



June 24, 2025

Via Electronic Submittal (E-Filing)

Debbie-Anne Reese, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

**RE: Potter Valley Hydroelectric Project, FERC No. 77-CA
2025 Minimum Instream Flow Variance Request Due to Restricted Storage
Supplemental Filing**

Dear Secretary Reese:

This letter presents the results of baseline and proposed temporary flow variance water temperature model (CE-QUAL-W2 hydrodynamic and water quality model [Model]) simulations for Lake Pillsbury, which is part of Pacific Gas and Electric Company's (PG&E) Potter Valley Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. 77.

On February 14, 2025, PG&E submitted a temporary flow request to reduce East Branch Russian River (EBRR) flow requirements to proactively manage reservoir storage in a manner that is protective of Project facilities and minimizes potential impacts to federally listed fish species in the Eel River. PG&E is currently operating the Project under the requirements of the Article 52 until FERC issues an order approving the 2025 temporary flow request.

The Model was used to develop three distinct scenarios. The first scenario describes the baseline simulation forecast for June through October 2025 for Lake Pillsbury under the current Article 52 requirements. The second modeling scenario assumes variance flows of 5 cfs to the EBRR are implemented from July 1 through September 2025, while the third scenario assumes variance flows of 5 cfs to the EBRR are implemented August 1 through September 2025. In both variance scenarios the EBRR flows are increased to 25 cfs for the month of October. As discussed in the February 14, 2025, temporary flow request, continued elevated withdrawals through the summer accelerate the depletion of cooler water in Lake Pillsbury, which is alignment with the results of water temperature modeling.

Of additional concern, water storage in Lake Pillsbury is currently tracking lower than all recent years except Water Year 2021 as shown in Figure 1 below. At the current withdrawal rate, reservoir storage may reach critical levels by early December (Figure 2) which would require emergency action to protect facility safety.

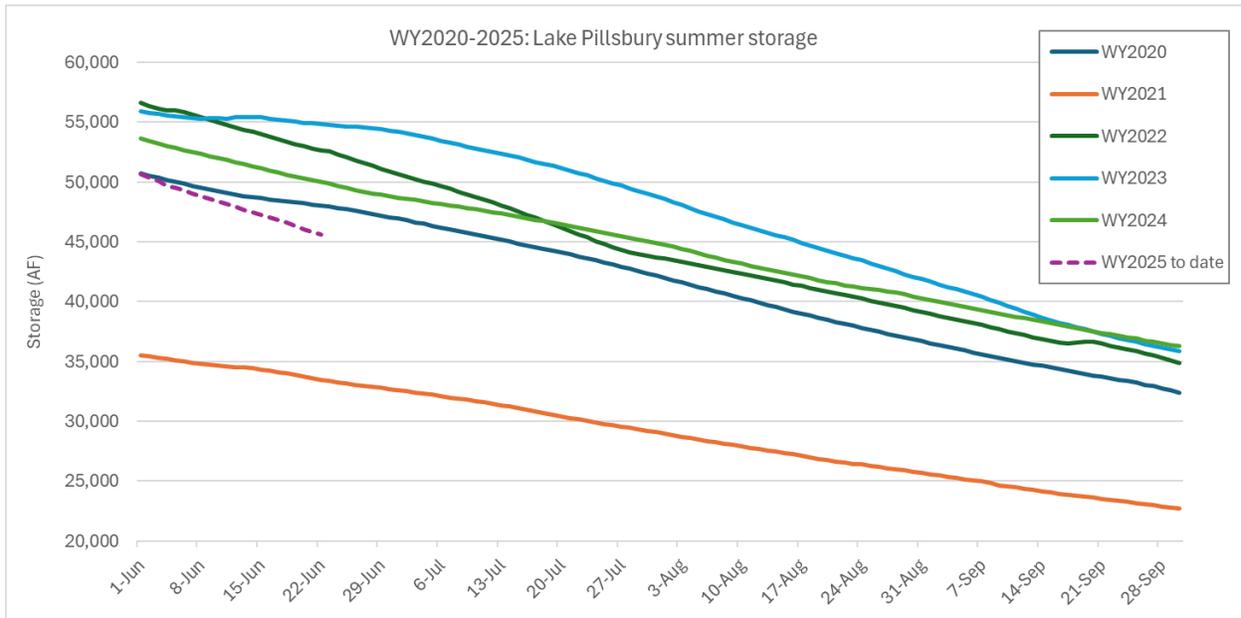


Figure 1. Comparison of current Lake Pillsbury summer storage trend to recent years

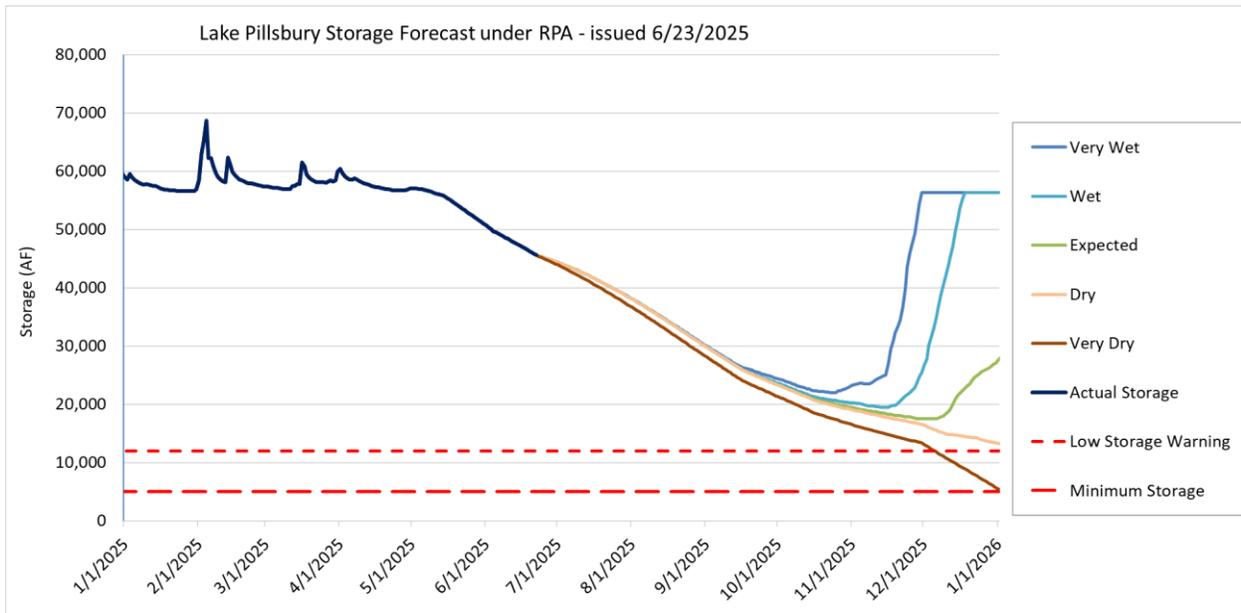


Figure 2. Lake Pillsbury storage forecast under license-required flows for different hydrological scenarios

Enclosed with this letter, please find the technical memorandum describing baseline and proposed variance simulation of June-October 2025 Lake Pillsbury temperature forecast modeling (Enclosure 1).

PG&E submitted a license amendment application to revise the flow requirements to the EBRR until Project decommissioning is completed; however, until that amendment can be

processed, PG&E urges FERC to implement the February 14, 2025, temporary flow amendment request as soon as possible to minimize potential impacts to federally listed fish species in the Eel River and continue to provide a reliable water source to downstream users.

If you have any questions or comments please contact Chadwick McCready, License Coordinator for PG&E at (530) 254-4007.

Sincerely,



Chadwick McCready
Senior License Coordinator, Hydro Compliance

Enclosure:

1. Baseline and Proposed Variance Simulation of June-October 2025 Lake Pillsbury Temperature Forecast Modeling, completed on June 19, 2025

cc: [via email w/enclosure](#)

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ENCLOSURE 1

TECHNICAL MEMORANDUM

To: Andrew Anderson (PG&E)
From: Vanessa Martinez and Craig Addley (Kleinschmidt Group)
Date: 6/23/2025
Re: Baseline and Proposed Variance Simulation of June-October 2025 Lake Pillsbury Temperature Forecast Modeling (June 2025)

1.0 SUMMARY

This memorandum describes the Baseline and Proposed Variance water temperature model simulations of Lake Pillsbury for June through October, 2025, including the assumptions used to establish model boundary conditions and the results. The simulations assume the variance is either approved July 1st or August 1st, 2025. The simulations show that implementing the variance on July 1st would reduce the maximum water temperature in the Eel River below Scott Dam by an average of 1.10° C and the duration of temperatures above 22°C by up to one month. If the variance is approved by August 1st, the maximum water temperature in the Eel River below Scott Dam would be reduced by an average of 0.26° C and the duration of temperatures above 22° C would not change.

2.0 MODEL

The CE-QUAL-W2 water temperature model of Lake Pillsbury used for the scenario runs was developed for PG&E by Stantec/Kleinschmidt and was originally calibrated to data collected between 2010 and 2022 (Martinez, 2023). The calibration model report is available upon request.

3.0 MODELING ASSUMPTIONS

3.1 MODEL HYDROLOGY AND INFLOW TEMPERATURES

Baseline – Lake Pillsbury 2025 daily inflow and outflow forecasts for June through October 2025, were developed by Michelle Lent (PG&E) and provided on June 11, 2025. The 50% and 90% forecasts were found to result in almost identical temperature outcomes and therefore only the results of the 50% are provided in this report. Both 2021 (warm) and 2023 (cooler) empirical data were used to estimate the water temperatures and the flow split between the Eel River and Rice Fork inflows to Lake Pillsbury. A comparison of these model results showed almost no difference in outflow temperature,

indicating that summer outflow temperatures are not sensitive to the temperature of the relatively small inflows that occur during the summer. The results of the model using the 2023 inflow temperatures are provided in this report. The daily inflow temperatures and flow splits were provided by Scott McBain (McBain Associates).

Proposed Variance – The Proposed Variance model runs used identical inflow assumptions, but different outflow assumptions. The Proposed Variance scenarios used the following outflow assumptions:

- Variance flows begin July 1st, 2025, or August 1st, 2025, depending on the scenario. Prior to this date, the Baseline and Proposed Variance runs are identical.
- The most restrictive East Branch Russian River release of 5 cfs begins with the variance start date and is held through September 30, with an increase to 25 cfs on October 1.
- PVID deliveries are 35 cfs for the entire period in all scenarios.

3.2 STARTING TEMPERATURE PROFILE

A temperature profile was taken in Lake Pillsbury on June 13th, 2025. This was used to set the initial temperature in the reservoir for all scenarios.

3.3 METEOROLOGICAL BOUNDARY CONDITIONS

Meteorological data (air temperature, dew point temperature, wind speed, wind direction, cloud cover) were taken from the original model calibration period dataset. See the calibration model report for more information (Martinez, 2023).

Three model scenarios were run each with different meteorological datasets to capture variation due to different possible climate conditions in 2025. An analysis of air temperature from previous years indicated that 2010, 2018, and 2021 represented cool, average, and warm years respectively in the available 22-year record (2000-2022)¹.

Table 3-1 summarizes the modeling assumptions and boundary conditions used for each of the baseline model scenarios. The Proposed Variance scenarios were run with identical boundary conditions, with the exception of the outflow restrictions described above in section 3.1.

¹ The period of available meteorological data extended beyond the original model calibration period of 2010-2022.

Table 3-1. Baseline Model Scenario Assumptions

Model Input	Scenario 1 (2010 Met; Cool)	Scenario 2 (2018 Met, Average)	Scenario 3 (2021 Met, Warm)
Inflow Rate	50% Lake Pillsbury Forecast	50% Lake Pillsbury Forecast	50% Lake Pillsbury Forecast
Outflow Rate (No Variance)	50% Lake Pillsbury Forecast	50% Lake Pillsbury Forecast	50% Lake Pillsbury Forecast
Inflow Temperatures	Measured 2023 inflow temperatures for Eel and Rice Fork	Measured 2023 inflow temperatures for Eel and Rice Fork	Measured 2023 inflow temperatures for Eel and Rice Fork
Inflow Split	Measured 2023 flow split between Eel and Rice Fork	Measured 2023 flow split between Eel and Rice Fork	Measured 2023 flow split between Eel and Rice Fork
Meteorological Data	Measured 2010 Met Data (Cool)	Measured 2018 Met Data (Average)	Measured 2021 Met Data (Warm)
Initial Temperature Profile	Measured 6/13/2025 Lake Pillsbury Temperature Profile	Measured 6/13/2025 Lake Pillsbury Temperature Profile	Measured 6/13/2025 Lake Pillsbury Temperature Profile

4.0 MODEL RESULTS

Table 4-1 provides a summary of the Baseline and Proposed Variance water temperature model results below Scott Dam for the three modeled meteorological scenarios using the 50% hydrology forecast. Figure 4-1 and Figure 4-2 plot the modeled water temperature below Scott Dam comparing baseline operations to a Proposed Variance starting on July 1st and August 1st, respectively.

Comparison of Baseline and July 1st Proposed Variance scenarios show an average decrease in maximum summer temperature of about 1.10°C across all meteorological conditions due to the flow variance beginning on July 1st. The average monthly temperatures for July, August and September are 1.07°C, 1.32°C, and 0.03°C lower respectively due to the flow variance.

When the variance implementation is delayed until August 1st, the Proposed Variance scenarios show an average decrease in maximum summer temperature of about 0.25°C across all meteorological conditions. The average monthly temperatures for July, August and September are 0.03°C, 0.23°C, and 0.01°C lower respectively due to the flow variance.

Table 4-1 Model Scenario Water Temperature Results below Scott Dam – 50% Hydrology Forecast

Model Scenario	Maximum Summer Temperature (°C)	Average July Temperature (°C)	Average August Temperature (°C)	Average September Temperature (°C)
Scenario 1, Baseline 2010 met (cool)	24.19	20.96	23.39	21.80
Scenario 2, Baseline 2018 met (average)	23.88	21.30	23.22	21.16
Scenario 3, Baseline 2021 met (warm)	24.89	21.80	23.94	22.25
Scenario 1, Proposed Variance July 1st	22.65	19.89	21.72	21.75
Scenario 2, Proposed Variance July 1st	22.94	20.05	21.95	21.23
Scenario 3, Proposed Variance July 1st	24.09	20.78	22.93	22.32
Scenario 1, Proposed Variance Aug 1st	23.52	21.08	22.96	21.78
Scenario 2, Proposed Variance Aug 1st	23.78	21.29	23.05	21.19
Scenario 3, Proposed Variance Aug 1st	24.89	21.8	23.83	22.29

**Water Temperature below Scott Dam (50% Hydrology Forecast)
Variance starting July 1st, 2025**

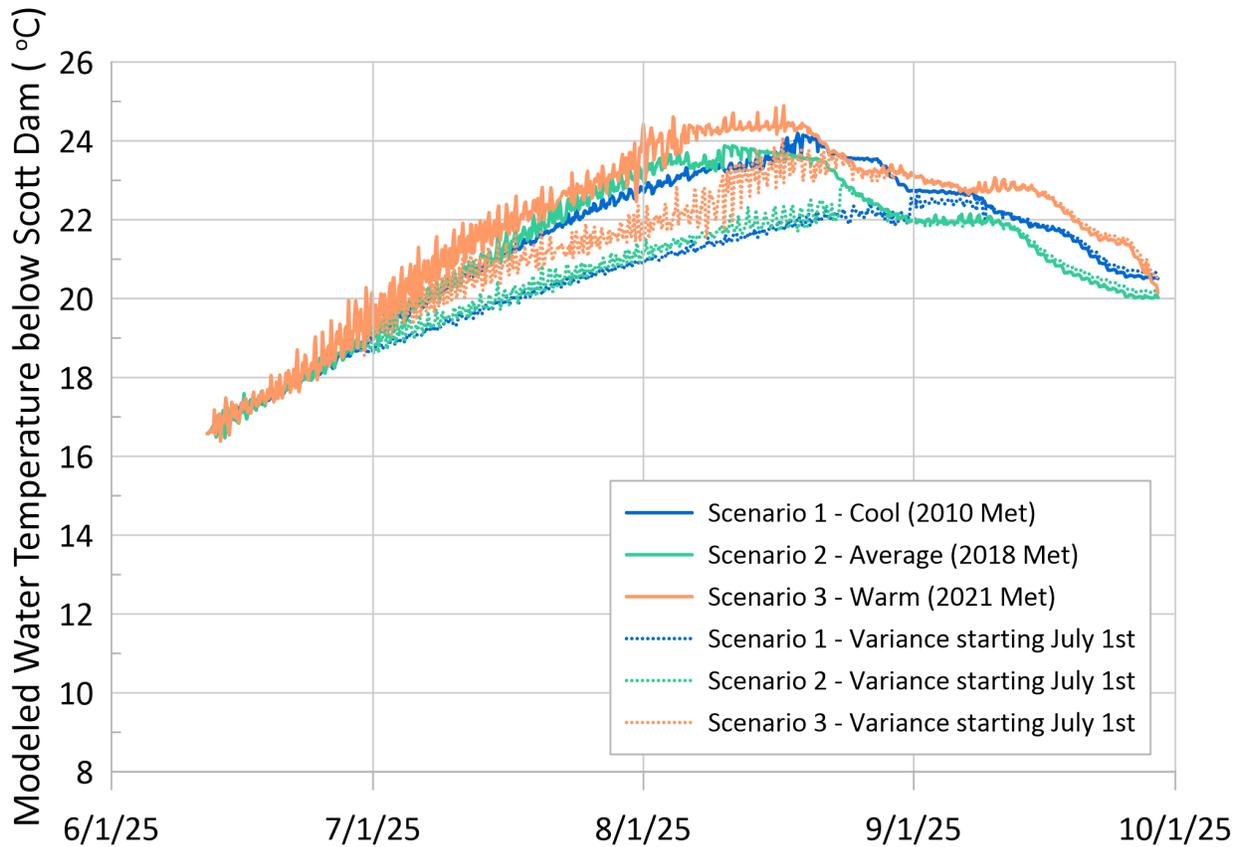


Figure 4-1. Water Temperatures below Scott Dam (Baseline and Proposed Variance starting July 1st).

Water Temperature below Scott Dam (50% Hydrology Forecast)
 Variance starting August 1st, 2025

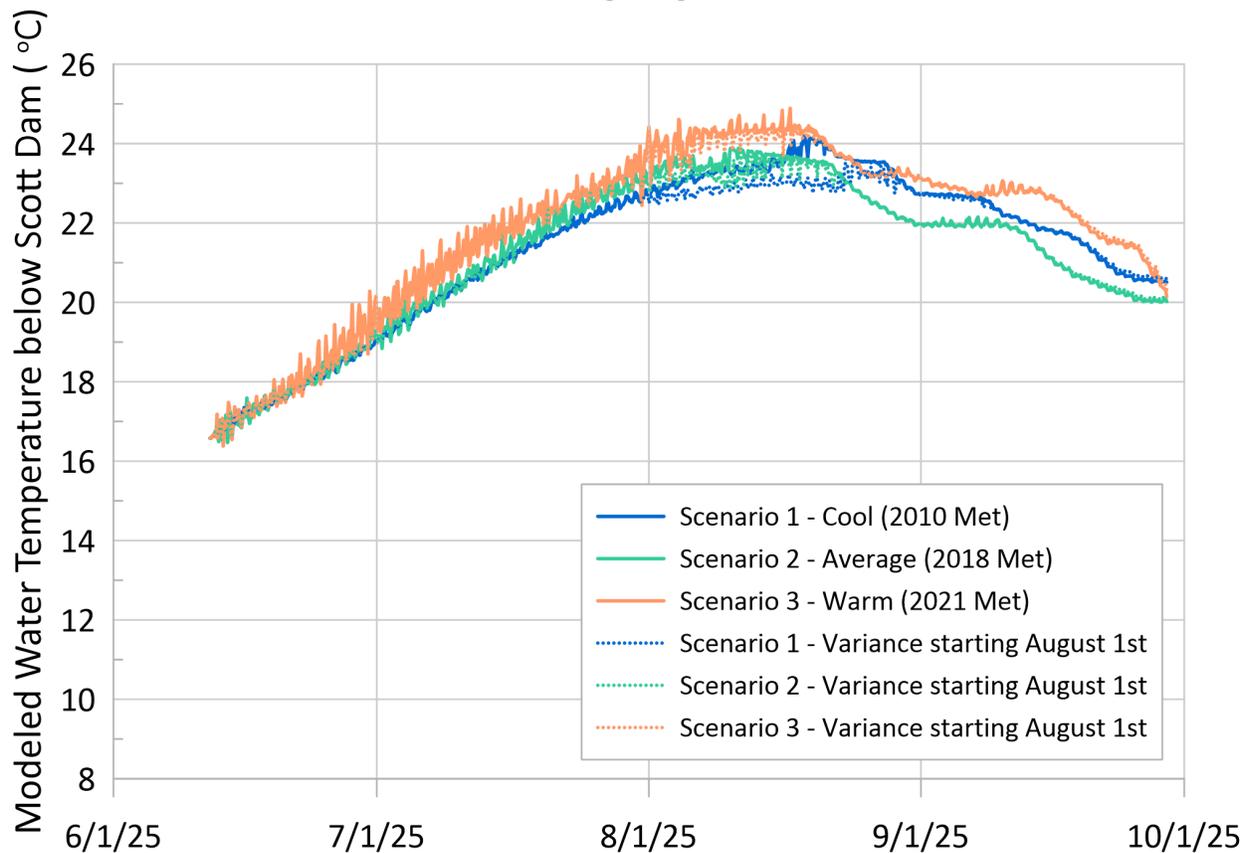


Figure 4-2. Water Temperatures below Scott Dam (Baseline and Proposed Variance starting August 1st).

5.0 CONCLUSION

When a flow variance is implemented starting on July 1st, modeling indicates that the maximum summer temperature below Scott Dam will decrease by an average of 1.10°C (50% hydrology, all met data years) and the average July-September water temperature will decrease by 0.80°C. The duration of water temperatures above 22°C would also be reduced by up to one month. If the variance is implemented on August 1st, the reduction in maximum summer temperature will be an average 0.26°C (50% hydrology, all met data years) and the average July-September water temperature will decrease by 0.06°C. The duration of water temperatures above 22° C would not change if the variance is delayed until August 1st. These model results indicate that early implementation of the variance is essential to achieving significant water temperature benefits to the Eel River below Scott Dam.

6.0 REFERENCES

Martinez, V., and Addley, C. (2023). *Lake Pillsbury CE-QUAL-W2 Water Temperature Model 2010–2022 Calibration Report*.