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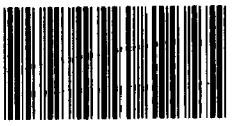
UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

May 19, 1982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COMMUNITY AND ECONOMIC
DEVELOPMENT DIVISION

B-207402

The Honorable George Miller
House of Representatives

Subject: Water Diverted from Lake Tahoe Has Been Within Authorized Levels (GAO/CED-82-85)

Dear Mr. Miller:

In your letter of January 29, 1982, and our subsequent discussions with your office, you expressed concern about the water diverted (released) from Lake Tahoe and the resulting reduction in the level of the lake. You asked us for information on the operation of the lake and, specifically, how release rates were established and whether these rates have been met or exceeded during the last 10 years.

Essentially, releases from the Department of the Interior's Bureau of Reclamation-controlled Lake Tahoe Dam are regulated by court decree and monitored by a court-appointed water master. Over the last 10 years, releases have not resulted in improper reductions in the level of the lake.

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of this review were to provide information on the management of Lake Tahoe water releases and to determine how release rates are established and if such releases have met or exceeded the established rates during the last 10 years.

We made our review at the offices of the Federal Water Master in Reno, Nevada, and the Bureau of Reclamation's Mid-Pacific Region in Sacramento, California, and its district office in Carson City, Nevada. We interviewed the Federal Water Master and Bureau officials and reviewed records maintained at those locations. We also reviewed the various court decrees that regulate releases from Lake Tahoe and the contract between the Bureau and the Truckee-Carson Irrigation District that provides for construction cost repayment of the Lake Tahoe Dam and other features of the Newlands Project. We also reviewed and compared Truckee River computer flow data from Lake Tahoe and the lake's surface elevation data maintained by computer in the Department of the Interior's Geological Survey.

This review was performed in accordance with our current "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

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BACKGROUND

Lake Tahoe, situated high in the Sierra Nevada mountains at 6,223 feet above sea level, is one of the largest high altitude lakes in the world. It contains about 122 million acre-feet of water, covering approximately 122,000 acres to an average depth of 1,000 feet. The lake is located south and west of Reno, Nevada, and is bisected by the California/Nevada State line.

The low point of the lake's shore is at Tahoe City, California, where the Truckee River carries the outflow from the lake. In California, the Truckee River provides water for power generation and domestic water supplies. In Nevada, the water is used for municipal purposes in the cities of Reno and Sparks and for irrigation in the lower Truckee and Carson River basins. The terminus of the Truckee River is Pyramid Lake in the Nevada desert, about 100 miles downstream from Tahoe City.

Around 1870 an enterprising engineer built a dam at the lake's outlet and was granted the right to appropriate 500 cubic feet per second (cfs), or about 320 million gallons, a day. He had planned to supply San Francisco with water from the lake by constructing a tunnel through the Sierra Nevada. This ambitious plan proved too costly and was abandoned. Since then, control of the lake's outlet has changed possession several times.

In 1908 the Truckee River General Electric Company purchased the Tahoe Dam and outlet works as well as all the powerplants along the Truckee River. The terms of the purchase included an agreement by the power company to maintain an average flow in the river at Floriston, California, about 20 miles downstream from the dam, of 500 cfs from March 1 to September 30, and 400 cfs for the other months. The Floriston flow rates assured, in 1908, a sufficient supply of water for power generation in California and irrigation in Nevada.

The Bureau initiated the Newlands Project 1/ in 1903 to supply irrigation water for a large area of land near Fallon, Nevada. It planned to construct a new dam at Lake Tahoe to provide greater control over the flow in the Truckee River. In the latter part of 1908, the Bureau sought to gain control of the Tahoe outlet from the Truckee River General Electric Company. When negotiations proved unsuccessful, the United States in 1909 went to court in an attempt to gain control through condemnation proceedings. Finally, in 1915, a Federal court decreed that the United States had the

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1/The project consists of Tahoe Dam on the Truckee River, Lahontan Dam on the Carson River, two diversion dams, and about 400 miles of canals.

right to control discharges from the lake. The decree stipulated, among other things, that the United States must continue to maintain the Floriston flow rates and not withdraw water from below the 6,223-foot elevation level (the lake's natural rim).

In 1926 the Bureau of Reclamation entered into a contract with the Truckee-Carson Irrigation District granting the district the right to operate the Newlands Project, including operation and maintenance of the Lake Tahoe Dam and outlet works. The district was granted the right to divert water from the Truckee River to irrigate lands in the Newlands Project. In return, the district agreed to repay the remaining construction charges relating to the Newlands Project facilities as well as pay for operating and maintaining the project.

Although the contract with the Truckee-Carson Irrigation District authorized the district to divert Truckee River water for irrigation, the water required for this diversion does not necessarily come from the lake. Releases from the lake are made primarily for the purpose of supplementing flows in the Truckee River to maintain the Floriston rates. Lake Tahoe's contribution to irrigation water in the Newlands Project is limited to the amount released for maintenance of the Floriston flow rates.

Lake Tahoe contributes heavily to the Floriston rates during the period July 15 through December 31 and to a lesser degree during the period January through March. During the period April through June and sometimes July, Lake Tahoe normally does not contribute to the Floriston rate because uncontrolled flows in the Truckee River due to spring snow melt are usually more than sufficient. It is during this period that the irrigation district diverts most of its Truckee River water entitlement.

Although Lake Tahoe contains an estimated 122 million acre-feet of water, very little of it is controlled by the Tahoe Dam. The dam is a low-level structure which adds about 6 feet of storage to the natural level of the lake (between elevation 6,233 and 6,229.1 feet above sea level). The capacity of this 6-foot reservoir is only about 732,000 acre-feet. The dam's outlets are designed so that water contained in the lake below its natural rim cannot flow into the Truckee River.

RELEASES FROM LAKE TAHOE ARE REGULATED BY COURT DECREE

Water releases from Lake Tahoe are controlled by court decree. Basically, the United States only has the right to release water

stored in the 6.1-foot reservoir of the lake. The rate of release is the amount of water necessary to maintain decreed flow requirements measured at Floriston, California. 1/

In 1935 the United States, Truckee-Carson Irrigation District, Washoe County Water Conservation District, Sierra Pacific Power Company, and certain individual water users entered into an agreement known as the Truckee River Agreement. The primary purpose of the agreement was to conserve the waters of Lake Tahoe, the Truckee River, and its tributaries and to raise and stabilize the mean elevation of the lake's surface.

To accomplish its objective, the agreement provided for additional storage of flood water on a tributary of the Truckee River downstream from the lake (upstream from Floriston) and modified the Floriston rates stipulated in the 1915 decree. The agreement allows the Floriston rates to be decreased or increased, depending on the elevation of the lake surface. The rates can be decreased to 350 cfs each day from November 1 through March 31, whenever the elevation of the lake is between 6,226 and 6,225.25 feet above sea level, and to 300 cfs during the same period whenever the elevation is less than 6,225.25 feet.

The agreement also provided that whenever the elevation of the lake reaches 6,228 feet and snow surveys and other estimates of runoff into the lake indicate the lake level will exceed 6,229.1 feet above sea level, the rates can be increased to the level necessary to prevent high water damage to property surrounding the lake. To exceed the new Floriston rates, however, the United States and the Sierra Pacific Power Company (formerly the Truckee River General Electric Company) must first petition the court for a temporary order permitting such additional releases of water from the lake according to the agreement.

In 1944 the United States District Court in Nevada incorporated the 1935 Truckee River Agreement in its Truckee River Decree. The Truckee River Decree was the final decree in a suit brought by the United States against the Orr Water Ditch Company in 1913, seeking adjudication of the water rights of all water users on the Truckee River in Nevada. The decree allowed the United States to divert 1,500 cfs of water from the Truckee River for irrigation of lands in the Newlands Project.

1/The Floriston rate is now measured at Farad, California, about a mile downstream from Floriston. Changes in the river bed necessitated the move of the gauging station.

LEGAL RESPONSIBILITY FOR ENSURING THAT THE DECREE IS ENFORCED RESTS WITH A WATER MASTER

To carry out and enforce the provisions of the 1944 decree, the court appointed a water master. The water master is empowered to cut off the water to any user who disregards his directions made in accordance with and for the enforcement of the decree. The compensation and expenses of the water master are borne by the parties whose rights were adjudicated by the decree--one-third by the United States, one-third by the Sierra Pacific Power Company, and one-third by the remaining persons or corporations.

The water master's responsibility for ensuring the protection of the lake and its shoreline is limited to enforcement of the 1944 Truckee River Decree. As discussed previously, the Truckee River Decree limits withdrawals from the lake to water stored between elevations of 6,223.0 and 6,229.1 feet above sea level, or that water controlled by the Tahoe Dam. The decree protects the shoreline in that it prevents flooding above the 6,229.1-foot level and prevents the lake from being drawn down below its natural level.

According to the water master, his primary responsibility under the Truckee River Decree is to ensure that the flows in the Truckee River are sufficient to meet the Floriston rates. He said releases from Lake Tahoe are made only when the flows in the river below the dam are not sufficient in and of themselves to meet the Floriston rates. When releases are made, they are the minimum required to supplement the existing flows in the river to meet the Floriston rates. According to the water master, by regulating releases in this manner he ensures that the lake is maintained at its highest level.

RELEASES FROM THE LAKE HAVE BEEN WITHIN DECREED LEVELS

Records of the U.S. Geological Survey show that during the past 10 years, releases from Lake Tahoe have not resulted in improper reductions in the lake's level. Only water stored in the 6.1-foot reservoir of the lake has been released. Water contained in the lake below its natural rim has not been withdrawn for downstream uses since 1934.

According to the water master the lake has, on occasion, fallen about a foot below its natural rim. During the most recent drought in 1977, evaporation caused the level of the lake to fall about 9 inches below its natural elevation. This situation also occurred in 1961-62 and during the drought of the 1930's.

However, the Truckee River Decree does contain a provision which allows, under certain conditions, water to be pumped from the lake when it is below its natural elevation. If the water is needed for irrigation or power generation purposes, the Secretary of the Interior is required to declare such use to be a necessity. If the water is for sanitary or domestic purposes, the Departments of Health in the States of California and Nevada must file, with the Attorneys General of the two States, certificates showing that necessity for such use exists. According to the water master, water was last pumped from the lake in 1934.

Although the lake level fell 9 inches below its natural rim during the 1977 drought, no pumping was requested. According to the water master, the lake has just recovered from the effects of the 1977 drought. Snow surveys and other estimates of runoff into the lake indicate that it will more than recover in 1982. In fact, the Federal District Court, Eastern District of California, on April 13, 1982, authorized the release of water in excess of the Floriston rates to preclude possible flooding of the shoreline above the 6,229.1-foot level. If the Floriston rates were not exceeded, it was projected the lake would crest at 6,229.68 feet, well above the maximum authorized.

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At your request, we did not obtain Department of the Interior comments on this report. However, the report was discussed with Bureau officials and the water master and their comments were included where appropriate.

As arranged with your office, we are sending copies of this report to the Secretary of the Interior and the Commissioner of Reclamation. Copies will also be available to other interested parties upon request.

Sincerely yours,

Henry Eschwege

Henry Eschwege
Director