From:	Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>
Sent:	Wednesday, March 27, 2019 9:41 PM
To:	E, Harrison, Katrina
Cc:	Callejo, Russell; Howard Brown
Subject:	Shasta and Upper Sac Modeling Questions

Katrina --
Could we get answers to the following questions? Some may have been covered in meetings with Jacobs/Reclamation, but we wanted to get some written explanation to better clarify our understanding.

Thanks -
Cathy

1. Please clarify whether the modeling (HEC-5Q, presumably) attempted to meet summer temperature thresholds as monthly averages or as daily averages. Additionally, please clarify how Reclamation and the SRTTG intends to operate to meet summer temperature thresholds (as monthly averages, as daily averages, instantaneous minimums, etc.).

2. Please explain how/why the actual frequency of Tier 1 years, Tier 2 years, Tier 3 years and Tier 4 years may differ from what the PA modeling implies (considering CalSim's "perfect foresight"). Please clarify how hydrologic forecasts will be used in implementing the tiers (including what probability of exceedance will be used). Please also clarify how meteorological forecasts will be used in implementing the tiers (including what probability of exceedance will be used).

3. Please indicate whether the forecast of 4.0 for Shasta storage on May 1 will be based on a previous month's forecast. If so, which month, and at what level of confidence (e.g., 90% exceedance)? Is there any "real-time" weather or runoff forecast information from NOAA being considered?

4. Please provide justification for the use of May 1st for the 4.0 Shasta storage prediction level. This seems very early in season for storage prediction, and could have the effect of minimizing the relationship between storage and cold water. June 1 or July 1 are also relevant to evaluate.

5. The current RPA allows for flexible locations of temperature compliance from Clear Creek to Jelly's Ferry. What does the COS temperature modeling output assume about these choices and flexibilities?