FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections – San Francisco Regional Office
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September 21, 2021

In reply refer to:
Project No. 2100-CA

Ms. Gwen Knittweis, Chief
Hydropower License Planning and Compliance Office
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Re: Oroville Dam Flood Control Outlet Gated Monolith Interim Stability Analysis and Responses to Comments

Dear Ms. Knittweis:

This is in response to several of your letters that submitted responses to comments and interim studies regarding the stability of the gated monoliths of the Flood Control Outlet (FCO) Structure of Oroville Dam, which is part of the Feather River Project, FERC No. 2100. The correspondence involves, in part, Recommendation R-5 from the 9th Part 12D Report for Oroville Dam. The specific submittals were as follows:

- March 26, 2018 – Response to Commission Comments January 25, 2018
- May 2, 2018 – Flood Loading Frequency Loading (Gates Closed)
- June 28, 2018 – Seismic and Flood Loading Conditions Update
- July 10, 2018 – Bulkhead Bracing Analysis and Preliminary Design
- September 17, 2018 – Interim Analysis Update for Seismic and Flood Loading
- January 24, 2019 – Monolith 25 and 26 Construction Joint Results

We acknowledge receipt of the March 16, 2021 submittal of a non-linear analysis and will respond to that submittal under separate cover. We have completed our review of the subject submittals and have the following comments:

1. While we understand that DWR has performed a non-linear analysis of the structure, the analyses submitted to date have indicated poor performance of the gated monoliths under extreme seismic and some flood loading conditions. DWR should evaluate potential interim risk reduction measures (IRRMs) for the

structure and provide a plan and schedule for implementing appropriate risk reduction measures. We recognize that some IRRMs may already be discussed in other documents, or even in these documents, but without specific IRRM language. However, it is important that risk reduction measures be clearly documented and implemented in context of the interim analyses results for the gated FCO monoliths.

2. The analyses to date have indicated that retrofits to the gated FCO monoliths will be required. DWR should provide a general plan and schedule for the completion of these retrofits. We acknowledge that the exact scope of the retrofits is not yet known, and that aspects of this topic are addressed in the Comprehensive Needs Assessment (CNA). However, in both cases, it is important that there is a clear correspondence record that directly connects these specific studies with a plan and schedule.

3. DWR should provide the current status for fabrication of the pier bulkhead bracing. Once fabricated, as-builts should be provided for our review and a Standard Operating Procedure for installation of the bracing should be developed.

4. The seismic time history report should include the scale factors used to adjust median time histories to the 84th percentile time histories, to be used for analysis. Additionally, the report should include items listed in the FERC guideline Appendix F.4, Ch. 13 Evaluation of Earthquake Ground Motions, **https://www.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/eng-guidelines.**

Within 60 days from the date of this letter, submit responses to our comments or a plan and schedule for doing so. We appreciate your cooperation in this aspect of the Commission's dam safety program. If you have any questions, please contact Mr. Wes Cooley at (415) 369-3340.

Sincerely,

Frank L. Blackett

Frank L. Blackett, P.E.
Regional Engineer

cc:
Ms. Sharon Tapia, Chief
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