26 million acre-feet, would provide firm regulation for deliveries to the lower basin under the Colorado River compact. The powerplant would be located near the toe of the dam. It would have a total installed capacity of 800,000 kilowatts.

PARTICIPATING PROJECTS

Central Utah

The Central Utah project (initial phase) is located in the eastern Bonneville Basin in central Utah and in the Uinta Basin, part of the Colorado River Basin in northeastern Utah. The plan would include construction of the Strawberry aqueduct along the south slope of the Uinta Mountains for intercepting Uinta Basin streams as far east as Rock Creek, enlargement of the Strawberry Reservoir by construction of the Soldier Creek Dam, enlargement of the Strawberry Reservoir outlet tunnel, construction of 5 powerplants with a combined generating capacity of 61,000 kilowatts, and construction of a number of other reservoirs for regulation, storage, and water exchanges. The Wasatch aqueduct, canals, and distribution system would be constructed as necessary to deliver and utilize the increased water supply. Drainage would be provided where necessary. The project would irrigate about 28,540 acres of new land. It would also supply supplemental water for about 131,840 acres and furnish 48,800 acre-feet of municipal water.

Emery County

The Emery County project is located in east-central Utah along the San Rafael River. The project works would include a dam and reservoir, a diversion dam, a canal, and laterals and drains. The project would irrigate about 3,630 acres of new land and furnish supplemental water for about 20,450 acres.

Florida

The Florida project is in southwestern Colorado, in the Florida River Valley. Project works would include a dam and reservoir, a diversion dam, enlargement and extension of existing canal, and distribution laterals and drains. The project would irrigate about 6,300 acres of new land and furnish supplemental water to about 12,650 acres.

Hammond

The Hammond project is in northwestern New Mexico along the San Juan River. The project works would include a diversion dam, a canal, and distribution laterals and drains. The project would irrigate about 3,670 acres of new land.

LaBarge

The LaBarge project is in southwestern Wyoming in the upper end of the Colorado River Basin. It extends approximately 40 miles along the west side of Green River. Project works would include a diversion dam, a conveyance canal, and distribution laterals. About 7,970 acres of new land would be irrigated by this project.

Lyman

The Lyman project is in southwestern Wyoming, just above the Utah-Wyoming State line. It lies along Blacks Fork, a tributary of the Green River. Project works include a reservoir, conveyance canals, and drainage facilities. Supplemental water would be furnished to about 40,600 acres.

Paonia

The Paonia project is located in west-central Colorado on the North Fork of the Gunnison River. This project has been previously authorized and is partially constructed. It would, however, be extended by this reauthorization. The project works include a dam and reservoir, canals, and siphon. As reauthorized, the area to be served would include 17,040 acres, of which 2,210 would be new land and 14,830 acres would be furnished supplemental water.

Pine River extension

The Pine River extension is in southwestern Colorado and northwestern New Mexico, on Pine River, 20 miles east of Durango, Colo. The project works include a diversion dam, the enlargement and extension of canals, and a number of distribution laterals. The project would irrigate about 15,150 acres of new land. Storage water is to be obtained from existing Vallecito Dam and Reservoir on Pine River.

Seedskae

The Seedskae project is in southwestern Wyoming along the Green River below the LaBarge project. Project works would include a diversion dam, conveyance canals, and distribution laterals. About 60,720 acres of new land would be irrigated by the project.

Silt

The Silt project is located in west-central Colorado between Rifle and Elk Creeks. The project works include a dam, and reservoir pumping system, rehabilitation of existing canal, and construction of some new laterals and drains. The project would irrigate about 1,900 acres of new land and would furnish supplemental water for about 5,400 acres.

Smith Fork

The Smith Fork project is located in west-central Colorado along Smith Fork, a tributary of the Gunnison River. The project works would include a dam and reservoir, diversion dam, canals, and laterals. The project would irrigate about 2,270 acres of new land and furnish supplemental water for about 8,160 acres.

FINANCIAL ASPECTS

The plan for the Colorado River storage project and participating projects is financially sound. It has been subjected to the most rigid economic and financial requirements. The construction costs, the cost allocations, and the repayment data for the units and participating projects recommended for authorization in the bill are summarized in table 1. The bill authorizes the appropriation of \$760 million. This compares with \$950 million recommended by the administration. By letter dated June 21, 1955, Acting Secretary of the Treasury Burgess advised the Committee Chairman as follows:

The President has of course recommended legislation authorizing the Colorado River storage project. Details worked out by the Bureau of the Budget and the Department of the Interior, however, contemplated an authorization limited to units requiring expenditures of \$950 million, whereas S. 500 contemplates units calling for expenditures amounting to over \$1,650 million.

While we realize that in time the initial units added to the proposal by the Senate may be justified, and that the participating projects added to the proposal by the Senate would not be begun until the Secretary of the Interior has reexamined their economic justification and had certified to the Congress that the benefits of each project would exceed the cost, we feel that it is highly desirable to limit the authorization to the \$950 million proposed by the administration. In view of the importance of bringing the budget into balance, the Congress should retain the greatest measure of control over authorizations for new expenditures and by limiting the present proposal to units presently justified the Congress will be in a position to review the program as it develops.

The total construction cost of the initial units and participating projects recommended for authorization is estimated by the Department at \$901.7 million. This includes about \$7.3 million for the authorized Eden project now nearing completion and about \$2 million already expended on the Paonia project under a previous authorization. This cost also includes a transmission system necessary to deliver electrical energy to power market centers. If arrangements are worked out between the Department and the private utilities serving the area whereby the Federal Government constructs only the interconnecting trunkline and the remainder of the system is constructed by the private utilities, the construction cost would be considerably reduced as would the purchase price for the project power and energy.

Only about \$8.2 million, or less than 1 percent, of the total cost nonreimbursable for flood control, fish and wildlife, and recreation. The remainder of over 99 percent is allocated to irrigation, power, and

municipal water supply as follows: \$331.6 million to irrigation, \$510.9 million to power, and \$45.5 million to municipal water supply.

The committee reduced by 10 percent the above construction cost estimates and cost allocations of the Department in establishing the amount authorized to be appropriated. Testimony given the committee indicates that there has been some reduction in price levels applicable to the type of construction herein involved and that recent bids from contractors have consistently been below the engineers' estimates. This testimony, plus evidence that the amount included in the Department's estimates for overhead and contingencies is high, contributed to this action by the committee reducing the Department's estimated costs by 10 percent. The committee has not included funds for construction of the Curecanti unit as the Department is presently studying a modified plan for this unit and a report demonstrating its feasibility must be submitted to the Congress. It is the committee's view that funds should be authorized at the time the report is submitted to the Congress. The funds for the construction of the Eden project have previously been authorized to be appropriated and therefore no funds for the Eden project are included. Also, the amount previously authorized and expended on the Paonia project is not included. The committee included funds for units and projects totaling \$758.8 million, as shown in table 1. The figure was rounded to \$760 million in establishing the amount authorized to be appropriated.

The entire amount for power and municipal water supply of about \$463.7 million, on the basis of the committee's figures, would be returned to the United States Treasury with interest not only on the investment but also with interest accruing during the construction period. While the amount for irrigation in the bill of about \$282.8 million does not bear interest, pursuant to the 50-year-old principle of reclamation law, this amount would be returned, under the provisions of the bill, in equal annual installments in 50 years plus any development period authorized. In recognition of the many indirect benefits that accrue to those living in the vicinity or on the irrigation projects, the indirect beneficiaries in the immediate area would aid in the repayment of irrigation costs through an ad valorem tax.

In a 50-year period following the last power installation, net power revenues from the power facilities herein authorized are estimated at \$1,075 million. Irrigation revenues in 50 years from the irrigation projects herein authorized are estimated at \$36.6 million. The \$1,075 million from power revenues would be sufficient to pay the power investment of \$422.7 million, interest on the power investment of about \$320 million to the Federal Treasury, the necessary financial assistance to irrigation of \$246.2 million (\$282.8 million minus \$36.6 million) and leave a surplus at the end of the period of about \$86 million. Municipal water revenues would be sufficient to repay the municipal water allocation with interest including interest during construction. After the project has been completely repaid, the net power revenues amounting to from \$15 million to \$20 million annually for the units herein authorized will continue to flow into the Treasury. Over the long run, these additional revenues will more than offset the cost to the Federal Government resulting from interest-free financing for the irrigation investment. Thus, it is evident that the repayment plan is sound and that repayment is in accordance with the normal pro-

cedure for reclamation projects. It appears that the returns from the units herein authorized would, in the long run, be an asset purely from a financial standpoint, to say nothing of the tremendous returns to the economic well-being of the Nation in terms of increased wealth, broadened tax base, new farms and homes, etc. In this connection, the Hoover Commission, in its recent report on water resources and power, made this comment:

The justification for Federal interest in irrigation is not solely to provide land for farmers or to increase food supply. These new farm areas inevitably create villages and towns whose populations thrive from furnishing supplies to the farmer, marketing his crops, and from the industries which grow around these areas. The economy of seven important cities of the West had its base in irrigation—Denver, Salt Lake City, Phoenix, Spokane, Boise, El Paso, Fresno, and Yakima. Indeed these new centers of productivity send waves of economic improvement to the far borders, like a pebble thrown into a pond. Through irrigation, man has been able to build a stable civilization in an area that might otherwise have been open only to intermittent exploitation.

The average project cost per acre for the lands to be irrigated ranges from \$190 per acre to \$715 per acre. These per-acre costs are not unusually high for reclamation projects being planned today. The good projects, from the standpoint of cost, have been constructed. The justification for these per-acre expenditures lies in the returns from the development over the years and not on the market value of the land after it is irrigated. Although there is a relationship between the direct benefits resulting from irrigation and the increased value of the land, this cannot be used as a measure of project justification. Project justification is measured by comparing, over the economic life, the increased annual benefits or effects, direct and indirect, resulting from construction of the projects with the annual cost of such construction. All the participating irrigation projects herein recommended are justified on this basis. To speak in terms of cost without considering the resulting returns is meaningless. For instance, the Central Utah project, which has a per-acre cost almost 4 times as high as the LaBarge project, has about the same benefit-cost ratio.

TABLE 1.—Summary of units of Colorado River storage project and participating projects authorized by the bill

Project and State	Lands to be irrigated		Generating capacity	Municipal water annually	Stream depletion annually	Construction costs			Repayment of reimbursable costs			Funds authorized to be appropriated ¹		
	New	Supplemental				Total	Nonreimbursable	Reimbursable allocations			By water users		By initial power units (Flaming Gorge, Glen Canyon, central Utah)	Total
								Power	Municipal water	Irrigation				
Colorado River storage project initial units:														
Glen Canyon unit, Arizona, Utah	Acre	Acre	Kilo-watts	Acre-foot	Acre-foot									
Flaming Gorge, Utah-Wyoming			72,000		56,000	82,942,000		52,042,000		30,900,000		82,942,000	82,942,000	74,648,000
Navajo, N. Mex.					16,000	36,592,000	\$1,298,000			35,294,000		35,294,000	35,294,000	32,933,000
Subtotal			872,000		598,000	540,804,000	1,298,000	423,016,000		116,490,000		539,506,000	539,506,000	486,724,000
Additional storage unit contingent upon finding of feasibility and report: Curacanti ²					18,000									(*)
11 participating projects:														
LaBarge, Wyo.	7,970				14,200	1,673,300				1,673,300	\$495,000	1,178,300	1,673,300	1,506,000
Seedskaade, Wyo.	60,720				110,400	23,272,000				23,272,000	4,785,000	18,487,000	23,272,000	20,944,800
Lyman, Wyo.		40,600				10,564,000			10,564,000	2,255,000	8,309,000	10,564,000	10,564,000	9,507,600
Silt, Colo.	1,900	5,400			5,800	3,356,000	73,600			3,282,400	1,020,000	2,262,400	3,282,400	3,020,400
Smith Fork, Colo.	2,270	8,160			7,500	3,367,000	24,000			3,343,000	1,045,000	2,298,000	3,343,000	3,030,300
Paonia, Colo.	2,210	14,830			9,000	6,944,000	152,400			6,791,600	2,414,000	4,377,600	6,791,600	4,418,100
Florida, Colo.	6,300	12,650			12,900	6,941,500	437,900			6,503,600	1,711,500	4,792,100	6,503,600	6,247,400
Pine River project extension, Colorado, New Mexico	15,150				28,300	5,027,000				5,027,000	2,045,000	2,982,000	5,027,000	4,524,300
Emercy County, Utah	3,630	20,450			15,500	9,865,500	229,000			9,636,500	3,715,000	5,921,500	9,636,500	8,879,000
Central Utah (initial phase), Utah	28,540	131,840	61,000	48,800	189,400	231,044,000	5,991,000	46,699,000	\$45,500,000	127,354,000	\$60,801,000	158,562,000	219,553,000	207,939,600
Hammond, N. Mex.	3,670				7,900	2,302,000				2,302,000	370,000	1,932,000	2,302,000	2,071,300
Subtotal, 11 initial projects	132,360	233,930	61,000	48,800	400,900	304,356,300	6,907,900	46,699,000	45,500,000	199,749,400	80,546,500	211,401,900	291,948,400	272,089,300

Additional participating project authorized and under construction, Eden, Wyo.	10,660	9,540			32,400	7,287,000				7,287,000	1,500,000	5,787,000	7,287,000	(*)
Total, 12 participating projects	143,020	243,470	61,000	48,800	433,300	311,643,300	6,907,900	46,699,000	45,500,000	207,036,400	\$2,046,500	217,188,900	299,235,400	272,089,300
Grand total	143,020	243,470	933,000	48,800	1,049,300	852,447,300	8,205,900	469,715,000	45,500,000	323,326,400	\$2,046,500	756,604,900	838,741,400	758,813,300

II. Rept. 1087, 54-1-3

¹ The Department's estimates have been reduced by 10 percent. Testimony indicates that there has been a reduction in price levels applicable to the type of construction here involved and that recent bids from contractors have consistently been below the estimates. Also, there is evidence that the amount included in the Department's estimates for overhead and contingencies is high.

² The committee did not include funds for the Curacanti unit as Department is presently studying modified plan, a report on which must be submitted to the Congress. Firm data on unit not available.

³ The amount of \$2,035,000 previously authorized and expended has been deducted from estimated cost.

⁴ Includes \$15,191,000 in irrigation revenues and \$45,500,000 from municipal and industrial water users.

⁵ Exclusive of \$5,500,000 allocable to purposes of the ultimate phase of central Utah project.

⁶ Included in the bill for obtaining financial assistance only. No authorization of funds required.

⁷ Allocations to power and municipal water as reduced by committee (see footnote 9) are repaid with interest including interest during construction.

⁸ Allocation to irrigation as reduced by committee (see footnote 9) is repaid in equal annual installments in 30 years plus any development period authorized, except for Paonia and Eden, which are covered by existing law.

⁹ Includes about \$282.8 million for irrigation, \$422.7 million for power, \$41 million for municipal water, \$7.4 million nonreimbursable, and \$4.9 million allocable to purposes of the ultimate phase of the central Utah project.

One argument that has been made against the Colorado River storage project and participating projects is that, in view of present farm surpluses, it would be unwise to bring additional lands into production at this time. For the most part the crops which would be produced on the irrigation projects in the upper Colorado Basin are either not in the surplus category or they are for local feeding of livestock, and therefore they do not contribute to farm surpluses. Also, the construction of these irrigation projects is a long-range program and this must be kept in mind if the projects are considered in terms of their relationship to the problem of farm surpluses.

This problem of unbalanced agricultural production or surpluses is one of the least understood problems now facing the United States. Most people do not understand that the existing unbalanced situation is of short duration and that in a matter of a very few years demands will overcome surpluses. In this connection, we should keep several pertinent facts in mind. The population of the United States is around 162 million and is increasing at a rate of nearly 3 million per year. Most authorities agree that by 1975 our population will be above 200 million persons with some estimates running as high as 220 million. If we continue our present diet, and it is expected to improve, we will need an equivalent of production from an additional 6 to 7½ million acres each year, and by 1975 we will need at least 20 to 30 million acres of new cropland, allowing for a continuing increase in crop yields per acre as a result of improved farming methods and research. While our demands are thus increasing rapidly, we are losing about 1.4 million acres a year through use of land for highways, airports, reservoirs, expanding cities, soil erosion and other nonproductive activities. Keeping these facts in mind, it may be expected that agricultural production may be brought in balance in a very few years and we must adopt vigorous measures if serious shortages are to be avoided.

In view of the types of crops involved, the long-range nature of the construction program in the upper Colorado River Basin, and the anticipated future demands for agricultural products, the committee concludes there is no basis for the concern that the projects herein recommended will contribute to agricultural surpluses.

PROPOSAL OF THE PRIVATE POWER COMPANIES

The committee finds that this project is unique in that there is no public versus private power controversy involved. Representatives of the 10 private power companies operating in the area presented testimony before the committee indicating their desire to cooperate with the Federal Government in the transmission and marketing of electric power and energy from the Colorado River storage project. Their proposal provides essentially that the Secretary construct the backbone transmission lines connecting major powerplants of the project and that use be made of the existing systems of the companies and additions thereto to market the power. The companies assured the committee of their willingness to serve preference customers either through wheeling or through resales with appropriate safeguards to protect the rights and interests of the preference customers, and of the

desire of the private utilities of the area to purchase power in accordance with the policy expressed by the committee.

The proposal by the power companies seemed entirely reasonable to the committee. The proposal is consistent with the policy expressed by the Congress for many years in appropriation acts and elsewhere whereby the Federal Government builds the basic backbone transmission system and distribution is made through existing systems where satisfactory arrangements can be worked out. The procedure proposed is similar to that which has worked very satisfactorily for the Central Valley project.

The Department of the Interior advised the committee that it was sympathetic to the private power companies' proposal and indicated that the suggestions would be given studied consideration if the project were authorized. Therefore, the committee expects the proposal by the private power companies for cooperation in the development to be carefully considered by the Department of the Interior and the electric power and energy of the project to be marketed, so far as possible, through the facilities of the electric utilities operating in the area, provided, of course, that the power preference laws are complied with and project repayment and consumer power rates are not adversely affected.

ANALYSIS OF THE LEGISLATION

Section 1 of the bill sets out the purpose of the legislation and the units and projects which would be authorized for construction. With respect to the Curecanti storage unit, the water surface is limited to a certain elevation and construction is contingent upon certification by the Secretary to the Congress and to the President as to its economic justification.

Section 2 lists by name additional participating projects which shall be given priority in planning by the Secretary. Section 3 recognizes that the units authorized and the additional projects named for planning constitute only an initial phase of a comprehensive plan and that the legislation is not intended to limit or preclude additional authorizations of other projects in the future.

Section 4 requires that the construction, operation, and maintenance of the works authorized be in accordance with Federal reclamation laws except as otherwise provided in the bill. Existing reclamation laws are supplemented for this project in a proviso (a) requiring that irrigation repayment contracts, except as provided in other legislation for the Paonia and Eden projects, not exceed 50 years, exclusive of development period; (b) requiring that irrigation repayment contracts be made with a conservancy type irrigation district prior to construction of irrigation distribution facilities, except where a substantial portion of the lands are owned by the United States in which cases the delivery of water rather than the construction will be contingent upon the completion of contract; (c) making inapplicable that part of reclamation law which appears to give irrigation water priority over municipal water, and thus making this legislation consistent with most State constitutions which give preference to the use of water for domestic purposes; and (d) making the payment of construction costs (which are within the capability of the land to repay) covering Indian lands subject to the Leavitt Act.

Section 5 authorizes a separate fund for the project and explains the operation of the fund. The fund would be credited with all appropriations for the project and all revenues collected from the project. Revenues in excess of operating needs would be paid annually to the Federal Treasury to (a) return with interest the cost of each unit, participating project or any separable feature thereof, which are allocated to commercial power or to municipal water supply within a period not exceeding 50 years, in the case of municipal water features, and within a period not exceeding the economic life, in the case of power features; (b) return without interest in equal annual installments the cost of each unit, participating project or separable feature allocated to irrigation within a period not exceeding 50 years exclusive of development period, except in the cases of the Paoia project and of the Indian lands in which cases the repayment period would be consistent with other provisions of law applicable thereto. The interest rate would be determined by the Secretary of the Treasury as of the time appropriation is made for initiating construction. The formula for determining the rate is designed to give a rate approximately equal to the cost of money to the United States on its long-term public debt obligations. This section also requires that business-type budgets be submitted to the Congress annually covering all operations financed by the basin fund.

Section 6 requires that the Secretary make an allocation of cost for each unit or project upon its completion and submit a report to the Congress each fiscal year upon the status of revenues from and the cost of constructing, operating, and maintaining the Colorado River storage project and participating projects.

Section 7 provides that the hydroelectric powerplants be operated so as to produce the greatest amount of power and energy that can be sold at firm power and energy rates without, however, impairing the use of water for domestic or agricultural purposes and without affecting or interfering with the operation of any provision of the Colorado River compact, the upper Colorado River Basin compact, the Boulder Canyon Project Act or the Boulder Canyon Project Adjustment Act. All Colorado River Basin States are on the same basis with respect to acquiring electric power and energy from the project.

Section 8 authorizes the Secretary of the Interior to plan, construct, and operate public recreational facilities on lands withdrawn or acquired for the development of the project and facilities to mitigate the losses of and improve conditions for the propagation of fish and wildlife. The Secretary is authorized to acquire or to withdraw lands necessary for the construction and operation of these recreational and fish facilities and to dispose of the lands to Federal, State, or local governmental agencies upon conditions which will best promote their development and operation in the public interest. All costs incurred for recreational and fish and wildlife purposes would be nonreimbursable under the provisions of this section.

Section 9 simply provides that nothing in the act shall be construed to alter, amend, repeal, interpret, modify, or be in conflict with any provisions of the compacts and acts which comprise the so-called law of the river.

Section 10 provides that expenditures for units of the storage project may be made without regard to the requirement of the Interior Department Appropriation Act of 1954, which is now permanent

legislation and which provides that there be no expenditure for initiation of construction of any dam or reservoir or other works related thereto until the Secretary of the Interior has certified to the Congress that an adequate soil survey and land classification have been made and the lands to be irrigated are susceptible to the production of agricultural crops by means of irrigation, or that the successful irrigability of these lands and their susceptibility to sustained production of agricultural crops by means of irrigation has been demonstrated in practice. The application of the certification requirement to the storage units would be impossible of accomplishment. By regulation of the flows of the rivers, these storage reservoirs benefit all the lands of the upper basin including those to be irrigated in the future. The requirement that each of the participating projects comply with the certification requirement meets the objective of this provision in law which objective is to prevent construction of irrigation works prior to assurance that they can be used.

Section 11 expresses the sense of the Congress that the construction of the projects authorized should proceed as rapidly as would be consistent with budgetary requirements and the economic needs of the Nation.

Section 12 authorizes the appropriation of funds necessary to carry out the purposes of the bill.

Section 13 directs the Secretary of the Interior to negotiate with the city and county of Denver, Colo., or any other municipality or legal subdivision of the State of Colorado, with respect to conveyance to such municipalities of water rights and other Federal property acquired by the United States solely for the generation of power.

Section 14 requires that the Secretary, in planning additional developments in the upper basin, give consideration to achievement within each of the upper basin States of the fullest practicable consumptive use of the waters apportioned each State.

Section 15 directs the Secretary of the Interior to operate the facilities authorized in the bill in compliance with the compacts and acts which comprise the so-called law of the river, and permits any State of the Colorado River Basin, in the event the Secretary fails to so comply, to maintain an action in the Supreme Court of the United States and gives consent to the joinder of the United States as a party in such suit.

Section 16 directs the Secretary of the Interior to undertake studies and make a report to the Congress and to the States of the Colorado River Basin upon the effect on the quality of Colorado River water of all transmountain diversions and all other storage and reclamation projects in the Colorado River Basin.

Section 17 defines certain terms used in the legislation.

DEPARTMENTS' REPORTS

The project planning report of the Department of the Interior on the Colorado River storage project and participating projects has been transmitted to the Congress and is set forth in House Document 364 83d Congress. This report includes the report of the Commissioner of Reclamation and the views and recommendations of the Colorado River Basin States, other interested Federal agencies, and the Bureau of the Budget. The report of the Department of the Interior on the legislation follows:

Hon. CHAIR ENGLISH,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington 25, D. C.

My Dear Mr. English: A report has been requested from this Department on H. R. 3383, a bill to authorize the Secretary of the Interior to construct, operate and maintain the Colorado River storage project and participating projects, and for other purposes. You have also requested that we comment on H. R. 270, H. R. 2836, and H. R. 3384 to the extent to which they differ from H. R. 3383. In his address to the Congress on the state of the Union, President Eisenhower said (H. Doc. No. 1, 84th Cong., p. 8):

"* * * the Federal Government must shoulder its * * * partnership obligations by undertaking projects of such complexity and size that their success requires Federal development. In keeping with this principle I again urge the Congress to approve the development of the upper Colorado River Basin to conserve and assure better use of precious water essential to the future of the West."

Likewise in his budget message (H. Doc. No. 16, 84th Cong., p. M65) the President said:

"I also recommend enactment of legislation authorizing the Bureau of Reclamation to undertake construction of two comprehensive river-basin improvements which are beyond the capacity of local initiative, public or private, but which are needed for irrigation, power, flood control and municipal and industrial water supply. These are the upper Colorado River Basin development in the States of Colorado, Utah, Wyoming, Arizona, and New Mexico, and the Fryingpan-Arkansas development in Colorado. The Colorado River development will enable the upper basin States to conserve floodwaters and to assure the availability of water and power necessary for the economic growth of the region. * * * Sale of power generated at these developments will repay the power investment within 50 years and will make a contribution toward repayment of other investments."

In the budget itself it was pointed out (p. 830) that the administration proposes to initiate construction of the Colorado River storage project during the next fiscal year if it is authorized and that the budget includes an item for funds to be requested for this purpose.

The substance of our views on the proper contents of a bill to implement the President's recommendation and particularly on those projects and units which should be covered in the initial legislation is contained in the draft of bill which was developed by the Bureau of the Budget in collaboration with this Department and submitted to your committee on April 1, 1954, in connection with H. R. 4449, 83d Congress, a predecessor of the present H. R. 3383.

We recommend that H. R. 3383 be examined in the light of the proposal there made and in the light of the two letters dated March 18, 1954, from the Director of the Bureau of the Budget to the Senate Committee on Interior and Insular Affairs and to this Department which are reprinted in Senate Report No. 1983, 83d Congress, and that, with suitable amendments, H. R. 3383 be enacted.

The Bureau of the Budget has advised that there would be no objection to the submission of the above report to your committee. That office, however, has not yet had an opportunity to consider the attached comparative analysis of H. R. 3383, H. R. 270, H. R. 2836, and H. R. 3384. The comments made therein must not, for this reason, be regarded as representing any commitment with respect to their conformity to the program of the President.

Sincerely yours,
FRANK G. AAKDARI,
Assistant Secretary of the Interior.

COMPARATIVE ANALYSIS OF H. R. 3383, H. R. 270, H. R. 2836, AND H. R. 3384,
84TH CONGRESS

Storage project units named

H. R. 3383: Curecanti, Echo Park, Flaming Gorge, Glen Canyon.
H. R. 270: Adds Cross Mountain and Navajo to above.
H. R. 2836: Same as H. R. 270.
H. R. 3384: Adds Juniper and Navajo to those covered in H. R. 3383.

Comment: The Department of the Interior recommends that only Glen Canyon and Echo Park be authorized as storage units at this time.

Participating projects named

H. R. 3383: Central Utah (initial phase), Tinney County, Fla., Hammond, La Barge, Lyman, Paonia (new works), Pine River extension, Seedskadee Silt, Smith Fork, San Juan-Chama, Navajo.

H. R. 270: Adds Gooseberry to above.
H. R. 2836: Same as H. R. 270.
H. R. 3384: Adds Gooseberry, Parshall, Troublesome, Rabbit Ear, Eagle Divide, Woody Creek, West Divide, Bluestone, Battlement Mesa, Tomichi Creek, East River, Ohio Creek, Fruitland Mesa, Bostwick Park, Grand Mesa, Dallas Creek, Savorry-Pot Hook, Dolores, Fruit Growers extension, Elkhorn, Kendall to those named in H. R. 3383.

Comment: Department of the Interior recommends that the projects covered be limited to the 11 listed in the administration bill submitted to the committee on April 1, 1954, viz, central Utah (initial phase), Tinney County, Fla., Hammond, La Barge, Lyman, Paonia (new works), Pine River extension, Seedskadee, Silt, and Smith Fork.

Extent of authorization

H. R. 3383: Echo Park, Glen Canyon, and Flaming Gorge fully authorized; Curcanti subject to certification, on basis of further engineering and economic investigations, that its benefits will exceed its costs. All participating projects except San Juan-Chama and Navajo fully authorized; San Juan-Chama and Navajo subject to submission of coordinated reports to States under Flood Control Act of 1934 and to approval of and authorization by the Congress.

H. R. 270: Same as H. R. 3383 for storage units. All participating projects subject to reexamination by Secretary of the Interior with respect to their economic justification and to certification by him that their benefits will exceed their costs and that they meet reimbursement requirements of bill. Estimate of direct agricultural benefits to be made after consultation with Secretary of Agriculture. Provisions with respect to San Juan-Chama and Navajo substantially same as in H. R. 3383.

H. R. 2836: Virtually identical with H. R. 270.
H. R. 3384: Same as H. R. 3383 for storage units. Virtually the same as H. R. 270 for participating projects named in that bill but with respect to other participating projects not named therein requires submission of planning reports to States under Flood Control Act of 1934 and authorization by Congress.
Comment: The administration bill submitted to the committee on April 1, 1954, provided that authority to construct the participating projects named in it should not become effective until the Secretary of the Interior had reexamined their economic justification (his appraisal of the direct agricultural benefits to be made in cooperation with the Secretary of Agriculture) and had certified to the Congress that their benefits exceeded their costs. We adhere to the principle of the bill and, as has been said before, to the list of projects named therein. As among the four bills now before the committee, we prefer the provisions of H. R. 270, H. R. 2836, and H. R. 3384 with respect to actions to be taken prior to construction of participating projects to those of H. R. 3383 on this point.

Repayment

H. R. 3383: Irrigation allocations to be returned to Treasury in equal annual installments over a period of not more than 50 years (exclusive of development period) from completion of each unit, participating project, or separable feature thereof. Municipal water allocation to be returned to Treasury with interest over a period of not more than 50 years from completion of each unit, participating project, or separable feature thereof. Commercial power allocation to be returned to Treasury with interest over expected economic life of unit, participating project, or separable feature or within 100 years, whichever is shorter.
H. R. 270: Irrigation, municipal water, and commercial power allocations—the latter two with interest—to be returned to the Treasury within not more than 50 years plus, in the case of irrigation, a development period.

H. R. 2836: Same as H. R. 270.
H. R. 3384: Same as H. R. 270.
Comment: The provisions of H. R. 270, H. R. 2836, and H. R. 3384 are, in all respects, like those of the administration bill of April 1, 1954. We adhere to the provisions and recommend that they be substituted for those of H. R. 3383.

Operation of powerplants

H. R. 3383: After providing for operation of the powerplants covered by the bill in conjunction with other Federal power facilities, the bill provides that

exercise of that authority "shall affect or interfere with the operation of any provision of the Colorado River compact, the upper Colorado River Basin compact, the Boulder Canyon Project Act, the Boulder Canyon Project Adjustment Act, or any contract lawfully entered into under said Acts without the consent of the other contracting parties."

H. R. 270: Same as H. R. 3383 but omits express reference to contracts.

H. R. 2836: Same as H. R. 270.

H. R. 3384: Same as H. R. 270.

Comment: The language of H. R. 3383 with respect to contracts appears to be superfluous but is otherwise unobjectionable.

Appropriability of water used for power purposes

H. R. 3383: Provides that "Neither the impounding nor the use of water for the generation of power and energy at the plants of the Colorado River storage project shall preclude or impair the appropriation for domestic or agricultural purposes, pursuant to applicable State law, of waters apportioned to the States of the upper Colorado River Basin."

H. R. 270: Omits the above.

H. R. 2836: Has provision similar to that of H. R. 270, but extends to all power-plants authorized by bill.

H. R. 3384: Same as H. R. 2836.

Comment: The provisions of H. R. 3383 are in this respect identical with those of the administration bill and are recommended for inclusion in the legislation. Unless a great deal of excess storage capacity beyond that provided by Glen Canyon and Echo Park is authorized and constructed, the waters impounded in these reservoirs will, within a comparatively few years, be devoted almost entirely to fulfilling the obligations of the upper division States with respect to deliveries at Lee Ferry for lower basin and Mexican treaty purposes. The generation of power will be a byproduct of release for these purposes. Pay-out studies have been based upon the assumption that the upper basin depletion of the stream contemplated by this provision will occur in any event.

Soil survey and land classification exemption

H. R. 3383: Exemption applicable to four storage project units covered in bill.

H. R. 270: Exemption applicable to five storage projects units covered in bill; not applicable to Curcanti.

H. R. 2836: Same as H. R. 270.

H. R. 3384: Exemption applicable to four storage project units covered in bill; not applicable to Curcanti, Juniper, and Navajo.

Comment: It is believed that the exemption should be commensurate with whatever storage project units are ultimately covered by the bill.

Authorized appropriations

H. R. 3383: Limits authorized appropriations to \$1,055 million.

H. R. 270: Omits limitation.

H. R. 2836: Omits limitation.

H. R. 3384: Omits limitation.

Comment: The Department of the Interior would have no objection in this case to specifying the amount authorized to be appropriated. If such a limitation is spelled out in the bill, as it is in H. R. 3383, the text should make clear, as that of H. R. 3383 does not, that the sum specified is for construction costs only and is not inclusive of initial operation and maintenance costs.

Future planning

H. R. 3383: Section 12 of this bill provides that "In planning the additional development necessary to the full consumptive use in the upper basin of the waters of the Colorado River system allocated to the upper basin and in planning the use of and in using credits from net power revenues available for the purpose of assisting in the pay-out of costs of participating projects herein and hereafter authorized in the States of Colorado, New Mexico, Utah, and Wyoming, the Secretary shall have regard for the achievement within each of such States of the fullest practicable consumptive use of the waters of the Upper Colorado River system consistent with the apportionment thereof among such States."

H. R. 270: Omits above.

H. R. 2836: Omits above.

H. R. 3384: Omits above.

Comment: The Interior Department has no objection to the inclusion of the provision of H. R. 3383 quoted above. It would, in any event, seek to achieve

the end specified. If this provision is inserted, however, it is an upper basin State be added to the other States named in the bill since it is an upper basin State and is apportioned a small quantity of upper basin water by the upper Colorado River Basin compact.

Litigation and consultation

H. R. 3383: Provides that the Secretary of the Interior shall, in the storage and release of water from reservoirs under his jurisdiction anywhere in the Colorado River Basin, "comply with the applicable provisions of the Colorado River compact, the Boulder Canyon Project Act, the Boulder Canyon Project Adjustment Act, and the treaty with the United Mexican States." Provides further that, in the event of his failure so to comply "any State of the Colorado River Basin may maintain an action in the Supreme Court of the United States to enforce the provisions of this section" and gives the consent of the United States to its joinder as a party in any such suit.

H. R. 270: Directs compliance with the applicable provisions of the documents referred to above in the operation and maintenance of all Federal facilities in the Colorado River Basin under his jurisdiction. Provides further for consultation with an "interagency committee consisting of one representative from each of the Colorado River Basin States, one representative of the Colorado River Board of California, one representative of the Upper Colorado River Commission, and one representative of the United States Section of the International Boundary Commission, United States and Mexico" on the storage and release of waters from works under his jurisdiction.

H. R. 2836: Similar to H. R. 270.

H. R. 3384: Includes provisions similar both to those in H. R. 3383 and to those in H. R. 270.

Comment: (a) Unless extraordinary circumstances so require, it would seem unwise to single out the Colorado River for special treatment with respect to litigation. Moreover, assuming that the Secretary will be directed (as all of the bills provide in various places) to comply with the Colorado River compact and related documents, there is no apparent reason for the waiver of the immunity of the United States from suit in the Supreme Court. There is ample in the other parts of the bills, we believe, on which to found an action against the Secretary alone in case he exceeds the authority given him under their terms. But if it is the desire of the committee to include such a provision as that contained in H. R. 3383 and H. R. 3384 on this subject and if it is restricted (as those bills now provide) to litigation with respect to the storage and release of water, we will not object. We suggest, however, that it be made clear that the waiver runs only in favor of a State adversely affected by the storage and release spoken of in order to forestall the provisions being looked upon as an open invitation to anyone to institute harassing, even though fruitless, litigation at any time it chooses to do so. We suggest also that the committee bear in mind that this provision, if enacted, will necessarily be read in conjunction with section 208 (c) of the Justice Department Appropriation Act, 1953 (66 Stat. 549, 560; 43 U. S. C. sec. 666) and that it is unlikely, therefore, that it will be usable except in quite extraordinary circumstances.

(b) We would have no objection, if the committee wishes to include such in the bill that it reports out, to a provision for an "integrating committee" along the lines of that set out in H. R. 270 and H. R. 3384. Its creation would not be in derogation of the ultimate responsibility of the Secretary of the Interior in the management of the works covered by it, but it could assist him in securing the management of representatives of the States concerned and would furnish them with a forum in which to discuss and, it is to be hoped, iron out certain, and perhaps many, of their problems. The creation of such a committee might well assist its members in taking an overall view of the Colorado River and in bringing to problems as of basin-wide importance. It would also be a useful supplement to and would perhaps supplant, the advisory provisions of section 16 of the Boulder Canyon Project Act. One of the objects of these provisions was to further "any comprehensive plan formulated hereafter for the control, improvement, and utilization of the resources of the Colorado River system" and to assure treatment of the works authorized by that act "as a unit in such control, improvement, and utilization * * *". We have no suggestions to make on the composition of the "integrating" committee.

Quality of water studies

H. R. 3383: Directs the Secretary "to institute studies and to make a report to the Congress and to the States of the Colorado River Basin of the effect upon the

quantity of water in the Colorado River, of all transmountain diversion, of water of the Colorado River system and of all other storage and reclamation projects in the Colorado River Basin."

H. R. 270: Omits the above.

H. R. 2836: Omits the above.

H. R. 3384: Omits the above.

Comment: No objection if the committee sees fit to include a provision along the lines of that included in H. R. 3383.

Denver diversions

H. R. 3383: Omits.

H. R. 270: Authorizes conveyance to the city of Denver of such lands and water rights used or acquired by the United States solely for the generation of power as may be required by Denver in connection with the development and use of its Blue River project, payment for the value of the rights acquired to be made by Denver to the United States.

H. R. 2836: Same as H. R. 270.

H. R. 3384: Omits.

Comment: The terms of the provision in H. R. 270 are such as not to require objection from this Department. It should be understood, however, that maintenance of the integrity of the Colorado-Big Thompson project, including fulfillment of its obligations to western slope water users in Colorado under Senate Document 80, 75th Congress, whatever those obligations may be, will be ultimately involved in the administration of this provision and that, for this reason, among others, no commitment can be made at this time concerning the exercise of the authority which its enactment would confer upon this Department.

COMMITTEE'S RECOMMENDATION

The Committee on Interior and Insular Affairs recommends that H. R. 3383, as amended, be enacted.

MINORITY VIEWS ON H. R. 3383

A minority of your committee is firmly opposed to the enactment of this bill and presents this summary of views in opposition for your consideration.

Individual members of your minority oppose the bill for various reasons. Consequently, each signatory does not necessarily adopt all objections herein stated. But to facilitate your convenient reading of our various views, most of the important reasons why the project should not be authorized are combined herein.

Again, for convenience in reading, opposing arguments are first summarized, then discussed in detail.

OBJECTIONS TO BILL SUMMARIZED

(1) The \$1½ billion upper Colorado storage project approved by the Senate and the ostensibly smaller House bill are one and the same thing.

In actuality, the project is the nondivisible \$1½ billion entity described in House Document 364 of the 83d Congress. Only segments of that entity are contained in the House bill. Although such expensive and controversial integral parts of the whole project as Echo Park have been deleted from the House bill to make it appear palatable, they cannot be deleted from the project. Authorization of the initial segments will make mandatory later authorization of the remainder so that power revenues can be obtained to help repay the investment.

Like an iceberg, the House bill displays only part of its mass to view, but the remaining bulk nevertheless exists and must be reckoned with.

(2) Invasion of Dinosaur National Monument by Echo Park Dam and power facilities will be unavoidable if the bill passes.

(3) The project will damage the Nation's agricultural economy.

(4) The project would grow crops already in agricultural surplus.

(5) The project will serve, for the most part, only marginal agricultural land.

(6) When needed, there exists at least 20 million acres of undeveloped land which can be placed in production at a fraction of the cost of acreage serviced by the project.

(7) The ultimate direct and hidden costs of the project total at least \$5 billion (which figure probably is low because it is based on Bureau of Reclamation cost estimates which have proved notoriously short of actual construction costs).

(8) Ninety-eight percent of the project's cost would be borne by the taxpayers of the 44 States in which the project is not located.

(9) The appropriation authorization of \$760 million is misleading. It actually amounts to \$933,468,300 based on Bureau of Reclamation estimates. It should be \$1.6 billion to reflect actual direct construction costs.

(7) The huge concealed Federal subsidy to the States of Colorado, Wyoming, Utah, and New Mexico flowing from the project are unwar-
ranted and unconscionable.

(8) The project's financial scheme is wholly unsound and will bur-
den taxpayers for generations to come:

(a) Irrigation projects are financially infeasible, requiring an average
subsidy of 88 percent of their cost.

(b) Project repayment provisions are unrealistic and economically
indefensible.

(c) The project's financial scheme is based on the impossible assump-
tion that 6-mill power will be marketable for the next 100 years.

(d) Low cost nuclear-electric power developments and potentialities
have been disregarded and ignored.

(e) The project is not self-liquidating.

(f) The project's power dams are unneeded for power and are
included only to subsidize irrigation components.

(g) Central Utah (initial phase), the project's largest irrigation
segment, is the most infeasible of all.

(10) Water rights upon which the project depends for power reve-
nues are now in litigation before the Supreme Court and may never
become available.

(11) Three physical and geological difficulties in addition to Echo
Park make the project unreasonable and impractical:

(a) There is doubt whether Glen Canyon can support a 700-foot
dam.

(b) The construction at Glen Canyon will endanger Rainbow
Natural Bridge.

(c) Large quantities of water may be forever lost by absorption
into the sandstone walls of Glen Canyon Reservoir.

(12) The benefit-cost ratio has been distorted contrary to reclama-
tion law in an attempt to justify the project's unsound economics.

(13) Fifty years of reclamation law, precedent, and experience are
jettisoned by the project.

(14) The project wholly ignores the Hoover Commission report.

(15) The bill includes projects which have been disapproved by the
Bureau of the Budget.

(16) The bill varies substantially and materially from the adminis-
tration-approved project:

(a) The bill's projects are different.

(b) A reexamination of economic justification of the project, called
for by the administration, is missing.

(c) Financial repayment features are basically contrary from those
approved and recommended by the administration.

(17) The project should not be authorized at this time because the
economic, engineering, and financial surveys prerequisite to its proper
evaluation are still inadequate and incomplete.

(18) The project would critically impair the quantity and quality
of water to which the lower Colorado Basin States, particularly south-
ern California, have prior rights.

(19) The project would critically impair operations at Hoover Dam
and lose \$187 million in revenues to the Federal Treasury.

(20) The assistance to the Navajo Indians in the bill is negligible;
cost of project's benefits is \$200,000 for each and every Navajo farm.

(21) The project would forever tie the future of the intermountain
West to a horse-and-buggy farm economy and forestall development
of its rich industrial potential.

For the benefit of those who want additional information regarding
any of the foregoing 21 reasons why not to authorize the project, the
remainder of this report contains detailed data under headings num-
bered to correspond to the above reasons.

OBJECTIONS TO BILL DETAILED

(1) The \$1½ billion upper Colorado storage project approved by the
Senate and the ostensibly smaller House bill are one and the same
thing

The bill as reported out by the committee is S. 500 with all after the
enacting clause stricken and the body of H. R. 3383, as amended by
the committee, substituted. We thus have two versions of S. 500.
The projects they provide for are as follows:

	S. 500 (Senate)	S. 500 (House) and H. R. 3383
Power and storage dams.....	Glen Canyon, Echo Park, Flaming George, Curecanti, Juniper, Navajo.	Glen Canyon, Flaming George, Cure- canti, Navajo.
Participating irrigation proj- ects (authorized).	Central Utah, Emery County, Florida, Ia. Barge, Lyman, Tonah, Pike River extension, Seedstade, Silt, Smith Fork.	Central Utah, Emery County, Flor- ida, Hammond, Ia. Barge, Lyman, Tonah, Pike River extension, Seedstade, Silt, Smith Fork.
Participating irrigation proj- ects (conditionally author- ized).	San Juan-Chama, Navajo, Par- shant, Ironblissome, Rabbit Ear, Fagle Divide, Woolly Creek, West Divide, Hunsstone Battle- ment Mesa, Tonah Creek, East River, Ohio Creek, Fruit land Mesa, Bostwick Park, Grand Mesa, Dallas Creek, Saver's Foot, Hook, Dolores, Fruit Growers extension, Sub- lette.	San Juan-Chama, Navajo, Parshant, Rabbit Ear, Eagle Divide, Hunsstone Creek, West Divide, Tonah Creek, Battlement Mesa, Tonah Creek, East River, Ohio Creek, Fruit land Mesa, Bostwick Park, Grand Mesa, Dallas Creek, Saver's Foot, Hook, Dolores, Fruit Grower extension, Sublette, Plateau.

From the foregoing tabulation it may be seen that as to projects, the
only difference between the bills is this: the Senate authorizes the
Echo Park and Juniper Dams now, as well as the Gooseberry project
while the House version neglects to mention Echo Park and Juniper
although it conditionally authorizes Gooseberry.

Although the bills differ in detail, they are essentially the same in
objective, and in projects contemplated for development of water an-
power in the upper Colorado River Basin. Both bills must be con-
sidered together and treated as one bill. Should the House pass the
measure before it, it is obvious that the principal matter for dis-
cuss before it, it is obvious that the treatment of these three projects
confers to discuss would be the treatment of these three projects
Chief among them, of course, would be Echo Park.

Should the House act favorably on the pending bill, it is likely that
the project authorizations and other provisions of the Senate bill will
be added to the House bill in conference. In view of the fact that
the Senate refused to eliminate Echo Park by a vote of 52-30, it
no Member be deluded that Echo Park is not in this legislation.

(2) *Invasion of Dinosaur National Monument by Echo Park Dam and power facilities will be unavoidable if the bill passes*

Echo Park Dam is still in the bill.—Your committee voted to strike the controversial Echo Park Dam from the bill. But this action was a sham; Echo Park Dam is still in the bill, and the House must be realistic and treat it accordingly.

In actuality, the project is the nondivisible \$1½ billion entity described in House Document 364 of the 83d Congress. Only segments of that entity are contained in the House bill. Although such expensive and controversial integral parts of the whole project as Echo Park have been deleted from the House bill to make it more palatable, they cannot be deleted from the project. Authorization of the initial segments will make mandatory later authorization of the remainder so that power revenues can be obtained to help repay the investment.

The Trojan-horse strategy of the proponents of the bill is only too obvious. They voted to remove Echo Park Dam from the House bill to facilitate its passage. However, the proponents know full well that Echo Park Dam will be restored by the conference committee or by legislation in future Congresses. Backers of the bill have been so brazen about this strategy that they discussed it freely with the press. The Deseret News of Salt Lake City, Utah, which has been campaigning hard for the project, on June 9, 1955, reported from Washington on the action by the committee:

Backers of the river bill and Echo Park were not dismayed by the Thursday vote. It has long been a part of upper basin States' strategy to delete the Echo Park Dam in the House bill on the hope that it will be restored by a joint House-Senate conference committee. Otherwise, House leaders said it would be impossible to get the project bill through the Rules Committee and past the House.

On July 1, 1955, the same newspaper carried an interview with Senator Wallace F. Bennett of Utah in which he was quoted as saying:

If we can get a bill through this session, we can amend it later. * * *

Echo Park is still in the bill because the project will not work without it. Under Secretary of the Interior Ralph A. Tudor testified before the 83d Congress that taking Echo Park Dam out of the upper Colorado storage project would be like taking the pistons out of the engine of an automobile. The project will not function without Echo Park Dam.

Commissioner of Reclamation W. A. Dexheimer testified before your committee this year that the project would not be economically feasible without Echo Park Dam. He stated that the economic feasibility of the project might be established without Echo Park if some of the participating projects also were deleted. However, this was not done by your committee. It deleted (temporarily) Echo Park, but retained all of the participating projects. In other words, the committee sends to the House a bill which the Commissioner of Reclamation conceded would be economically infeasible.

Echo Park no more can be taken out of this project than history can be abolished by taking out and destroying the page of the history book upon which it is recorded. This is a total project and the maneuvering through the committee and through the House will not succeed in convincing the people that Echo Park Dam is not in the bill, because it is. Even if Echo Park is not restored in conference, which is unlikely, backers of the project will come back to Congress in the

future and say, "We have spent billions of the taxpayers' money on the upper Colorado storage project. Now we have to have Echo Park to make it work. Give us the pistons for the engine."

In the famous words of the Supreme Court:

All others can see and understand this. How can we properly shut our minds to it?

(3) *The project will damage the Nation's agricultural economy*

(a) *The project would grow crops already in agricultural surplus.*—The upper Colorado River project would supply irrigation water for high altitude land in Colorado, New Mexico, Utah, and Wyoming. It is very important to consider what crops would be grown on this land.

Among the crops now being supported by the Nation's taxpayers are the following: Corn; cotton; wheat; butter; oats; butter oil; cheese; milk; dried; wool; rye; barley; beans, dry; cottonseed oil; grain sorghum; seeds, hay, and pasture; soybeans. Sugar beets are under the restriction program of the Sugar Act of 1951, and the price is held up to a desired level. What are called proportionate shares are established by the Secretary of Agriculture. Thus, if more sugar-beet land is brought into production, shares of all others must be decreased accordingly.

From Reclamation Bureau reports, a table has been compiled showing the type of crops which would be grown on each of the 33 proposed projects, and whether or not they are supported crops.

The table follows:

Name of project	Acres to be irrigated	Crops to be grown	Crops supported	Name of project	Acres to be irrigated	Crops to be grown	Crops supported
La Barge.....	7,970	Hay..... Small grains... Pasture.....	Yes.	Emery County— Continued		Beef cattle.... Dairy cows.... Fruit.....	Yes. Yes. Yes.
Seedskadee.....	60,720	Dairy cows... Sheep..... Dairy cows... Sheep..... Hay..... Pasture..... Small grains... Hay.....	Yes. Yes. Yes. Yes. Yes.	Central Utah.....	60,380	Alfalfa..... Fruit..... Sugar beets... Dairy cows... Beef cattle... Sheep..... Alfalfa..... Grains..... Beans.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.
Lyman.....	40,600	Pasture..... Small grains... Dairy cows... Beef cattle... Alfalfa..... Small grains... Sugar beets... Potatoes.... Dairy cows... Beef cattle... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.	Hammond.....	3,670	Fruit..... Dairy cows... Sheep..... Alfalfa..... Grains..... Beans.....	Yes. Yes. Yes. Yes. Yes. Yes.
Silt.....	7,300	Dairy cows... Beef cattle... Alfalfa..... Small grains... Sugar beets... Potatoes.... Dairy cows... Beef cattle... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.	Gonsberry.....	16,400	Fruit..... Alfalfa..... Pasture..... Grain..... Dairy cows... Beef cattle... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes.
Smith Fork.....	10,430	Hay..... Small grains... Pasture..... Dairy cows... Beef cattle... Grain..... Fruit..... Dairy cows... Beef cattle... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.	Navaho.....	137,240	Alfalfa..... Grains..... Pasture..... Fruit..... Vegetables... Dairy cows... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes.
Panola.....	17,040	Alfalfa..... Dairy cows... Beef cattle... Dairy cows... Beef cattle... Small grains... Alfalfa..... Dairy cows... Beef cattle... Hay..... Small grains... Alfalfa..... Grains.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.	San Juan-Chama.	225,000	Pasture..... Dairy cows... Sheep..... Hay..... Pasture..... Small grains... Beef cattle... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.
Florida.....	18,950	Alfalfa..... Dairy cows... Beef cattle... Small grains... Alfalfa..... Dairy cows... Beef cattle... Hay..... Small grains... Alfalfa..... Grains.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.	Rabbit Ear.....	10,190	Hay..... Pasture..... Small grains... Beef cattle... Sheep.....	Yes. Yes. Yes. Yes. Yes.
Pine River.....	15,150	Alfalfa..... Dairy cows... Beef cattle... Hay..... Small grains... Alfalfa..... Grains.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes.	Emery County...	24,080	Dairy cows... Beef cattle... Sheep.....	Yes. Yes. Yes.

Name of project	Acres to be irrigated	Crops to be grown	Crops supported	Name of project	Acres to be irrigated	Crops to be grown	Crops supported
Troublesome.....	13,640	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes.	Fruitland Mesa— Continued Grand Mesa.....	25,300	Sheep..... Dairy cows..... Alfalfa..... Small grains..... Pasture..... Fruit..... Dairy cows..... Beef cattle..... Sheep.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes.
West Divide.....	65,610	Alfalfa..... Small grains..... Pasture..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes. Yes.	Ohio Creek.....	16,910	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep.....	Yes. Yes. Yes. Yes. Yes.
Savery-Pot Hook.....	31,610	Alfalfa..... Small grains..... Pasture..... Dairy cows..... Sheep.....	Yes. Yes. Yes. Yes.	Tomichi Creek.....	27,580	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep.....	Yes. Yes. Yes. Yes. Yes.
Dolores.....	66,000	Alfalfa..... Small grains..... Pasture..... Beans..... Dairy cows..... Beef cattle.....	Yes. Yes. Yes. Yes. Yes.	Battlement Mesa.....	6,830	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes. Yes. Yes.
Sublette.....	84,000	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep.....	Yes. Yes. Yes. Yes.	Bluestone.....	10,875	Alfalfa..... Grain..... Vegetables..... Fruit..... Sugar beets..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes. Yes. Yes. Yes. Yes.
Fruitgrowers.....	3,850	Alfalfa..... Grain..... Fruit..... Dairy cows..... Beef cattle.....	Yes. Yes. Yes. Yes.	Eagle Divide.....	10,875	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes. Yes. Yes.
Bostwick Park.....	6,870	Hay..... Pasture..... Beef cattle.....	Yes. Yes.	Parshall.....	27,510	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes. Yes. Yes.
Dallas Creek.....	21,940	Alfalfa..... Small grains..... Pasture..... Beef cattle..... Dairy cows..... Sheep.....	Yes. Yes. Yes. Yes. Yes.	Woody Creek.....	2,965	Hay..... Pasture..... Small grains..... Beef cattle..... Sheep..... Dairy cows.....	Yes. Yes. Yes. Yes. Yes. Yes.
East River.....	2,750	Hay..... Pasture..... Beef cattle..... Dairy cows..... Sheep.....	Yes. Yes. Yes. Yes.				
Fruitland Mesa.....	10,400	Hay..... Pasture..... Small grains..... Beef cattle.....	Yes. Yes. Yes.				

(b) *The project will service, for the most part, only marginal agricultural land.*—The Nation's taxpayers would be forced by this bill to spend hundreds of millions on irrigation projects which will supply water for farmlands of relatively poor quality.

Only 20 percent of the lands serviced by the project are classified by the Bureau as class 1. The lands are at high elevations—as high as 7,000 feet. The growing season on this high mountain plateau is very short. On some of the lands there is frost every month of the year. Low-value feed crops will be the principal products.

It has been demonstrated that these lands, even when fully developed under this bill, will be worth on the average only about \$150 per acre. Yet the cost to the Nation's taxpayers to develop them will average \$3,000 to \$5,000 per acre on the Bureau's figures. Such a result cannot be justified in the face of the fact that at a cost of less than \$100 per acre fertile lands in the East, Middle West, and South could be irrigated, thus bringing heavier yields than ever from the best agricultural land in the Nation.

(c) *There exists at least 20 million acres of undeveloped fertile land in humid areas of the United States which can be developed for agriculture at a fraction of the cost of the acreage serviced by the upper Colorado storage project.*—The Department of Agriculture reports there are more than 20 million acres of undeveloped fertile land in the humid areas of the United States which can be developed by low cost drainage. Development costs would be from \$60 to \$100 an acre for such land. The cost involved to taxpayers of the Nation in developing new and supplemental water for the acreage serviced by the upper Colorado project, which amounts in all to only about 600 square miles of new land, would range up to 50 times as much for each acre developed.

As an example, the Department of Agriculture lists acreage available for low cost development in these 21 States as follows:

	Acres		Acres
Alabama.....	683,000	Missouri.....	323,000
Arkansas.....	1,865,000	New York.....	100,000
Florida.....	1,970,000	North Carolina.....	1,157,000
Georgia.....	1,721,000	Ohio.....	95,000
Illinois.....	69,000	Pennsylvania.....	90,000
Indiana.....	135,000	South Carolina.....	996,000
Kentucky.....	170,000	Tennessee.....	242,000
Louisiana.....	2,769,000	Texas.....	3,928,000
Michigan.....	690,000	Virginia.....	514,000
Minnesota.....	874,000	Wisconsin.....	316,000
Mississippi.....	1,272,000		

(4) *The ultimate direct and hidden costs of the project total at least \$5 billion*

The projects authorized in section 1 and those approved in section 2 for priority of investigation and completion of planning reports, will necessitate an estimated cost of \$1,535,898,400 and an additional subsidy of some \$4 billion by way of interest the Federal Government would have to pay on the money it borrowed to construct the project.

But these are not the only projects the upper basin States will seek, and section 3 of the bill gives notice to that effect. The upper basin plan, which it is the purpose of the bill to initiate, is to get authorization by Congress of additional projects so that the upper basin States can use, if available, the full 7,500,000 acre-feet apportioned to them under the Colorado River compact. The Bureau of Reclamation has inventoried a total of some 100 projects in the upper basin, with a construction cost of \$5 billion. Under the feasibility standards employed for the authorization of the projects named in the bill, any project proposed by the Bureau will become feasible.

Projects are authorized by this bill on which the irrigators are only able to repay 15 percent or less of the project cost. The construction cost averages \$750 to \$900 an acre for lands, which, when they have received all of the benefits of this bill, will be worth only \$150 an acre. There is no such thing as an infeasible project under the type of financing proposed by the Bureau in this bill, which is to dedicate the power revenues of the Government dams to subsidize irrigation for as long as may be necessary to retire the principal of any debt, however large, provided the taxpayers pay the interest on the Government bonds sold to build the project.

The resulting subsidy with which the Nation's taxpayers would be burdened on only the initiation of this gigantic scheme would be \$4 billion. While nothing in the Colorado River compact obligates the

Federal Government to build any projects in the upper basin, the upper basin proponents treat their allocation of water under the compact as a blank draft upon the Federal Treasury, justifying any projects proposed by them, regardless of their infeasibility under existing standards of reclamation law.

Additionally, it is impossible to tell how much more it will require in direct construction costs to complete the project than the amounts estimated by the Bureau of Reclamation. The Bureau's estimates to Congress have proved notoriously short of actual costs, as is strikingly shown by the following table covering projects authorized between 1903 and 1944:

Project	Date of authorization	Estimated total cost at time of authorization	Estimated total cost, June 30, 1952
Hondo, N. Mex.	1903	\$359,000	\$371,788
Milk River, Mont.	1903	1,000,000	9,881,774
Newlands, Nev.	1903	1,250,000	7,809,479
North Platte, Nebr.	1903	2,516,000	27,939,501
Salt River, Ariz.	1903	2,800,000	26,244,688
Uncompahgre, Colo.	1903	1,300,000	8,965,959
Belle Fourche, S. Dak.	1904	2,100,000	5,288,236
Buford-Trenton, N. Dak. (old)	1904	(¹)	223,423
Lower Yellowstone, Mont.-N. Dak.	1904	1,200,000	3,633,219
Minidoka, Idaho-Wyo.	1904	2,600,000	43,700,054
Shoshone, Wyo.-Mont.	1904	7,828,000	23,673,962
Yuma, Ariz.-Calif.	1904	3,000,000	5,806,743
Boise, Idaho	1905	10,852,000	66,371,938
Carlsbad, N. Mex.	1905	605,000	5,800,683
Garden City, Kans.	1905	419,000	334,476
Huntley, Mont.	1905	900,000	1,552,159
Klamath, Oreg.-Calif.	1905	4,470,000	18,871,222
Okanogan, Wash.	1905	444,000	1,633,973
Rio Grande, N. Mex.-Tex.	1905	2,317,113	27,337,078
Strawberry Valley, Utah	1905	1,250,000	3,408,094
Umatilla, Oreg.	1905	1,000,000	5,324,457
Yakima, Wash.	1905	10,000,000	60,350,928
Sun River, Mont.	1906	7,372,000	10,050,013
Williston, N. Dak.	1906	(²)	409,095
Orland, Calif.	1907	607,000	2,564,519
Grand Valley, Colo.	1911	3,021,663	6,765,733
King Hill, Idaho	1917	1,987,834	1,987,834
Yuma auxiliary, Arizona	1917	(³)	2,205,487
Riverton, Wyo.	1920	9,465,000	26,626,000
Owyhee, Oreg.-Idaho	1920	17,715,000	18,998,744
Valc, Oreg.	1926	3,590,000	4,962,687
Weber River, Utah	1927	3,000,000	2,725,885
All American Canal, Ariz.-Calif.	1928	38,500,000	67,614,755
Boulder Canyon, Ariz.-Nev. (Hoover Dam and powerplant)	1928	126,500,000	172,070,000
Bitter Root, Mont.	1930	750,000	1,037,087
Baker, Oreg.	1931	200,000	281,589
Burnt River, Oreg.	1935	550,000	601,026
Central Valley, Calif.	1935	170,000,000	737,774,000
Colorado Basin, Wash.	1935	487,030,228	754,476,000
Frenchtown, Mont.	1935	220,000	290,797
Humboldt, Nev.	1935	2,000,000	1,214,321
Hyrum, Utah	1935	930,000	953,854
Kendrick, Wyo.	1935	20,004,000	37,738,385
Moon Lake, Utah	1935	1,500,000	1,599,359
Odgen River, Utah	1935	3,500,000	4,735,284
Parker Dam, Ariz.-Calif. (power)	1935	21,767,000	24,201,808
Provo River, Utah	1935	9,074,000	33,452,199
Sanpete, Utah	1935	375,000	374,540
Truckee storage, Nevada-California	1935	1,000,000	1,092,423
Buffalo Rapids, Mont.	1937	3,055,000	5,609,336
Colorado-Big Thompson, Colo.	1937	31,702,772	164,131,000
Colorado River, Tex.	1937	20,000,000	23,901,794
Deschutes, Oreg.	1937	8,000,000	12,943,000
Gila, Ariz.	1937	19,474,000	60,083,860
Pine River, Colo.	1937	3,240,000	3,471,437
Tucumcari, N. Mex.	1937	8,278,000	15,540,011
Austin, W. C., Okla.	1938	5,600,000	12,295,102

¹ Estimated in H. Doc. 1202, 61st Cong., 3d sess., Fund for Reclamation of Arid Lands, 1911.

² Combined cost of Williston and Buford-Trenton estimated in 1911 at \$1,195,000.

³ Included in estimate of Yuma project.

⁴ Exclusive of contemplated allocation of \$1,553,565 of cost of Imperial Dam herein included in All American Canal project.

⁵ Exclusive of cost of storage works (Conchus Dam) constructed by Corps of Engineers.

Project	Date of authorization	Estimated total cost at time of authorization	Estimated total cost, June 30, 1952
Fort Peck, Mont.-N. Dak., (exclusive of powerplant and dam)	1938		\$25,400,000
Fruitgrowers Dam, Colo.	1938	\$200,000	200,309
Buford-Trenton, N. Dak., (WCU)	1939	1,500,000	1,238,546
Paonia, Colo.	1939	3,030,000	6,723,308
Rapid Valley, S. Dak.	1939	1,118,000	977,412
Colorado River, Ariz.-Calif.-Nev. (front work-levées)	1940	(⁴)	\$ 12,100,000
Edon, Wyo.	1940	2,445,000	6,152,000
Mancos, Colo.	1940	1,475,000	3,923,000
Mirage Flats, Nebr.	1940	2,500,000	3,282,688
Newton, Utah	1940	595,000	712,501
San Luis Valley, Colo., (1st unit)	1940	17,465,000	58,230,577
Davis Dam, Nev.-Ariz.-Calif.	1941	41,200,000	118,902,056
Pallsades, Idaho-Wyo.	1941	24,092,000	76,601,000
Seoffield, Utah	1943	640,000	943,889
Balmorhea, Tex.	1944	347,000	420,554
Hungry Horse, Mont. (power)	1944	48,319,000	102,900,000
Intake, Mont.	1944	62,000	90,530
Missoula Valley, Mont.	1944	250,000	278,762
Rathdrum Prairie, Idaho	1944	300,000	482,360
Lewiston Orchards, Idaho	1946	1,466,000	2,488,000
Arnold, Oreg.	1947	220,000	205,535
Cachuma, Calif.	1948	32,310,000	36,967,000
Ochoce, Oreg.	1948	1,500,000	849,830
Preston Bench, Idaho	1948	453,000	449,554
Solino, Calif.	1948	45,577,000	47,111,000
Fort Sumner, N. Mex.	1949	1,798,000	2,434,257
Grants Pass, Oreg.	1949	100,000	100,000
Weber Basin, Utah	1949	69,534,000	70,385,000
Canadian River, Tex.	1950		96,079,100
Eklutna, Alaska	1950	20,365,400	33,800,000
Middle Rio Grande, N. Mex.	1950	30,179,000	29,606,000
Vermejo, N. Mex.	1950	2,679,000	2,919,000
Collbran, Colo.	1952		17,236,000

MISSOURI RIVER BASIN

Project	Date of authorization	Estimated total cost at time of authorization	Estimated total cost, June 30, 1952
Hostwick division, Nebraska-Kansas	1944	\$8,104,000	\$52,705,000
Canyon Ferry unit, Montana	1944	11,025,000	28,844,000
Crow Creek pump unit, Montana	1944	1,525,000	1,768,000
Frenchman-Cambridge division, Nebraska	1944	26,894,500	73,943,000
Kirwin, Kans.	1944	10,000,000	20,474,000
Marias, Mont. (lower unit)	1944	19,700,000	67,878,000
Rapid Valley unit, South Dakota	1944	2,470,000	9,630,000
Webster unit, Kansas	1944	7,800,000	24,636,000
Angostura unit, South Dakota	1944	3,300,000	14,163,000
Boysen unit, Wyoming	1944	8,202,000	34,264,000
Dickinson unit, North Dakota	1944	354,630	1,824,000
Fort Clark unit, North Dakota	1944		774,000
Keyhole unit, Wyoming-South Dakota	1944	750,000	4,820,000
Savage unit, Montana	1944		504,000
Cedar Bluff unit, Kansas	1944	7,611,000	18,286,000
Heart Butte unit, North Dakota	1944	2,407,280	6,223,000
Shadehill unit, South Dakota	1944	2,327,000	11,445,000
St. Francis unit, Colorado-Kansas	1944	13,311,600	15,589,000
Missouri diversion unit, Montana	1944	23,831,000	61,903,000
Jamestown unit, North Dakota	1944	6,984,000	8,876,000

⁴ \$100,000 per year.

⁵ Except for total estimated cost, figures include \$3,467,000 of the cost of Corps of Engineers Harlan County Dam allocated to irrigation.

⁶ Except for total estimated cost, figures include \$6 million of the cost of Corps of Engineers Red Willow Dam allocated to irrigation.

(5) *Ninety-eight percent of the project's cost would be borne by the taxpayers of the 44 States in which the project is not located*

Less than 2 percent of the cost of the Colorado River storage project would be borne by the taxpayers of the States of Colorado, New Mexico, Utah, and Wyoming. The percentage of the Federal tax burden paid by those States, of the other States of the Union, and the amount in dollars which each will have to pay, as calculated by the Council of State Chambers of Commerce, is as follows:

Cost to the States of the Colorado River storage project

State	Percent of Federal taxes borne by the States	Actually authorized		Authorized and contemplated	
		Cost of project on construction	Cost of interest on construction allocated to irrigation	Cost of project on construction	Cost of interest on construction allocated to irrigation
Alabama	0.93	\$10,161,600	\$13,290,400	\$15,351,300	\$31,889,700
Arizona	4.41	4,481,300	5,851,800	6,700,100	14,650,900
Arkansas	48	5,216,400	6,851,400	7,924,800	16,450,200
California	9.22	100,774,000	131,061,600	152,222,200	316,153,800
Colorado	1.01	11,030,300	14,422,800	16,475,100	34,632,900
Connecticut	1.88	20,518,400	26,946,400	31,018,800	64,465,200
Delaware	1.60	5,465,000	7,140,000	8,255,000	17,145,000
Florida	1.47	16,087,100	20,991,000	24,269,700	50,406,300
Georgia	1.30	14,209,000	18,564,000	21,463,000	44,579,000
Idaho	2.30	2,811,800	3,712,800	4,292,600	8,915,400
Illinois	7.64	\$3,595,300	100,080,200	136,136,400	261,975,600
Indiana	2.85	27,971,500	36,414,000	42,100,500	87,430,500
Iowa	1.21	10,622,300	17,278,800	19,977,100	41,400,900
Kansas	1.07	10,630,300	14,622,800	16,014,700	33,261,300
Kentucky	1.01	11,030,300	13,652,200	17,995,900	37,376,100
Louisiana	1.09	4,153,400	5,426,800	6,273,800	13,030,200
Maine	1.38	21,343,400	27,840,000	32,101,200	66,865,600
Maryland	1.95	38,301,900	46,124,400	53,327,800	110,726,700
Massachusetts	3.23	35,301,900	46,124,400	53,327,800	109,100,200
Michigan	5.78	18,462,400	23,970,400	27,730,800	57,697,300
Minnesota	1.68	5,027,800	6,588,800	7,534,000	15,073,400
Mississippi	2.46	27,106,400	35,414,400	40,944,800	85,630,200
Missouri	2.48	3,398,400	4,426,800	5,051,200	10,630,200
Montana	3.11	1,978,800	2,611,600	2,981,400	6,486,400
Nebraska	1.73	7,748,800	10,424,400	12,052,300	25,051,700
Nevada	1.16	2,951,100	3,885,600	4,457,700	9,236,800
New Hampshire	3.92	30,506,000	61,603,600	69,760,200	124,120,800
New Jersey	3.27	3,398,300	4,426,800	5,118,100	10,630,200
New Mexico	14.75	161,217,500	210,630,000	243,522,500	605,777,300
New York	1.38	15,084,400	19,706,400	22,781,800	47,543,200
North Carolina	1.22	2,404,000	3,141,600	3,632,300	7,543,900
North Dakota	6.30	60,842,700	91,219,200	105,498,000	210,113,100
Ohio	6.30	10,824,700	14,137,200	16,314,000	33,047,100
Oklahoma	0.99	10,385,500	13,666,000	15,681,500	32,575,500
Oregon	7.53	82,302,900	107,528,400	124,320,300	256,202,900
Pennsylvania	7.53	5,484,900	7,425,500	8,585,200	17,850,800
Rhode Island	8.82	0,282,000	3,427,200	3,927,400	8,220,600
South Carolina	2.1	2,633,200	3,427,200	3,927,400	8,220,600
South Dakota	1.17	12,788,100	16,707,700	19,319,700	40,110,300
Tennessee	4.05	44,296,500	57,834,000	66,865,500	138,874,500
Texas	4.05	3,716,200	4,855,200	5,613,400	11,628,600
Utah	1.16	1,748,800	2,284,800	2,641,100	5,498,200
Vermont	1.48	16,176,400	21,194,400	24,434,100	50,769,200
Virginia	1.57	7,780,300	10,138,800	11,722,100	24,345,900
Washington	2.05	22,406,500	29,274,000	33,945,600	70,294,500
West Virginia	2.05	1,630,500	2,142,000	2,476,500	5,143,500
Wisconsin	1.18	15,411,300	20,134,800	23,279,100	48,348,900
District of Columbia, Hawaii, Alaska, etc.	1.41	1,093,000,000	1,428,000,000	1,651,000,000	3,420,000,000
Total	100.00	1,093,000,000	1,428,000,000	1,651,000,000	3,420,000,000

(6) The appropriation authorization is misleading

Section 12 of the bill reported by the committee contains an appropriation authorization of "such sums as may be required to carry out the purposes of this Act but not to exceed \$760,000,000." This implies that such sum is sufficient to construct the projects authorized by the act. In fact, according to the Reclamation Bureau figures contained in the hearings, an additional \$173,468,300 would be required to construct the authorized features, bringing the total sum to \$933,468,000.

In view of the notoriously inadequate estimates made in the past by the Bureau, it is a very good possibility that ultimate costs for these features alone will be well over \$1 billion.

In any event it should be thoroughly understood that the figure used in the bill will not, according to Bureau estimates, construct this project. Instead of \$760 million the actual figure is \$933 million, or, if a lower Curecanti should be constructed (either is authorized by the bill) the cost would be \$894 million. Here are the figures taken from those supplied by the Bureau at pages 64-67 of the hearings. The projects here accounted for are only those named as authorized in section 1 of the bill:

11 participating projects	\$304,356,300
Glen Canyon Dam	421,270,000
Flaming Gorge	82,942,000
Nawajo (dam and reservoir only)	36,400,000
Curecanti (940,000 acre-feet)	49,305,000
Curecanti (modified plan)	\$894,273,300
	88,500,000
	933,468,300

Actually, the project development sought to be authorized by the bill is just the starter for some 34 or more storage and reclamation projects specifically named, contemplated, and designated in House Document 364 as the upper Colorado River storage project, involving a construction cost of \$1.6 billion at least, or over twice the amount of the appropriation set forth in the House bill. The figure of \$760 million in the House bill is an attempt to hide from Congress the true cost of the development.

(7) The huge concealed Federal subsidy to the States of Colorado, Wyoming, Utah, and New Mexico is unwarranted and unconscionable

Under the proposed plans of financing the project, the concealed subsidy by way of accumulating interest on money borrowed to construct the project would be huge. Its burden would have to be borne by the Nation's taxpayers for generations to come.

Under the repayment provisions of the Senate approved project bill, the concealed Federal subsidy on only the projects recommended by the Secretary of the Interior (Glen Canyon and Echo Park storage units and 11 participating projects) as estimated and admitted by the Bureau of Reclamation would be \$1,153 million over the repayment period of \$3,150 per acre on the 366,000 acres to be irrigated. If the four additional storage units and the Navajo, San Juan-Chama, and Goosberry participating reclamation projects authorized by the Senate bill are included, the corresponding Federal subsidy, based upon equivalent methods of computation, would amount to \$4 billion or over \$5,000 per acre on the 745,000 acres to be irrigated.

Under the repayment provisions of House project bill, the concealed Federal subsidy on the minimum number of projects authorized by the bill (4 storage units and 11 participating projects) would amount to \$1.6 billion at the end of the overall repayment period of 90 to 95 years, or \$4,300 per acre on the 366,000 acres to be irrigated; but with the inclusion of additional projects contemplated for authorization, the subsidy would be substantially the same as under the Senate approved bill, namely \$4 billion or \$5,000 per acre.

As compared to Federal subsidies amounting to \$3,000 to \$5,000 per acre that would be involved in the project, the value of irrigated land in the area of the proposed reclamation projects averages only about \$150 per acre.

In view of the fact that the crops that would be grown on the proposed project's high altitude marginal land would be largely hay,

grain, and forage crops for livestock, and dairy products, which are now largely surplus and would in turn be resubsidized under the farm program, the huge Federal subsidy required for the proposed upper Colorado River project would be a totally unwarranted and unconscionable burden on the Nation's taxpayers for many generations hence.

(8) *The project's financial scheme is wholly unsound and will burden taxpayers for generations to come*

(a) *Irrigation projects are financially infeasible, requiring an average subsidy of 88 percent of the cost.*—None of the reclamation components of the project would be financially sound themselves. The original direct irrigation investments on the 11 projects recommended by the Secretary range from \$200 to nearly \$800 per acre for the central Utah project (initial phase). For the Navajo project authorized by the Senate-approved bill, the original investment would be over \$1,500 per acre. Including the cost of the storage units allocated to irrigation, the average direct investment (construction cost) disregarding hidden interest, would be \$750 to \$900 per acre, varying with the number of projects included.

As compared to these costs, the average value of already irrigated farmlands in the project area is about \$150 per acre. Thus, the average investment proposed by the project would be 5 to 6 times the average value of the land after irrigation.

Of the total irrigation investment, the irrigation water users on the average would be able to repay about 12 percent. Consequently, these irrigation projects must be subsidized to the extent of about 88 percent either by power revenues or directly from the Federal Treasury by such devices as allocations for assumed "flood-control benefits," "fish and wildlife benefits," etc.

(b) *Project repayment provisions are unrealistic and economically indefensible.*—The proposed repayment plan for the project would be to pay off the entire irrigation investment in 50 years by applying all power and irrigation revenues toward that end. Thereafter, the huge power investment would be paid off in not to exceed 100 years.

The record reveals that such a plan might work in the case of a development comprising the Glen Canyon and Echo Park storage units and the 11 participating reclamation projects recommended by the Secretary of the Interior, but would fail with additional projects added.

At the House hearings, a Bureau witness (E. O. Larson) stated (p. 215, House hearings on H. R. 3383):

With 11 participating projects paid out concurrently, you could do that and pay off power in less than 100 years. But one disadvantage of that plan is that you cannot take on more than the 11 projects without raising the power rate, if additional projects are developed while the power is taking 100 years to pay out, the higher you have to raise the power rates.

Studies indicate that the minimum number of projects specified for authorization in the House bill might pay out under the repayment provisions of the bill, and that it would take 90 to 95 years to repay the power investment with power sold at 6 mills per kilowatt-hour. But with additional projects added, either storage units or irrigation projects, either the power rate would have to be materially increased to get within the 100-year payment period for power, or the period of repayment would be far greater than 100 years.

The \$1.6 billion overall project would have no possibility of pay-out with 6-mill power under the repayment provisions of the House bill. In fact, it could never pay out under such a financial program.

Moreover, to predicate a repayment plan on continuing revenues from hydroelectric power development for 100 years in the future is unrealistic and unsound, in view of possible changes in economic conditions, obsolescence and competing sources of power, including atomic energy.

(c) *The project's financial scheme is based on the impossible assumption that 6-mill power will be marketable for the next 100 years.*—Six mills or more, the price to be charged for power generated by the hydroelectric plants in this project, is an extremely high rate for public power. There is no guaranty that the power can be sold at that rate. The bill does not require that contracts for the sale of the power be negotiated before construction begins, such as was required under the Boulder Canyon Project Act which authorized Hoover Dam.

It is especially doubtful that a market for 6-mill power will continue for 100 years—a full century—as contemplated by the bill. These power units will be located in a region having boundless energy potential in the greatest coal, oil shale, and uranium deposits in the country. These resources, combined with the approaching availability of atomic electric power, will make 6-mill power competitively obsolete in the near future, and the project will not be able to repay the Federal Treasury as scheduled, or, perhaps, at all.

(d) *Low cost nuclear-electric power developments and potentialities have been disregarded and ignored.*—The age of nuclear power has arrived and electric power companies are already building at their own expense new plants which will supply electricity produced by atomic fission.

Tied in the bill are expensive hydroelectric projects, the power revenues from which would be expected to repay not only the cost of the power dams and installations, but also 88 percent of the cost of the irrigation projects.

Planning figures show that it may take up to 100 years to pay for these projects out of the hydroelectric power "cash register." Thus, for financial success, nuclear-electric energy must not be produced more cheaply than hydroelectric energy for at least 100 years.

What are the prospects in this regard? Simply, that not in 100 years, not in 50 years, but in a much shorter time nuclear-electric energy will be produced much cheaper than hydroelectric energy.

Just 15 years ago, in 1940, nuclear power was practically unheard of. By 1945, 5 short years later, the first A-bomb had exploded over Hiroshima. Research for peacetime use was so concentrated during the subsequent 10 years that today commercial nuclear-electric-energy generating plants actually are being constructed.

The British Government announced a 10-year program for building 12 atomic-power stations at an estimated cost of \$840 million. The British say these plants will produce electricity at a cost of 6 mills per kilowatt-hour in comparison with their present conventional generating cost of 7.2 mills.

Unical Status cost figures prepared by James A. Laine of Oak Ridge National Laboratory show the average figure in this country for producing electricity in conventional steam plants is 7 mills per kilowatt-hour, while the cost in a nuclear plant would be 6.7 mills.

That is without considering that nuclear-electric plants can actually produce plutonium as a byproduct which can be sold for a high price, in the neighborhood of \$100 a gram.

If this be done, there is little cost left for power generation to bear; and a reactor plant could put on the transmission line 1- or 2-mill current instead of 6.7-mill current. Even if the military demands become satisfied and the price of plutonium eses back to its fuel value of about \$20 a gram, the sale of byproduct plutonium can be a substantial source of operating revenue.

Within 5 years, atomic powerplants should be commercially competitive with present lower cost sources of power, which, of course, are the hydroelectric plants involved in this project.

(e) *The project is not self-liquidating, as claimed by the Bureau of Reclamation.*—The Bureau presents this as being a self-liquidating project. Plain arithmetic shows that it would not be. Simple interest alone, even at 3½ percent, on \$1 billion of original investment for the smaller project proposed is \$25 million per year; for the larger \$1.6 billion development proposed is \$40 million per year. Total net revenues, as estimated by the Bureau for the smaller or larger developments, would average less than these amounts. As the project could not pay simple interest on the investments, its revenues could never retire the capital cost. The Nation's taxpayers would have to do that. Or if revenues were earmarked to retire the capital, the taxpayers would have to pay about all of the interest. In any event, the net burden on the taxpayers would be more than \$1 billion for the smaller development and \$4 billion for the larger development, by the end of the proposed repayment period. The accumulated debt would keep on increasing until paid off by general taxation since it could never be repaid from project revenues.

(f) *The dams are needed only to subsidize the irrigation projects.*—The sole purpose for including the giant power dams in the bill is to provide power revenues to subsidize 88 percent of the cost of the participating irrigation projects. The dams are first and foremost big "cash registers" for the landowners to be served by the irrigation projects. Their revenues would not benefit the whole Nation, but only those favored few residents of Colorado, Utah, New Mexico, and Wyoming.

Glen Canyon Dam, by far the largest in the chain of four, is located so far downstream that none of the water to be stored in it will be used to irrigate the participating projects.

The Interior Department admits that for at least 25 years the dams will not be needed for river regulation. The facts show that upper basin development will not require these storage units for river regulation for up to 50 years and probably longer.

The dams cannot be justified because of a need for power in the upper Colorado region. Steam power could be produced more cheaply by using the region's vast coal reserves.

The sole function of the dams for at least 50 years will be to provide revenues from the sale of power to pay for the participating projects, if, in fact, the power can be sold at the contemplated 6-mill rate, which is doubtful.

(9) *Central Utah (initial phase), the project's largest irrigation segment, is the most infeasible of all*

The central Utah project (initial phase) which would cost \$127 million for irrigation alone and irrigate but 160,000 acres at a cost of \$794 per acre, exclusive of hidden interest subsidy by the taxpayers. The Bureau studies show that the water users could repay only \$94 per acre over a period of 70 years, or only 12 percent of the cost. Such a submarginal project should not be considered for authorization until the Congress has available to it an investigation and report by a disinterested board of engineers.

It of course cannot be denied, and is not here denied, that such a project would be of some benefit to local area residents and landowners. But such benefits could accrue to any area in which the Federal Government could be prevailed upon to erect some power feature, the revenues of which, for untold periods in the future, would be used to pay 88 percent of the cost of putting water on the land. This, in effect, is a thinly veiled Federal grant.

(10) *Water rights upon which the project depends for power revenues are now in litigation before the Supreme Court and may never become available*

The whole financial structure of the Colorado River storage project depends upon power production at Glen Canyon Dam, and this in turn depends on whether or not the upper Basin States, under the Colorado River compact, have a right, as against the lower Basin States of Arizona, California, and Nevada, to accumulate and withhold water at Glen Canyon for power generation if it is needed for domestic and agricultural uses in the lower basin. The upper basin spokesmen are in disagreement among themselves on this point. Governor Johnson of Colorado submitted a prepared statement in the Senate hearings in which he said:

I am compelled to keep emphasizing that whatever water is stored in the Glen Canyon and Echo Park Reservoirs will be surplus to the agricultural and domestic needs of the upper basin, and must be delivered to the lower basin to satisfy the award of 1,500,000 acre-feet to Mexico and 1 million acre-feet to the lower basin.

Furthermore, should the lower basin require an additional supply of water for agricultural and domestic purposes, the water stored in these reservoirs must be released.

Under the 7-State compact the upper States must deliver at Leo Ferry in each 10-year period 75 million acre-feet to the lower States and 7½ million acre-feet to Mexico before they can use 1 drop of water themselves beyond what they used before the 7-State compact was ratified.

In the current 10-year period that will leave only 3,250,000 acre-feet per year for their total use. In the previous 10-year period they would have had 4,150,000 acre-feet a year. In 1902 the upper basin States under this formula would have had no water at all.

Governor Johnson bases his contention on articles III (e) and IV (b) of the Colorado River compact, which provide:

ART. III (e). The States of the Upper Division shall not withhold water, and the States of the Lower Division shall not require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses.

ART. IV (b). Subject to the provisions of this compact, water of the Colorado River System may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes.

If Governor Johnson is right, all the estimates of power revenues at Glen Canyon are wrong, because they are based upon the assumption that if the upper basin States release to the lower basin 75 million acre-feet in each 10 years (the minimum required by art. III (d) of the compact), they may keep everything else. (Even at that, it would take 25 years to fill Glen Canyon Dam if the next quarter century is as dry as the last 25 years.)

These questions of interpretation of the Colorado River compact are now at issue in the United States Supreme Court in the case of *Arizona v. California, et al.* Whether or not the upper States, who have been impleaded by California, become parties to that case, the Court cannot divide the water in the Colorado River among Arizona, California, and Nevada, without ascertaining how much water these States have a right to receive from the four upper States of Colorado, New Mexico, Utah, and Wyoming. It is foolhardy to invest hundreds of millions in Glen Canyon Dam on an interpretation of the Colorado River compact which is challenged by the Governor of Colorado, and may be set aside by the Supreme Court in an action which is already pending in that Court. The consideration of this bill should await the Supreme Court decision.

(11) *Three physical and geological difficulties in addition to Echo Park make the project unreasonable and impractical*

(a) *There is doubt whether Glen Canyon can support a 700-foot dam.*—In October 1954, Commissioner of Reclamation W. A. Dexheimer wrote that the Bureau's design specialists were "quite concerned" as to whether or not the foundation characteristics of the Glen Canyon site were capable of safely supporting a 700-foot dam. No further tests were made by the Bureau between October 1954 and March 1955. Nevertheless, Commissioner Dexheimer testified at that time before your Subcommittee on Irrigation and Reclamation that a dam of 700 feet could be safely built.

At 700 feet Glen Canyon would be the second highest dam in the world, second only to Hoover Dam, which is 726 feet high. Yet the foundation rock at Hoover Dam is at least three times as strong as the sandstone formation at Glen Canyon. This formation is nothing more than a weakly cemented sand dune. It was created geologically by the wind depositing one sand dune on top of the other.

The minority members of your committee are not satisfied that the Bureau of Reclamation officials have proved their case sufficiently that a 700-foot dam can be safely constructed at the Glen Canyon site without costly additional safety features.

(b) *The construction of Glen Canyon Dam will endanger Rainbow Natural Bridge.*—Rainbow Natural Bridge is a fragile structure of soft sandstone. Dynamite will be exploded within a mile on either side of the bridge, thus jeopardizing a rare natural wonder. In addition, seepage from the Glen Canyon Reservoir may back up under Rainbow Arch. If the sandstone of Rainbow Bridge gets wet and soaked up with water, it will be reduced in strength and may crumble.

(c) *Large quantities of water may be absorbed and lost in the walls of Glen Canyon.*—Bureau officials concede that at least 3 million acre-feet of water will seep into the porous sandstone walls of Glen Canyon, but they failed to make studies to determine the exact quantity of

water that may be lost in this way. However, it has been independently calculated, assuming 250 miles of canyon wall and an average depth of 200 feet, that 32 million acre-feet would be absorbed by the porous sandstone walls. This is more than the storage capacity of the entire Glen Canyon Reservoir. Stacked on a football field, this amount of water would tower over 6,000 miles into the sky. It would be taken out of use forever in this highly arid region that so badly needs every available drop of water.

(12) *The benefit-cost ratio has been distorted contrary to reclamation law in an attempt to justify the project's unsound economics*

The bill would, in effect, approve the use of the so-called benefit-cost ratio for testing the economic justification of irrigation projects. This has never been authorized by law. The testimony shows that, as now practiced, the benefit-cost ratio is simply a device used in attempting to justify projects, which are both economically and financially infeasible, (1) by use of fictitious and unrealistic values to inflate the benefits, while (2) at the same time overlooking factors of cost to the Nation which would result from the project.

Example No. 1.—On one participating project (the Hammond), the Reclamation Bureau would collect from the farmers only \$2.02 per acre per year, but says the direct benefits are \$41.50 per acre per year, or 2,000 percent of the amount it would require the farmer to pay. This contrast in benefits and repayment ability is simply not believable. Any formula achieving such a result obviously needs a drastic overhauling.

Example No. 2.—The Government's revenues from firm power production at Hoover, Davis, and Parker Dams would be decreased as much as 25 percent during the time (which may be as long as 25 years) the storage dams of the proposed project are filling. This loss has been ignored by the Bureau.

In view of these major discrepancies, coupled with the fact that most of the projects named in the bill have a marginal benefit-cost ratio under the Bureau's own figures, there should be an independent review of the Bureau's computations by a group of impartial expert economists. On the Seedskadee project, for instance, the Bureau had to find \$638,500 of "indirect benefits" and \$313,100 of "public benefits" to add to the finding of \$614,500 in "direct benefits" (all items over a 100-year period), to arrive at a final ratio of only 1.46 to 1. The "indirect benefits" category includes such nebulous factors as "the increase in profits of all business enterprises handling, processing, and marketing products from the project and profits of all enterprises supplying goods and services to the project farmers," while the "public benefits" category is even more speculative, including dollar figures for Bureau guesses as to the "increase or improvement in settlement and investment opportunities, community facilities, and services and stabilization of the local and regional economy."

The only true criterion of economic justification of reclamation is reimbursability which has been the required basis of findings of feasibility since the inception of Federal reclamation in 1902. It should be maintained in the law without change. This the project utterly fails to do.

(13) Fifty years of reclamation law, precedent, and experience are jettisoned by the project

Example 1.—Present law requires repayment within 40 years, with respect to power and municipal water, and 40 years plus a development period of not to exceed 10 years with respect to irrigation.

Under this bill:

- (a) The power allocation is permitted to be repaid in 100 years;
 - (b) the municipal water allocation is permitted to be repaid in 50 years from the date of completion of each unit;
 - (c) the irrigation allocation is permitted to be repaid in 50 years "in addition to any development period authorized by law."
- Thus, the repayment period for power is extended 60 years, municipal water 10 years, and irrigation 10 years plus an undetermined period, over existing law.

Example 2.—Present law requires that no contract relating to power or municipal water be made unless it will not impair the project for irrigation purposes. Under the bill, contracts relating to municipal water may be made without regard to this section. Although this may not be a bad result, it is another symptom of eroding the reclamation law by individual pieces of legislation instead of considering such matters in the context of a national water policy bill.

Example 3.—Present law requires interest at "not less than" 3 percent per annum on the power investment. Under this bill, interest would be the cost of money to the United States, or about 2½ percent per annum.

Example 4.—Present law requires a finding of engineering and financial feasibility, the latter to be in terms of the 40-year repayment ability. Under this bill, the so-called benefit-cost ratio has been substituted for financial feasibility in order to come up with an "economic" feasibility based on fantastic national benefits supposedly to be realized. This constitutes one of the greatest breaches of present law and leaves Congress with no well-defined standards of feasibility whatsoever.

(14) The project wholly ignores the Hoover Commission report

The Hoover Commission report has just been released. The bill ignores any of the counsel to be gained from the labors of the Commission, which has completed a detailed study of this entire complex field. In fact, the proponents of this gigantic scheme tried to get it through Congress before the Hoover Commission made its report, so blind have they been to the true national welfare in connection with water resources.

However one may disagree with some of the recommendations of the Commission and the task force, your minority submits that the members of this group should be heard before Congress commits itself to the billion-dollar precedents of this bill. It should not be forgotten that this Commission was established by Congress to report to Congress so that Congress might consider the advisability of legislation to implement some if not all of the Commission recommendations. Regardless of the jeers heard from spokesmen for special interests, your minority considers that the people of this country respect the industry and the sincerity of the Hoover Commission inquiries.

Your minority believes that the people are entitled to and will demand a thorough consideration of the Commission reports in every

field. For example, in the water resources field, the Commission report relates five conditions which the task force found to be necessary for the success of reclamation projects:

1. They must have technical feasibility.
2. They must be sound financially.
3. They must have fertile soil capable of agricultural production over long periods of years.
4. They must have adequate and suitable water supply.
5. There must be farmers available who are interested in and enthusiastic for irrigation agriculture.

Relating these to the project before Congress, the record shows there is question as to the technical feasibility of the proposed 700-foot Glen Canyon Dam; the financing is wholly unsound; the soil by and large is of dubious quality; and the water supply is actively in litigation in the Supreme Court.

The Commission further found "experience shows that the farmers alone cannot bear the whole cost of irrigation projects." Conceding this, would it not be a proper inquiry for Congress to determine what the farmers should pay? Should they pay only 12 percent, as this bill allows? If so, who should bear the balance of the cost, local area residents or the taxpayer in every corner of this Nation?

The Hoover Commission makes a pertinent suggestion on this score—that the beneficiaries (including States) contribute at least 50 percent—which may well be forgotten if the "hydro-headed" monster now before Congress becomes law.

(15) The bill includes projects which have been disapproved by the Bureau of the Budget

The Budget Bureau has specifically recommended that the Curcanti, Flaming Gorge, and Navaho units not be authorized at this time. The Bureau has pointed out that there is no adequate basis for appraising the merits of these projects due to the lack of data on engineering, financial, and economic feasibility, detailed estimates of costs and benefits, and sufficient other pertinent information necessary for a complete understanding of the justification and necessity for the works.

With respect to participating projects outrightly authorized for construction in section 1 of the bill, the Bureau of the Budget has submitted that their authorization should be conditioned upon a new finding of favorable economic justification by the Secretary of Interior which must include (a) a joint study with the Department of Agriculture of the direct agricultural benefits of each project and (b) a reevaluation of the nondirect benefits of each project, based upon a reexamination of the methods presently used to compute the indirect and public benefits of reclamation projects. Based on the insufficiency of the available information regarding these participating projects, which this bill would authorize, the Budget Bureau has stated that a reexamination is necessary "so that there could be no doubt about the economic justification of the projects finally undertaken."

Congress should not undertake to authorize questionable or unjustified projects. Until the information requested by the Bureau of the Budget is made available, Congress should not act on these projects.

(16) *The bill varies substantially and materially from the administration-approved project.*

(a) *The bill's projects are different.*—The administration recommended authorization of 2 storage units, Glen Canyon and Echo Park, and 11 participating reclamation projects, at an estimated construction cost of \$930 million.

The Senate bill authorizes 6 storage units including Curecanti, Flaming Gorge, Juniper, and Navajo in addition to Glen Canyon and Echo Park, and 22 additional reclamation projects, involving a combined estimated construction cost of over \$1.6 billion.

The House bill authorizes 4 storage units—Glen Canyon, Flaming Gorge, Curecanti, and Navajo—and the 11 participating projects recommended by the Secretary. It also in section 2 provides what is tantamount to an advance commitment of the Congress to authorize the 23 additional reclamation projects (the same as named in the Senate bill with 1 addition, Animas-LaPlata).

(b) *A reexamination of economic justification of the project, called for by the administration, is necessary.*—The administration recommended that the legislation provide that authorization of the 11 participating projects be conditioned on a new finding of favorable economic justification and of financial feasibility under specified financial requirements, with reports submitted to the Congress on each project, and that new studies of direct agricultural benefits be made jointly with the Department of Agriculture.

The bill contains no provision for the reevaluation specified by the administration whatsoever and hence ignores this important requirement set forth as a condition precedent to administration approval.

(c) *Financial repayment features are basically contrary to those approved and recommended by the administration.*—The administration set up as a requirement that all reimbursable costs of the project should be repaid in 50 years, together with interest on the unamortized balance of the investments in power and municipal water supply features.

The bill departs materially from the specified repayment criteria. It apparently adheres to repayment of irrigation investment in 50 years, as recommended. However, it provides that the power investment be repaid within the expected economic life of the power unit but not exceeding 100 years, or twice the 50-year repayment period specified by the administration.

(17) *The project should not be authorized at this time because the economic, engineering and financial survey prerequisite to its proper evaluation are still inadequate and incomplete.*

The official reports of the Bureau of Reclamation and the testimony of Bureau witnesses clearly show that the investigations, surveys, and studies in regard to engineering and the economic and financial aspects of the proposed Colorado River storage project and participating projects are incomplete and inadequate.

The provisions of the Senate bill itself, which require further studies and report by the Secretary of the Interior on economic feasibility and financial reimbursability of the 11 participating projects previously recommended by the Secretary, demonstrate that reliable information is not now available even on those projects that the Bureau has already reported upon. The House bill seeks to cover up this def-

iciency even in the face of the clear recommendation of the administration that these projects be reevaluated before authorization.

The Senate bill with which the House bill might go to conference includes authorization of scores of projects on which no reports have as yet been submitted by the Secretary of the Interior, on many of which only the barest reconnaissance data is now available.

The record reveals the need for much more thorough investigations and studies of the proposed storage units. Even as to the Glen Canyon storage unit, the Interior Department officials have expressed concern over the adequacy of the foundations and have stated that decisions as to final plans would not be made until further studies are completed after authorization. Plans for the other storage dams are even less decisive. Thus there is grave question as to the adequacy of cost estimates and the financial feasibility of the storage features of the project.

In addition, it is clear from the record of the hearings that the proposed storage units of the project will not supply any water to the reclamation components now proposed and are not needed to enable these projects to obtain and use the amount of water estimated by the Bureau to be required. Yet under the House bill, it is proposed to spend about \$600 million, and under the Senate bill about \$750 million, for storage units that are not to be needed to meet basic water supply requirements for at least 25 years and probably more.

In view of the foregoing, action on the project at this time would be premature and without justification.

(18) *The project would critically impair the quantity and quality of water to which the lower Colorado Basin States, particularly southern California, have prior rights.*

A football field is slightly more than a acre of ground. Cover it a foot deep with water and you would have about an acre-foot of water. Cover it with a tower of water 11,000 miles high, and you have an idea of the amount of water purchased southern California will lose if the project is built as now planned.

This is true because the multi-billion-dollar project is designed to put approximately 48 million acre-feet of water in storage behind dams in Colorado, Utah, Wyoming, and New Mexico. Another 10 million acre-feet of water would be dissipated into thin air by evaporation during storage.

In all, 58 million acre-feet of water would not flow down the Colorado River from the upper basin States of Wyoming, Utah, New Mexico, and Colorado to the lower basin States of Arizona, Nevada, and California. Thereafter, the dams would evaporate another 600,000 acre-foot of water per year, enough to supply the needs of a city of 3 million people. The magnitude of the evaporation is apparent when compared with the 400,000 acre-foot figure that is to be put to beneficial use by the 11 irrigation components recommended by the Bureau.

Yet so vital is this water in the lower basin that even today amid Arizona and California are before the United States Supreme Court litigating their rights to it.

California agrees that the upper basin is entitled to use some of that 58 million acre-foot, but contends that most of it must be left flowing down to the lower basin under provisions of a solemn contract entered into by these 7 States in 1922 known as the Colorado River compact.

California's basic position is that she conforms to the compact and must insist that the States of the upper basin and the Federal Government do likewise in the planning and administration of the project. California thus is fighting only to preserve rights to water she already has and not for any new and additional water rights.

That is why billions from the United States Treasury should not be spent to build the upper Colorado project in such a manner as merely to transport the oasis of southern California to Wyoming, Colorado, Utah, and New Mexico. In the process, financial ruin would be imposed on almost 6 million southern Californians. These States can plan their projects without this disastrous result and California demands that they do so.

Additionally, the project threatens seriously to impair the quality of water, if any, southern California might receive from the river after project construction.

No one contends the quality of the water even now received from the Colorado River approaches excellence. Millions of dollars have been spent for purifying devices to remove hardening alkalis and salts before use in homes and factories. Yet witnesses for the Bureau of Reclamation have told Congress they neither concern themselves with water quality nor recognize any responsibility whatever to operate the proposed project with regard to this vital subject.

Only after searching cross-examination would they admit that their files contained no more than the most sketchy information on the subject. Based on it they reluctantly confessed even the initial features of the overall project would raise these impurities by a thumping 12 percent when the water reaches California.

That figure would jump to 54 percent if additional projects now in the planning stage are added to those presently under consideration.

Competent engineers estimate 1.2 tons of alkali and salt would be added to every acre-foot of water available for use in southern California.

Irrigators use at least 3 acre-feet of water per acre in a year to grow their crops. That would deposit 3.6 tons a year of such impurities on every acre. Just how long soil could continue growing crops in face of this is speculative.

The effect would be similar in home and industrial water systems, to say nothing of the already irritated digestive tracts of almost 6 million southern Californians.

(19) The project would critically impair operations at Hoover Dam and lose \$187 million in revenues to the Federal Treasury

During the 25-year period of filling the dams contemplated by the bill, firm power output at Hoover Dam would be reduced by 25 percent. Secondary energy would be wiped out entirely. This shortage would cost the lower basin about 200 additional millions of dollars for replacement power and cost the Federal Treasury about \$187 million in lost revenues.

To say the least, this is a strange power policy for the Federal Government to follow. First it builds Hoover Dam on the lower reaches of the Colorado River. The power can be produced very cheaply so the Secretary of the Interior enters into contracts to sell certain quantities of power at rates of 2 mills per kilowatt-hour and less. Then the Federal Government builds additional dams upstream.

Here power cannot be produced so cheaply. But in order to generate power at these upstream dams to be sold at 6 mills, it cuts back the production of 2-mill power at Hoover Dam, which is already constructed and operating efficiently. This is Government waste with a vengeance.

Essentially, the Colorado River storage project implies the destruction or impairment of 25 percent of the value of the Boulder Canyon project to help make possible the construction of a new project upstream, to furnish power at over twice the cost and water at several times the cost of that which would be taken away from the lower basin, in violation of the covenant of the Government in the Boulder Canyon Project Act and in the power and water contracts made under that act.

Moreover, the Federal Government will be in breach of solemn contractual obligations if it curtails energy output at Hoover by intercepting water for creating power heads at the upstream dams. The project may not legally impound water for power purposes if needed to generate electrical energy at the lower basin dams. If the Federal Government breaches its contracts with power contractees in the lower basin by cutting back power deliveries at Hoover Dam, it will be subject to suit for hundreds of millions of dollars in damages.

(20) The assistance to Navajo Indians in the bill is negligible; cost of project's benefits is \$200,000 for each and every Navajo farm

The assistance to the Navajo Indians in the bill would be negligible without the addition of the costly Navajo reclamation project.

The bill would authorize the Navajo Dam and Reservoir only and this does not irrigate any Navajo lands. The water stored in the reservoir could not be used for irrigation of Indian lands unless and until canals and other facilities of an additional reclamation project are authorized and built, involving a construction cost of \$175 million or more.

According to testimony presented at the hearings, the Indian Bureau contemplates that the additional reclamation project would provide for 1,100 Navajo Indian family farms. The cost per family farm would be about \$200,000. Indian Bureau witnesses estimate the gross income per family farm would be \$5,000 a year. In comparison, it should be noted that the \$200,000 of capital proposed to be expended per family farm would, if invested at 5 percent interest, yield an income of twice the estimated gross farm income.

In view of these facts, consideration might well be given to some different program for use of Federal funds to rehabilitate the Navajo Indians that would be more beneficial to them and more practicable and effective from the standpoint of the Federal Government than the costly irrigation project as proposed. In this connection, the record indicates that it is not certain that the Navajo Indians either want to farm irrigated lands, or would succeed as irrigation farmers.

(21) The project would forever tie the future of the intermountain West to a horse-and-buggy farm economy and forestall development of its rich industrial potential

The region in which the project would be constructed is unbelievably rich in natural resources. These are the measures of its future potential.

The water resources of the area are of measurable quantity, and their potential benefits to agriculture would be small. On the other hand, the benefits which these limited water supplies could bring to a program of industrial expansion are immeasurable and of unlimited value.

Irrigation is a very uneconomic user of water. The value of crops grown under western irrigation is equal to about 10 cents for each 1,000 gallons of water withdrawn. The value of manufactured products amounts to about \$5 for each 1,000 gallons withdrawn.

The potential thermal power resources of the project area are beyond comprehension. In the heart of this land, the Bureau of Reclamation is proposing a horse-and-buggy economy that would cripple forever opportunities to create a profitable and unlimited industrial economy.

Steam or nuclear plants to provide electrical energy in these States could be built by private capital, with no Federal subsidy involved. They would create new employment in the coalfields and in the industries that would build to take advantage of the available power. Thus a sound stone would be placed in the area's economy by each plant and each job created, and the plants, the new industries, and those employed by them, would pay taxes to the local, State and Federal Governments.

Agricultural development will seriously injure, if not kill, all opportunities to build such a sound economy. There is only so much water, and the most wasteful way to use it would be by subsidizing unneeded, extravagant, and wasteful irrigation projects. The hope of the area lies in a modern-age industrial program, not a surplus-ridden farm economy.

JOHN P. SAYLOR.
JOHN R. PILLION.
CRAIG HOSMER.
JAMES B. UTT.
JAMES A. HALEY.
GEO. A. SHUFORD.

A MINORITY REPORT IN OPPOSITION TO H. R. 3383 AS REPORTED BY THE HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

INTRODUCTION

Since the very early days of the Nation's history the Federal Government has been able to promote economic growth by expenditure of its handiest and cheapest resource—land. Millions of acres of land have been given to individuals, to corporations, and to lesser Government agencies, the proceeds from the sale of which, or the use of which were for the promotion of the Nation's economy. Now, however, Federal investment in economic growth involves cash from taxpayers' funds in the United States Treasury. The sum total of all such expenditures affects the tax rates, and because the taxpayer is paying such a large share of his income in taxes he is entitled to get his full money's worth from each suggested additional expenditure.

The Colorado River storage project as here proposed, in our opinion, is one which is uneconomical and unnecessary, and will not contribute to our national economic growth, but on the contrary will constitute a handicap and a drain on the Nation's purse.

EXPENDITURES FOR WATER RESOURCES

Since 1941 the Federal Government has appropriated some \$9½ billion for water resource projects and has authorized projects which will cost another \$18½ billion. We are informed that if all proposed projects presently under discussion and consideration, including the upper Colorado River storage project, were authorized, the above totals would amount to over \$70 billion. This is an astounding figure, it is equal to one-fourth of the national debt.

Costs

Most Federal water projects seem to have one thing in common, a major underestimation of costs.

Estimates of benefits also have been excessive. Examination by the Hoover Task Force on Water Resources has revealed that construction cost per acre for irrigated land of a group of Bureau of Reclamation proposed projects varied from \$140 to \$1,475 an acre, despite considerable doubt that any of the land involved, if provided with a full water supply would have an average market value over \$150 per acre. Any amount spent for construction over that sum would amount to a subsidy.

COSTS IN BILL IN PRESENT FORM

The cost of the proposed storage projects, plus the participating projects, as originally offered in this bill was estimated at approxi-

mately \$1,055 million. By eliminating Echo Park and its recreational area by \$176 million and \$21 million, as well as the fund for Curecanti Dam and Reservoir of \$49 million, and adding to the project \$36 million for the Navajo Dam, plus an overall reduction of 10 percent, we arrive at a cost figure of \$760 million. This method of cost determination to us is unsound. It leaves the actual cost somewhere, but considering all of the provisos, and possibilities of increases as a result of future study, there is no possibility of determining what this cost will be.

This is unrealistic. The bill as the majority reports it commits the Nation to a program of construction the cost of which, to put it mildly, is an unknown amount. This is one reason why we oppose this bill.

COSTS PER ACRE

The Bureau of Reclamation presented cost figures for initial participating projects. Costs allocated to irrigations varied from \$210 to \$794 per acre, or an unweighted average of over \$400 per acre. Little of this land even with sufficient water would command a fair market value as high as this. Costs estimated for some 22 other possible participating projects, on the basis of only partial investigation, run as high or higher, and up to \$1,530 per acre in one instance. We deem these costs excessive and economically unsound.

There exist at least 20 million acres of undeveloped fertile land in humid areas of the United States which can be developed for agriculture at a fraction of the cost of the acreage serviced by the upper Colorado storage project.

The Department of Agriculture reports there are more than 20 million acres of undeveloped fertile land in the humid areas of the United States which can be developed by low-cost drainage. Development costs would be from \$60 to \$100 an acre for such land. The cost involved to taxpayers of the Nation in developing new and supplemental water for the acreage serviced by the upper Colorado project, which amounts in all to only about 600 square miles of new land, would range up to 50 times as much for each acre developed.

As an example, the Department of Agriculture lists acreage available for low-cost development in these 21 States as follows:

Acres		Acres	
Alabama.....	683,000	Missouri.....	323,000
Arkansas.....	1,865,000	New York.....	100,000
Florida.....	1,970,000	North Carolina.....	1,157,000
Georgia.....	1,721,000	Ohio.....	95,000
Illinois.....	69,000	Pennsylvania.....	90,000
Indiana.....	135,000	South Carolina.....	996,000
Kentucky.....	170,000	Tennessee.....	242,000
Louisiana.....	2,769,000	Texas.....	3,928,000
Michigan.....	690,000	Virginia.....	514,000
Minnesota.....	874,000	Wisconsin.....	316,000
Mississippi.....	1,272,000		

TESTIMONY AT THE HEARINGS

Testimony of proponents of the Colorado River storage project we feel has been hazy and incomplete.

The program as presented by the Bureau of Reclamation lacks preciseness of detail and accuracy of information.

We are asked to authorize a project consisting of some major storage projects and a varying number of so-called participating projects. The number of these remains unknown despite voluminous testimony. Not even the precise location, size, and dimensions are presented with any degree of exactitude.

We are told that this additional land is needed to produce crops for an anticipated great increase in population within the next quarter of a century while at the same time we are perplexed by the existence of a surplus of a number of the basic crops.

Again we are astonished to hear that this vitally needed agricultural land will not be able to support the cost of the construction, that power to be generated at relatively high cost at the storage dams will pay all of the cost save a diminutive figure of \$82 million of a total of about \$320 million for irrigation costs. It seems strange to us that 143,000 acres of land getting full irrigation, 243,000 acres getting supplemental water can't do better than that. This is only one-fourth of the cost, and over an indeterminate period of years, something in excess of 50 years.

The project is located in an area where population is 3 persons per square mile, compared to the national average of 51. Where are the consumers of electric power to buy the vast amounts expected to be generated here? What are the inducements offered to newcomers? No evidence has been offered of any new industries or sufficient amounts of domestic power demand to justify this contention.

Most water resource development programs offered to the Congress for approval make use of what is known as the benefit-to-cost ratio, by which it is sought to demonstrate that expected benefits, reasonably demonstrated, will exceed costs. In some borderline cases the national welfare is introduced into the balance. Here in this instance we say the case is not proved and no question of national welfare is involved that does not have a better answer elsewhere.

Here is an attempt to hang a group of projects together, as we see it, some justified and some not, dependent upon an improved source of water supply, to be financed over an excessively long term of years, one-third by water users, two-thirds by power revenues, with a doubtful market for high-cost power, in a thinly settled area, primarily to establish priority of use of such water as may be available. For a project of this nature we cannot in all fairness offer our support.

We suggest that authorization be withheld. At some future date, if proper facts are offered in support of proponent's contentions, we would give further consideration to the project.

EXCESSIVE COST

The bill in its proposed (or present) form amounts to a blank check to a Government construction agency which has been treated overgenerously already in the past. Total costs are unknown, only preliminary and partial studies have been made on most of the participating projects.

Interest charges alone for the full period allowed for repayment are estimated to amount to between \$320 million and \$1,153 million or from about 30 percent to more than 100 percent of the original estimated construction cost. This, of course, will be subject to revision

upward should more participating projects be added, and there are many being talked of, of dubious value to say the least.

Extension of the repayment period to the year 2032 is a departure from precedent and means that it is entirely probable that that year will be beyond the economic life of some of the units.

Almost complete dependence for repayment of the costs of the project upon a system of high-cost hydro projects amounts, in our minds, to fiscal necromancy. There is considerable doubt as to the availability of a ready market for this high-cost power (at 6 mills per kilowatt hour). Sufficient evidence to justify dependence upon this source of revenue for repayment costs has not been presented.

It is doubtful if consumers will utilize and pay the high rates that will be necessary to liquidate the cost of the project, at such high rates as would place project power rates far above that of hydro projects elsewhere. They would necessarily be far above established rates at other reclamation projects.

It is passing strange too, to have such dependence placed on hydro-power near the center of the largest coal reserves in the Nation, which need only to be mined to produce steam-generated power to the full extent of any foreseeable demand. The oil shale deposits of the Colorado Plateau are another potential source of energy to compete with this high-cost hydropower.

EFFECT OF ECHO DAM ELIMINATION

The elimination of Echo Park Dam and Reservoir and restriction in size of the Curicante project in our minds weakens considerably the entire project. The already questionable ability of the project to repay its costs is further weakened. The loss of the revenues from power thus eliminated in our minds are alone sufficient to condemn the entire project in its present form.

Echo Park Dam is still in the bill.—The committee voted to strike the controversial Echo Park Dam from the bill. But is it out?

The Desert News of Salt Lake City, Utah, which has been campaigning hard for the project, reported from Washington on the action by the committee:

Backers of the river bill and Echo Park were not dismayed by the Thursday vote. It has long been a part of upper basin States' strategy to delete the Echo Park Dam in the House bill on the hope that it will be restored by a joint House-Senate conference committee. Otherwise, House leaders said it would be impossible to get the project bill through the Rules Committee and past the House.

Echo Park is still in the bill because we are advised the project will not work without it. Under Secretary of the Interior, Ralph A. Tudor, testified before the 83d Congress that taking Echo Park Dam out of the upper Colorado storage project would be like taking the pistons out of the engine of an automobile. The project will not function without Echo Park Dam.

Commissioner of Reclamation, W. A. Dexheimer, testified before the committee this year that the project would not be economically feasible without Echo Park Dam. He stated that the economic feasibility of the project might be established without Echo Park if some of the participating projects also were deleted. However, this was not done by the committee. In other words, the committee sends to the House a bill which the Commissioner of Reclamation conceded would be economically infeasible.

CONCLUSION

Presuming, and it is a rash presumption in our minds, that the project is actually built at present cost estimates, the power is sold at the bus bar at 6 mills (usual revenue from other Federal power projects ranges from 3 to 4 mills) it will still be at least 78 years from start of construction to completion of construction costs. That is under the most favorable conditions.

As against this possibility there are these factors to be weighed. Reasonable doubt cost can be held down to estimate. This is based on past performance. Reasonable doubt as to sales of power reaching expectations. At least reasonable doubts as to the availability of sufficient water supply.

A project which depends for its justification upon information as incomplete and inexact as has been true in this instance is of doubtful value.

We suggest a great deal more study, the development of more precise cost figures, more economic financing arrangements, before we act upon a project of such magnitude.

The bill as offered by the majority of the committee would commit the Nation to a program which may cost up to \$5 billion before it is completed. This is a project of doubtful value and one based upon utilization of water resources about which there is real doubt as to their existence in fact.

JAMES A. HALEY.
GEO. A. SHUFORD.

Power unit	Cost per mills kilowatt-hour	Profit or loss
Glen Canyon.....	4.7	+1.3
Echo Park.....	5.9	+1
Curecanti.....	8.4	-2.4
Flaming Gorge.....	6.4	-4

ADVERSE REPORT ON UPPER COLORADO PROJECT

(To accompany H. R. 3383)

<i>Initial cost</i>	
Cost of initial project.....	\$1,600,000,000
Cost to each person in United States.....	10
Cost to each congressional district.....	3,500,000

<i>Ultimate cost</i>	
Potential minimum cost of ultimate project.....	\$3,200,000,000
Potential cost to each person in the United States.....	20
Potential cost to each congressional district.....	7,000,000

<i>Who pays the bill?</i>	
Investment by irrigators benefited.....	0
Investment by power companies and consumers.....	0
Investment by upper Colorado States.....	0
Initial investment by taxpayers of United States.....	\$1,600,000,000
Potential investment by United States taxpayers.....	3,200,000,000

Project is financially bankrupt

ALLOCATION OF COSTS

Nonreimbursable, fishing, recreation, flood control.....	\$8,708,000
Municipal water.....	72,275,000
Power consumers.....	656,604,000
Irrigators (farmers).....	915,372,000
Total.....	1,652,959,000

ALLOCATION OF REPAYMENTS

Irrigators to repay (out of irrigation costs of \$915,372,000).....	\$187,787,000 or 20 percent of cost.
Power consumers to repay (out of power costs of \$656,604,000).....	\$1,456,464,000 or 222 percent of cost.

REPAYMENT PERIOD

Provided for in House bill, S. 500 (substitute) (estimated at 6-mill power rate and 2½ percent interest rate, 4 storage units, 12 participating projects).....	Years 100
Estimated repayment period for 6 storage units, 34 participating projects, at actual 2½ percent interest (no figures available).....	120
Two projects, Gooseberry and Emery (Utah), have estimated repayment periods of over.....	200

United States taxpayers to receive valueless dollars

Purchasing power of dollar in 1905.....	\$1.00
Purchasing power of dollar today, in 1955.....	.32
Estimated purchasing power of dollar in 2055 (100 years from now).....	.05

Who subsidizes whom?

Number of acres to be newly irrigated.....	506,000
Number of acres to receive supplemental irrigation.....	406,000
Number of farms to be irrigated at 100 acres per farm, 3 supplemental irrigated acres equals 1 newly irrigated acre.....	6,700 farmers
Number of potential electricity consumers.....	750,000

Subsidy to irrigators by electricity consumers

	<i>Mills per kilowatt hour</i>
Wholesale price of electricity under bill.....	6
Cost of electricity at Glen Canyon.....	4.7
750,000 consumers of electricity would subsidize 6,700 farmers to the extent of the differential between the cost (4.7 mills) and the sale price of electricity (6 mills).....	1.3

Subsidy to irrigators by electricity consumers

Cost of irrigation projects.....	\$915,372,000
To be repaid by irrigators (6,700 farms).....	187,787,000
Direct subsidy by 750,000 electricity consumers to 6,700 farmers.....	727,585,000

Subsidy by United States taxpayers

The loss in value of dollar due to inflation upon \$1,652,959,000 invested now and to be repaid in average of 50 years; estimated loss about two-thirds of investment.....	\$1,217,653,000
Loss of interest at 3 percent upon irrigation investment of \$187,787,000 repayable by irrigators without interest over an average of 50 years; total 150 percent without compounding interest.....	281,680,000

INITIAL COST (\$1.6 BILLION)

The total estimated construction costs for this project is \$1,658,460,100. Based on a United States population of 160 million, the cost would average \$10 for every person in the United States. The cost would average \$3,500,000 for each congressional district with a population of 350,000.

The Senate bill, S. 500, fully or conditionally, authorizes 6 storage units (dams, reservoirs, and hydro plants) and 34 participating (irrigation) projects. The estimated overall construction costs of these projects is \$1,658,460,100.

The House bill, H. R. 3383, was substituted in the House Interior Committee by S. 500. The House bill fully or conditionally authorizes 4 storage units and 34 participating projects. It proposes an authorization of \$760 million. This figure is unrealistic. This estimate was arrived at only for the purpose of making this project a little less unpalatable to the Members of the House.

The bill actually initiates construction on 23 of the 34 participating projects by directing the preparation of detailed designs and specifications for these projects. The cost of these projects was left off the appropriation authorization on the theory that they were merely being "programed." The estimated cost of these 23 projects, amounting to \$570 million, should be added to the estimated authorization of \$760 million.

The House Interior Committee reduced its estimates by arbitrarily cutting 10 percent off the construction costs submitted by the Bureau of Reclamation. It also left off the cost of construction for the Curecanti Dam although it is subject only to a report by the Secretary of the Interior. The arbitrary reduction of the 10 percent and the cost of the Curecanti Dam amounts to \$130 million. The addition of \$130 million and the \$570 million to the \$760 million results in a total cost of \$1,460 million for the projects as authorized by the House bill.

With the prospect of a conference on the Senate and House bills, it is reasonable to count on a total initial construction cost of \$1,658,460,100 for this project.

ULTIMATE COST TO TAXPAYERS (\$3.2 BILLION)

S. 500 and H. R. 3383 would authorize only the "initial phase" of the upper Colorado project. The "ultimate plan" would cost a minimum total of \$3.2 billion or \$1.6 billion additional.

Thus, the potential cost is \$20 per person and \$7 million per congressional district on the average.

The projects included in the present bills are merely the "initial phase" of the proposed upper Colorado storage project. The Senate bill would authorize 6 storage units while the House bill would authorize 4 storage units.

The "ultimate plan" is contained in the report of the Department of the Interior to Congress, April 6, 1954, House Document No. 364, 83d Congress. This "plan" would construct 10 storage units (dams, reservoirs, and powerplants) as compared to the initial phase of 6 storage units in the Senate bill and 4 storage units in the House bill.

The "ultimate plan" for the upper Colorado project lists 100 projects as potential participating irrigation projects. The Senate and House bills would each authorize 34 of these irrigation projects.

The total cost of the additional storage units and irrigation projects contained in the "ultimate plan" is estimated at between \$1.5 billion and \$3 billion. An example of the potential liability is found in the central Utah project. This project is one of the 34 irrigation projects contained in this bill. The initial cost for irrigating 28,000 acres of new land is \$231,044,000. In the comprehensive "ultimate plan," the project would be enlarged to irrigate 200,000 acres of new land. The prorated additional cost for this 1 project will approximate \$1 billion.

A potential liability of \$1,600 million would be a most conservative estimate of the additional cost to the taxpayers to complete the "ultimate plan" over and above the projects authorized by S. 500 and H. R. 3383.

POTENTIAL LIABILITY DUE TO UNDERESTIMATES OF COST

The Bureau of Reclamation issued a report in March 1952 upon the cost increases over original estimates for reclamation projects. This

report upon all projects, dating from 1903 to 1952, showed that the completed project costs averaged 105.7 percent above the original costs estimated by the Reclamation Bureau.

On this basis, it is reasonable to assume that the cost of the "initial phase" of the upper Colorado project will amount to \$3.2 billion rather than the estimated \$1.6 billion.

WHO PAYS THE BILL?

The irrigators who presumably receive the greatest benefits invest nothing in this project.

The power companies would save the original cost of investment in steam plants and purchase power at the cost of generating power in steam plants. They, too, would make no investment of any kind. The power consumers would not be required to furnish any capital.

The four upper Colorado States, Colorado, New Mexico, Utah and Wyoming, escape making any investment. The project is designed, primarily, to enable these 4 States to divide the monies produced by water power among the 4 States.

The full cost of \$1.6 billion (potential, \$3.2 billion) is to be borne by the taxpayers of the United States.

PROJECT IS GUARANTEED BANKRUPTCY

This project is hopeless with respect to financial feasibility. In general, the power users and the taxpayers are called upon to subsidize \$915,372,000 of irrigation costs. The farmers would repay at the most optimistic estimates only 20 percent of the costs in inflated dollars over a period of up to 120 years.

The farm repayments total \$187,787,000 to be repaid without interest after a development period of 10 years.

The purchasing power of the dollar has declined from \$1 to \$0.32 in the past 50 years, from 1905 to 1955. Most of this loss of value occurred in the last 25 years. There is an increasing acceleration of inflation and decline in dollar value. No one can reliably foretell the value of the dollar 100 years from now. However, at the present rate of inflation (2 percent per year or more) the value of the dollar 100 years from now would be nearly zero.

AN ECONOMIC CATASTROPHE

AGRICULTURE		<i>Billions</i>
Agricultural surplus as of May 31, 1955.....	-----	\$4. 89
Agricultural loans on surplus as of May 31, 1955.....	-----	2. 304
Total surplus and loans as of May 31, 1955.....	-----	7. 194

NOTE.—The above figures do not include commitments under law.

This bill would add the production of 506,000 newly irrigated acres and 406,000 supplemental irrigated acres to our agricultural surpluses. The taxpayers and consumers would bear the additional burden of subsidizing this surplus production.

This bill represents a "planned economy" in which production is not to be directed by the demand of the consumer but is planned and directed by our "bureaucratic planners." This bill would commit and

mortgage these lands to an agricultural economy for the next 100 years. The irrigation districts must see to it that all farms continue to produce so that the total repayment costs can be met. This leads to tremendous political pressures for more and more governmental subsidies and agricultural purchases of surpluses.

This increased agricultural production depresses prices for every farmer in the United States. Instead of alleviating our agricultural ills, our problem becomes increasingly acute for both the farmers and out taxpayers.

ELECTRICITY RATES

The rate of 6 mills per kilowatt-hour is an exceedingly high rate for electricity. It compares with a 2.41-mill rate for power sold by the Bonneville Power Administration.

This artificial high cost of power constitutes a penalization of the consumers in the four upper Colorado Basin States. It will foreclose the industrialization of this area and condemn the people of Colorado, Utah, Wyoming, and New Mexico to agricultural serfdom for the next 100 years.

COLLOSSAL WASTE OF WATER RESOURCE

Water is one of the precious resources of the Western States. The use of water for irrigation is the most inefficient use that water can be put to.

For example, 1,000 gallons of water will produce 10 cents in value when used for irrigation. For industrial uses the 1,000 gallons of water will produce \$5 in value.

This project would waste precious water for a noneconomic use to produce agricultural surpluses.

THE SOCIOLOGICAL NAVAJO PROJECT

Both the House and Senate versions of S. 500 provide for the construction of a dam and reservoir as a storage unit for the Navajo project.

The cost of the dam is \$36,592,000. It has no powerplant and can only be used for the storage of irrigation water. This authorization commits the United States to a further authorization to complete the Navajo irrigation project. The total cost of this project is estimated to be \$212,037,000.

This project is not proposed as a sound reclamation project. It is submitted as a "relief project" to resettle 1,100 Navajo Indian families upon irrigated lands. It is "planned" to have these families raise fruit and other cultivated crops.

The present income of the Navajo Indian is \$150 per year. The "planners" have not specified who will supply the additional \$10,000 to \$15,000 needed for agricultural machinery. Presumably it will be the United States taxpayer.

A summary of the financial aspects of the Navajo project follows:

Total cost of Navajo project.....	\$212, 037, 300
Navajo families to be resettled.....	1, 100
Investment for 1 Navajo family.....	\$192, 700
Acres to be irrigated.....	137, 250
Cost of irrigation for 1 acre.....	\$1, 540

This project has not been studied or approved by the Bureau of Reclamation. The investigation, findings, and recommendations are made by the Bureau of Indian Affairs. It is specifically stated to be a social project to bring relief to low-income Navajo Indians.

This project would serve to keep the Bureau of Indian Affairs in business for another 100 years. Instead of terminating supervision and guardianship over Indians, this project would tend to perpetuate our supervision over Indians.

It is contrary to the stated policy of Congress to end supervision over Indians as soon as practicable.

CONCLUSION

The upper Colorado reclamation project is an economic folly, a financial bankruptcy, and a sociological tragedy. This bill should be recommitted for the good of everyone concerned.

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