

FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections
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January 14, 2020

In reply refer to:
Project No. 5737
NATDAM No. CA00294

VIA USPS First-Class Mail

Mr. Christopher Hakes
Deputy Operating Officer
Dam Safety and Capital Delivery Division
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686

Re: Plan for Implementation of Interim Risk Reduction Measures for the Anderson Dam Project

Dear Mr. Hakes:

This letter is in response to your December 31, 2019, submittal regarding the Anderson Dam Seismic Retrofit Project. Your letter responded to our December 17, 2019 letter requesting a plan for the implementation of interim risk reduction measures involving lowering of the reservoir to decrease the risk of a seismic-induced failure of Anderson Dam. Your letter recommends continuing with your current operations for the project and proposes no additional interim risk reduction measures. Based on the potential risk to the downstream public, we do not concur with this recommendation.

The most significant concern for Anderson Dam is an earthquake occurring with elevated reservoir levels, especially levels above the current seismic stability restriction level of Elevation 592 ft. We acknowledge that during significant storms, such as the 2017 storms, the reservoir may fill beyond the existing restriction level due to outlet capacity at the project; however, this does not negate the fact that a lower reservoir level will provide additional storage during storm events. Your analysis indicates that a reservoir elevation at 0% storage volume (Elevation 488 ft.), would have provided 18 and

21 days of additional time below the restricted elevation for the 2017 and 1997 storms, respectively. It also would have shortened the duration above the restriction by 19 and 21 days, respectively. We do not find this insignificant. Lowering the reservoir further must be considered a part of a responsible overall risk reduction strategy.

With limited outlet capacity at the project, the only way to reduce the risk of failure from an earthquake is to ensure the reservoir is as low as possible. A further reduction in the reservoir level would:

1. Provide additional storage for storm events, making it less likely water levels would exceed Elevation 592 ft.;
2. Allow additional response time to inspect and mitigate any damage from an earthquake;
3. Reduce impacts to the downstream public from any catastrophic dam failure due to less storage behind the dam and/or providing additional warning and evacuation time in the event of a dam safety incident; and
4. Reduce the potential for an internal erosion failure from embankment cracking due to lower gradients and less potential for cracking.

We believe these considerations greatly outweigh other factors you have stated for not implementing additional interim risk reduction measures and keeping the reservoir at its current restricted elevation. While there is no way to eliminate all risk, the fact that there are densely populated areas downstream of your dam, including within a very short distance from the toe of the dam, and the frequency of the potential damaging loading conditions dictates the need to take all measures available to reduce the risk as much as possible until the project is fully mitigated.

To help us better understand your December 31, 2019 response, please provide us with the following additional information:

- A) Further explain in detail the impacts that would occur if the 20,000 acre-ft of emergency water supply at Anderson Reservoir was not available and provide justification for why you would not be able to supplement this from other sources. You should provide an impact assessment for various volumes, such as retaining 5,000, 10,000, and 15,000 acre-ft, or other volumes which could be considered.
- B) Your October 31, 2019 submittal indicated that the current outlet works structure and spillway, would be damaged and likely become unusable during a seismic event with a return period of 100 years. Your December 31, 2019 response letter posited two, new, significant claims:
 - “under current storage restrictions the reservoir itself provides a

buttressing effect, and therefore helps reduce the potential for displacements of the intake structure during an earthquake” and

- “further lowering of the reservoir level is unlikely to have a significant beneficial or harmful impact on the seismic performance of the dam embankment, outlet structure or the spillway chute walls.”

According to the October 2019 study, the analysis of the intake structure did not consider the reduction in effective stresses from Elevation 592 ft., and the corresponding reduction in yield coefficients. Therefore, any conclusion that the intake structure is at greater risk from a seismic event at Elevation 488 ft. cannot be made based on the information you have provided. Provide additional information to support your assertion.

Your October 31, 2019 submittal clearly shows a significant beneficial effect on the vertical and horizontal displacements of the dam embankment by lowering the reservoir from Elevation 592 to 550 ft. Provide a justification for your assessment that further lowering of the reservoir would not have a significant beneficial effect on the seismic performance of the dam embankment.

Within 14 days from the date of this letter, please provide a response to our comments. Once again, you should propose additional reservoir restrictions to reduce the risk to the downstream public. If you have any questions, please contact me at (202) 502-6314 or Mr. Frank L. Blackett at (415) 369-3318.

Sincerely,

David E. Capka, P.E.
Director
Division of Dam Safety and
Inspections

cc:

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