FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections - San Francisco Regional Office
901 Market Street, Suite 350, San Francisco, California 94103
(415) 369-3300 Office (415) 369-3322 Facsimile

March 31, 2005

In reply, refer to:
Project No. 2079-CA
NATDAM: CA00856

Stephen J. Jones, Power System Manager
Placer County Water Agency
24625 Harrison St
P.O. Box 667
Foresthill, CA 95631

RE: Review of June 2003 L.L. Anderson PMF Study acknowledging the COE plan to modify the spillway.

Dear Mr. Jones:

By letter dated March 25, 2005, we sent to you a letter on the above topic. Due to an oversight, we did not include a due date to respond to our concerns. Please discard the earlier letter and replace it with this letter. We apologize if this causes any inconvenience.

By letter dated June 25, 2003 PCWA submitted the June 2003 L.L. Anderson (French Meadows) PMF Study prepared by Mead & Hunt. During the process of our review, we received your February 2, 2004 letter informing FERC the COE received congressional approval and funding to modify L.L. Anderson's spillway to pass the more conservative PMF estimate calculated in the COE's 2001 PMF Study. We have completed our review of the 2003 PMF Study and the COE's 2001 PMF Study. Prior to our acceptance of the 2003 PMF Study, the following comments must be addressed:

1. Your consultant utilized the Degree-Day method to determine the snowmelt contribution to the PMF. The use of the Energy-Budget method is recommended for spring snowmelt floods. The Bureau of Reclamation developed a Snow-Water Budget method that accounts for the settling of snow due to liquid precipitation and tracks snow depth and snow densities. This method limits the moisture loss until the yield density is

achieved. Since this method is a variation of the Energy-Budget method, the input to satisfy the Energy-Budget equations are the same and the only additional input variable are the initial snow depth and density. Your consultant should utilize this method to evaluate the snow melt contribution to the PMF.

2. Because the COE precipitation peak is 14 hours later than the consultant's precipitation peak with a longer associated time of concentration, this factor likely caused the COE model to predict a higher PMF. A temporal rainfall distribution commonly used in PMF studies places the maximum 6-hour rainfall at the 2/3 point of the storm and arranges the remaining increments of precipitation in descending order about this point. For example, the Corps of Engineers (COE) in their 2001 PMF analysis set the maximum 6-hour increment of rainfall at hour 42 of the 72-hour sequence. This arrangement tends to produce a maximum runoff condition for the basin.

Hydrometerological Report (HMR) Nos. 58 and 59 did not provide specific guidance on areal distributions. Rather, the HMR's suggested a method that alternatively surrounds the maximum 6-hour value so that this maximum value is alternatively surrounded by the four, next largest values. The 24-hour largest 6-hour values may be positioned anywhere in the 72-hour storm period. The HMR recommends that the hydrologists experiment with different temporal sequences to determine the critical sequence.

Your consultant's temporal rainfall distribution, found in Exhibit 12, placed the maximum 6-hour increment of rainfall at Hour 28 of the 72-hour sequence. The remaining rainfall increments were placed around the maximum in an alternating pattern. Your consultant should justify the selected temporal distribution. The justification may include any sensitivity analyses performed and the criteria used to select the distribution.

3. The calculated spillway outflow values and weir coefficients should be revised to include downstream submergence effects in the apron. The HEC-RAS file should be modified to use the ogee weir routine, additional upstream cross sections added, and the model run in the mixed flow regime with the reservoir water surface used as the antecedent reservoir elevation.

4. After recalculating the spillway outflow rating curve, a reservoir inflow hydrograph should be calculated for the 1996-1997 event by using the reverse modified Puls method. The HEC-1 model unit hydrograph should then be calibrated to the 1996-1997 event inflow hydrograph.

5. We agree that additional coordination will require the development of a new schedule for modifying the spillway. Your plan to provide semi-annual progress reports on your coordination with the COE is acceptable.

By April 15, 2005, please provide a plan and schedule to address the above issues. Thank you for your continued cooperation in our dam safety program. If you have any questions, please contact Mr. John Onderdonk at (415) 369-3339.

Sincerely,

TAKESHI YAMASHITA

Takeshi Yamashita, P.E.
Regional Engineer

cc: Mr. Dave Gutierrez, Acting Chief
Division of Safety of Dams
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001