LARGEST RECLAMATION DEVELOPMENT UNDER WAY

The Story of the Colorado River Storage Project

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PRESIDENT EISENHOWER officially initiated construction on the Colorado River Storage Project and Participating Projects on October 15, 1956, by pressing a golden telegraph key at his White House office to give the signal for explosions at the Glen Canyon and Flaming Gorge dam sites. A construction contract had been awarded on October 1 for drilling the right diversion tunnel at the Glen Canyon dam site, and the explosion signaled by Ike ripped loose rock from the canyon wall at and above the outlet portal as the first step in the tunnel construction. At the Flaming Gorge dam site, the explosion stripped rock from high on the left abutment.

Prominent officials from the States and communities of the Upper Colorado River Basin and representatives of the Bureau of Reclamation were present at both dam sites to receive the President’s signal and to view the historic explosions.

Thus, October 15, 1956, is the construction birthday of the Upper Colorado River development program which had been authorized by the Congress and signed into law by President Eisenhower on April 11, 1956, as Public Law 485, 84th Congress.

The Colorado River Storage Project and Participating Projects, as the authorized basinwide development is called, is the largest single authorization in the history of Reclamation. This authorization provides for the initial phases of the ultimate development plan for the Upper Colorado River Basin.

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High on Canyon rim of Glen Canyon Dam site Senator Arthur V. Watkins (center) of Utah, speaks to President Eisenhower via a special telephone-public address system hookup at the ceremony. L. to R.: L. F. Wylie, Project Construction Engineer, Glen Canyon Dam; Senator Watkins; E. O. Larson, Regional Director, Region 4.

Four units for storage and power are authorized under the Colorado River Storage Project. They are the Glen Canyon Unit, on the main stem of the Colorado River in northern Arizona at a point about 15 miles upstream from Lee Ferry on the boundary between the upper and lower Colorado River basins; Flaming Gorge Unit on the Green River in northeastern Utah; the Curecanti Unit of 3 or 4 dams and powerplants on the Gunnison River in Western Colorado; and the Navajo Unit on the San Juan River in Northern New Mexico. The construction of 11 irrigation and multiple-purpose projects participating in the upper basin plan is also authorized. Five of these participating projects (Silt, Paonia, Smith Fork, Florida, and Pine River Extension) are in Colorado; three are in Wyoming (LaBarge, Seedskadee, and Lyman); two are in Utah (Central Utah and Emery County); and one (Hammond Project) is in New Mexico. The Eden Project now nearing completion in Wyoming will also be assisted by the power revenues from the Colorado River Storage Project.

The initially authorized group of storage units and participating projects will result in construction of 17 dams which will provide nearly 36 million acre-feet of reservoir capacity; over 1,200,000 kilowatts of hydroelectric installed capacity; 48,800 acre-feet annually of water for municipal and industrial uses; a full water supply for 132,000 acres of new land; and a supplemental water supply for 240,000 acres of land now suffering from shortage of irrigation water.

The combined water surfaces of the reservoirs will approximate 400 square miles. Tremendous opportunities for recreational activities will be offered, such as swimming, boating, fishing, picnicking, camping, and enjoyment of scenic areas heretofore inaccessible to the general public.

The 17 dams, if placed one on top of the other, would rise to a height of ¾ mile; end-to-end, they would extend more than 6 miles. About 60 million cubic yards of earth materials and about 6 million yards of concrete will go into these dams.

The haulage of cement and pozzolanas for the 5,000,000 cubic yards of concrete to be placed in Glen Canyon Dam alone would require the delivery of 20-ton truck loads at 45-minute intervals around the clock for 4 years.

Construction of the 4 authorized storage units and 11 participating projects will require an estimated 185,000 man-years of labor. This labor requirement would be split into two parts—1/2 at the site of construction and 1/2 in the off-site production of necessary materials and in meeting transportation and administrative needs. The basic materials, such as iron, steel, copper, aluminum, cement, and lumber, must come from far-flung sources. From their beginning as raw materials to final finished products delivered to the project sites, thousands of man-years of labor are required in mines, forests, transportation, processing, fabrication, distribution, and administration. Thus, every state in the Nation will be beneficially affected.

Glen Canyon Dam is the largest of the storage
units. It will rise 700 feet above bedrock and create a reservoir of 28 million acre-feet extending 186 miles up the Colorado River. The crest length of the dam will be 1,400 feet, and the volume of concrete will total about 5 million cubic yards. The 8 generating units to be installed in the powerhouse will have a total capacity of 900,000 kilowatts. The total construction cost, including an apportioned share of the authorized transmission system, is estimated to be $421 million.

The right diversion tunnel at the Glen Canyon dam site is now being excavated. Access roads to the dam site are now under construction. An alternate route for U.S. Highway 89 will cross Glen Canyon on the highest steel arch bridge in the United States at a point 870 feet downstream from Glen Canyon Dam. Bids for construction of this bridge were opened on December 18. About 2 years will be required to complete construction of this magnificent steel bridge.

The prime contract for Glen Canyon Dam will be awarded in the spring of 1957, according to present schedules. The prime contract will include construction of the dam, the powerhouse, the left diversion tunnel, the lining of both diversion tunnels, and the two cofferdams needed to divert the Colorado River during construction of the dam.

Flaming Gorge Dam will rise about 500 feet above bedrock and have a crest length of 1,200 feet. About 1 million cubic yards of concrete will be placed in constructing this high dam. The reservoir behind Flaming Gorge Dam will extend 94 miles upstream, nearly to the town of Green River, Wyo. About 4,000,000 acre-feet of water will be impounded. The estimated cost is $57 million.

A temporary access road is now being built from Linwood, Utah, to the Flaming Gorge dam site. Drilling of the single diversion tunnel at the Flaming Gorge dam site will be under contract by early summer. Present plans call for issuance of the invitation for bids on the prime contract in October 1957.

As specified in the authorizing legislation, construction of the Curecanti Storage Unit must be delayed pending completion of a feasibility report. Economic consideration of the Curecanti Unit involves comparative designs and estimates of several combinations of dams, powerplants, and reservoirs on the reach of the Gunnison River near Gunnison, Colo.

Field investigations are underway at the Navajo dam site. Construction of access roads and other facilities are planned for spring of 1957. Navajo Dam will be used primarily in connection with New Mexico's contemplated new uses of San Juan
River water under the proposed Navajo Irrigation Project, and the proposed San Juan-Chama Project.

Construction on the participating projects may commence in fiscal year 1958. Work could be started on the Seedskadee Project in Wyoming, the Paonia Project in Colorado, and the Vernal Unit of the Central Utah Project. Under an orderly program of development, 10 or more years may be required to get all 11 participating projects underway, and it may require up to 25 years to complete the more complicated phases of the large Seedskadee and Central Utah Projects.

The Congress, in authorizing the initiation of the Upper Colorado River development, declared that it was not its intention “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 their apportioned water. On the contrary, the Act directs the Secretary of the Interior to continue the investigations of additional units of the Colorado River Storage Project and the participating projects and to report the results of these investigations to the States, President, and the Congress. The Public Law 485 specifically lists 24 such projects for priority consideration.

The 4-storage units and the 11 participating projects authorized for construction constitute the nucleus of an overall basin plan to which subsequent additions will be authorized as the needs arise in the development and use of Colorado River water allotted to the Upper Basin by the Colorado River Compact of 1922. At the present time, the Upper Basin is consuming about 2½ million acre-feet of its annual allotment of 7½ million acre-feet. Completion of the features initially authorized by Public Law 485 will increase consumptive water use in the Upper Basin by about 1 million acre-feet, raising the total use to 3½ million acre-feet.

Except for very minor amounts allocated to recreation and flood control (less than 1 percent of the total) the entire construction cost of the Upper Colorado River development will be repaid by the water and power users of the Upper Basin during a period of 50 years after completion of construction of each unit or project. In addition, interest will be paid on the costs allocated to power and municipal water, which constitute about two-thirds of the estimated total construction costs.

Over a period of 50 years (except for the Paonia and Eden Projects whose repayment periods were set by previous law), the irrigators will repay...