

Decision No. 60897

**ORIGINAL**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's )  
own motion into the safety, opera- )  
tion and maintenance of storage ) Case No. 6627  
reservoir of Boulder Creek system )  
of CITIZENS UTILITIES COMPANY. )

Hector Anninos and David F. LaHue for the  
Commission;  
Orrick, Dahlquist, Herrington & Sutcliffe, by  
Warren A. Palmer and Ruffo & Chadwick,  
by Robert S. Chadwick for Citizens Utilities  
Company of California, respondent;  
San Lorenzo Valley Chamber of Commerce and Ben  
Lomond Recreation District, by Alice Earl  
Wilder; Santa Cruz County Health Department,  
by Clyde V. Larsen; Rainbow Trout Park, by  
Peter J. Horvath and Patrick J. Creegan,  
interested parties.

INTERIM OPINION AND ORDER

This proceeding is an investigation, on the Commission's  
own motion, into the safety, operation and maintenance of "Big  
Concrete Reservoir" of Citizens Utilities Company of California on  
its Boulder Creek system. The purposes of said investigation are:

1. To determine the structural safety of the  
storage reservoir and to require corrective  
measures if such appear to be warranted.
2. To investigate the erosion and silt problem  
resulting from the reservoir and determine  
what corrective measures may and should be  
taken to prevent same.
3. To determine whether any other order or  
orders should be entered, in the interest  
of public health and safety, in the lawful  
exercise of the Commission's jurisdiction.

Public hearing in the matter was held before Commissioner  
C. Lyn Fox and Examiner F. Everett Emerson on August 31, 1960. The  
matter is presently adjourned to a date to be set.

In January 1959 construction was begun on a 3½-5 million-gallon reservoir, about one mile from the community of Boulder Creek, on or near the ridge of a hill, between Hesse Brook and Foreman Creek, for the purpose of seasonal water storage for respondent's Ben Lomond-Boulder Creek water system. Although water for the reservoir comes from Foreman Creek, the reservoir does not lie on any natural water course.

The reservoir was constructed through the combination of excavation and fill. It is 38 feet deep, 19 feet of which is in the excavated portion and thus capable of storing water to such depth above undisturbed soil. The upper 19 feet of the reservoir is contained within the fill material obtained at the site. There are two fill sections, the major one being a wedge-shaped fill, around the eastern end of the reservoir, which is about 40 feet in depth at its center. The smaller fill is located in the northeastern quadrant. Together, these two fills constitute about 3/4 of the perimeter. The bottom of the reservoir is 100 by 160 feet; the top, measured from lip to lip, is 175 by 260 feet. It is generally oval in shape. The embankment around the perimeter varies in width from 10 to 15 feet. The inside of the reservoir has been lined with a thin layer of concrete applied by the process known as Guniting.

During the 24-hour period, September 18-19, 1959, at a time when the formation of the reservoir was generally completed, the area experienced a 9-inch rainfall. The rain, falling on the freshly laid fill, caused the filled bank to erode. The eroded material was washed down hill and much of it found its way into Hesse Brook, a stream which theretofore had been noted for its clarity and freedom from silt and on which was located a fish hatchery and trout farm resort.

In addition to surface erosion of both cut and fill banks, two slides also occurred. Investigation of the large slide at the toe of the eastern slope of the major fill has revealed that very weak material underlies the slide. The fill was placed over top soil, leaves, tree limbs and considerable amounts of organic material. Investigation of the smaller slide, on the southeasterly portion of the fill, disclosed that a portion of the fill had been built upon a brush pile.

Some voids have been found beneath the Gunite lines of the reservoir. The liner, being thin (test borings revealing variable thickness of 1 to 3 inches), may crack and leak as the result of differential deformation of the soil in the course of settling of the fill sections. Leakage and subsurface seepage have been apparent.

Respondent has been taking and is continuing to take corrective action with respect to the apparent inadequacy of this reservoir. Neither its work nor the record in this proceeding is complete. In view of the soil instability, structural deficiency and surface erosion which has thus far been disclosed and having in mind that the rainy winter season is about to descend upon the area, the Commission finds that, in the interests of protecting the public from possible destruction of or damage to life and property, it is necessary to place certain restrictions upon respondent and its use and operation of the reservoir until such time as the Commission may complete the investigation undertaken herein. Accordingly,

IT IS ORDERED as follows:

1. Respondent shall so control the operation and use of its Big Concrete Reservoir, near Boulder Creek, that at no time, until further order of this Commission, shall said reservoir store or contain water to a depth greater than fifteen (15) feet.

2. Respondent shall immediately take such steps, at or near the reservoir site, as will insure that surface erosion of soil from any portion of either cut or fill banks will not enter Hesse Brook.

The effective date of this order is the date hereof.

Dated at San Francisco, California, this 18<sup>th</sup>  
day of OCTOBER, 1960.

[Signature]  
President  
[Signature]  
[Signature]  
[Signature]  
Commissioners  
Theodore Jensen  
Commissioners