Pacific Gas and Electric Company

Power Generation

245 Market Street
San Francisco, CA 94105

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San Francisco, CA 94177

May 13, 2022

Via Electronic Submittal (E-Filing)

Ms. Kimberly D. Bose
Federal Energy Regulatory Commission
Office of Energy Projects
888 First Street, N.E.
Washington, DC 20426

Re: Potter Valley Hydroelectric Project (FERC No. 77)
2022 Flow Variance Request Due to Limited Water Availability

Dear Secretary Bose:

Please consider this letter a request for a flow variance for Pacific Gas and Electric Company's (PG&E) Potter Valley Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. 77. Lake Pillsbury, the storage reservoir for the Project, is not expected to fill enough this year to support license-required releases.

As of May 5, 2022, the estimated storage in Lake Pillsbury was approximately 62-thousand-acre feet (TAF), just over 80% of its total storage capacity of 75 TAF. The storage forecast shows the reservoir has likely entered dry season drawdown [Figure 1]. Under license-required flows, the reservoir is expected to be drawn down to critical minimum pool by late fall.

PG&E requests expedited review and approval to reduce flows at E-16 from Normal classification to Dry/Critically Dry. Under the Reasonable and Prudent Alternatives (RPA), the required flows at E-16 increase from 35 cfs to 75 cfs on May 15th. This increase will significantly increase the reservoir drawdown rate and result in more severe flow reductions later in the summer to maintain target storage in the reservoir.

Lake Pillsbury Minimum Pool

As a condition of a prior flow variance for the Project issued on July 15, 2016, FERC required PG&E to "determine the current low level operation constraints at Lake Pillsbury (beyond operator recommendations) that support a low reservoir elevation level." To address this requirement, PG&E submitted to FERC, on April 3, 2017, a Technical Memo (TM) that identified and evaluated potential dam safety and operational constraints on lowering the operating level. The TM found a high potential of bank sloughing exists at

pool levels between 5 and 12 TAF; the degree of bank sloughing is partially dependent on the drawdown rate of the reservoir.

Current and Forecasted Conditions

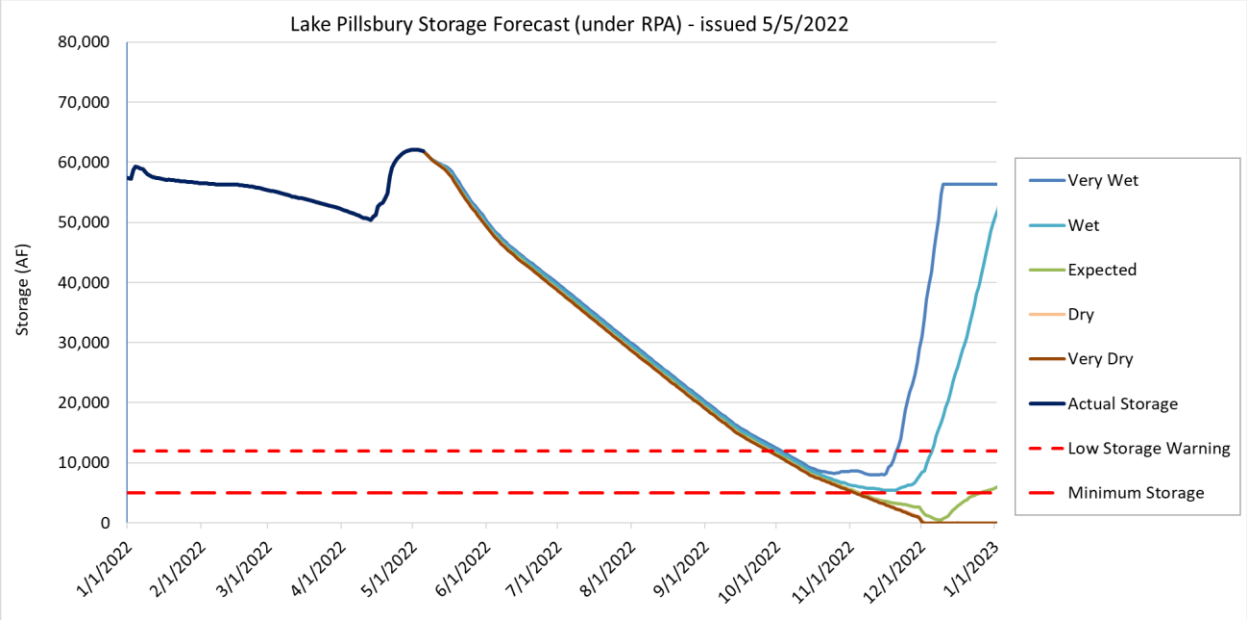

Figure 1. Lake Pillsbury forecast under license-required releases for different hydrologic conditions. Pillsbury inflow forecast downloaded from California Nevada River Forecasting Center on May 5, 2022 Note: Drawdown projection includes a 5 TAF spring block water release (regular 2.5 TAF block water release plus the carryover block water release from 2021) and a 2.5 TAF block water release in the fall. The overall use of the 5 TAF block water can be used at any time in 2022 at the discretion of the Agencies, if there are no dam safety concerns.

PG&E consulted with the California Department of Fish and Wildlife (CDFW), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and Round Valley Indian Tribes (RVIT) (hereafter, Agencies) during the development of the following variance proposal and resource Agencies provided input to PG&E. PG&E requests that the variance proposal take effect as soon as FERC approves the request.

Agency Consultation

Given the risk that providing Project License-required flows will lead to destabilizing drawdown rates and, in the worst case, reaching critical minimum pool at Lake Pillsbury, PG&E has been in consultation with resource Agencies and other interested stakeholders.

On March 3, 2022, PG&E held the 2022 Potter Valley Annual Biological Monitoring Meeting with Agencies. During the meeting, Agencies and PG&E agreed that in the

absence of significant storm runoff, flow reductions would be necessary to conserve water in Lake Pillsbury and provide flow and water quality conditions required to protect salmonids in the Eel River and avoid bank sloughing at Lake Pillsbury. PG&E provided Agencies with a draft variance proposal on March 31, 2022 (Enclosure 2), after meeting with agencies on March 28, 2022. Agencies provided comments on April 8, 2022, and PG&E provided a response to comments on May 9, 2022; this included a change to allocations based on increased inflow from April storms, followed by a meeting to discuss PG&Es proposed variance request on May 10, 2022 (Enclosure 1). The request in this letter includes comments received from the Agencies during the May 10, 2022 meeting.

Proposed Variance

Article 52 of the Project License requires PG&E to comply with the NMFS Reasonable and Prudent Alternative (RPA) that was made part of the license by FERC's "Order Amending License, issued January 28, 2004."

Below is a summary of the license-required and contract flows for 2022.

Table 1: License and Contract flows for 2022

Compliance Point	5/1 Requirement (cfs) without variance	Expected 6/1 Requirement (cfs) without variance	Classification*
Eel River below Scott Dam (E-2)	100 cfs	60 cfs	Normal
Eel River below Cape Horn Dam (E-11)	Value depends on Eel Index Flow	Summer flow is 9 cfs beginning on Aug. 1	Dry
East Branch Russian River (E-16)	35 cfs	75 cfs	Normal
Potter Valley Irrigation District	50 cfs	50 cfs	N/A

*Classifications are not finalized until May 15th for E-11 and June 1st for E-2/E-16. Expected classifications shown.

The upper Eel River contains habitat for Chinook salmon (*Onchorhynchus tshawytscha*) and steelhead trout (*O. mykiss*), both of which are listed as threatened under the Endangered Species Act (ESA). Under this variance, modifications to the minimum flows on the Eel River below Cape Horn Dam are not proposed and modifications to minimum flows below Scott Dam are within thresholds previously evaluated under the RPA.

The release obligations from expected Normal classification at E-2/E-16 and Dry classification at E-11 combined with normal water deliveries to PVID are forecasted to draw down Lake Pillsbury to critical levels by the end of the summer.

The following variance conditions will be in effect:

- PG&E will operate the Project to maintain at least 30 TAF in storage through September 15 per Agencies' request to limit depletion of cold-water pool.
- PG&E will coordinate with PVID to manage contract water deliveries on demand-based schedule. PG&E will provide PVID only with what is needed and no more than 50 cfs. Per the water sale contract, PG&E has discretion to limit deliveries, and will do so as needed to maintain storage above the 30 TAF target.
- Gaging Station E-2 will be reclassified as Critical. In practice, the E-2 flows will be the combined releases for E-11, E-16, and PVID, with a floor set by the minimum opening of the low-level outlet (around 35 cfs).
- Gaging Station E-16 will go to a target flow with no buffer, rather than a minimum flow with a buffer.
- Gaging Station E-16: Reduce target flow to 5 cfs initially. Target release can be adjusted between 5 cfs and 25 cfs based on storage projections.
- The Drought Working Group (DWG) will meet twice monthly, during the variance period, to discuss storage levels, release flow rates, water temperature profiles, release temperatures, and estimated temperature projections at E-2.
- DWG to determine flow modifications within variance flow bounds (Table 2) with Lake Pillsbury's early fall storage target serving as guidance. Flexibility in setting flows gives DWG the ability to respond to changing conditions and new information. If the DWG is unable to come to agreement on flow adjustments, NMFS, CDFW, and the RVIT will determine adjustments within the constraints of the FERC-approved variance.
- The drought variance will end when Lake Pillsbury storage exceeds 36 TAF following October 1, 2022, or is superseded by another variance. This storage threshold would allow the reservoir to meet minimum flow obligations, including a possible block water release, through January 2023, in the event of extremely low inflow in early winter.
- Provide Agencies discretion to use the 2021 roll-over 2.5 TAF of block water PG&E committed to in the 2021 Flow Variance Request (submitted to FERC on April 23, 2021) only if the reservoir meets or exceeds 50 TAF on June 1, 2022. This agreement will not affect the license-required annual allotment for 2022 of 2.5 TAF of block water. In addition, 2.5 TAF (one block water) will be rolled over into WY 2023 if unused in 2022. The roll-over amount will be allocated if PG&E determines it will not compromise dam safety
- PG&E will collect bi-weekly Lake Pillsbury vertical temperature profiles at Scott Dam, starting after May 1 through September 30, 2022. Temperature data will be incorporated into a spreadsheet model for comparison with historical temperature profiles and elevation and used to inform flow adjustments throughout the variance

period. This information will be distributed to the DWG prior to bi-weekly meetings.

- PG&E will collect bi-weekly spot temperature measurements in coordination with vertical temperature profiles at two accessible locations on the Eel River (Eel River at/near Benmore Creek and Eel River at/near Trout Creek) between Scott Dam and Cape Horn Dam to determine flow and habitat suitability for salmonids.
- PG&E will continue to monitor adult salmonid passage at Van Arsdale Fisheries Station at Cape Horn Dam throughout the variance period and to provide data to the DWG upon request.
- PG&E will provide funding for CDFW's adult salmonid DIDSON monitoring effort on the mainstem Eel River above South Fork Eel for the period of October 1 - December 31, 2022, as part of this variance.
- PG&E will monitor juvenile and adult salmonid outmigration through the Van Arsdale Fisheries Station at Cape Horn Dam in coordination with Agencies until June 1, 2022.
- PG&E will submit monthly storage reports to FERC.

Table 2: Range of flow values allowed by variance

Compliance Point	Allowed Range: Min / Max	Classification	Notes
Eel River below Scott Dam (E-2)	20 cfs / No max.	Critical	Adjusted from Normal classification
Eel River below Cape Horn Dam (E-11)	9 cfs (plus buffer) / No max.	Dry*	No change
East Branch Russian River (E-16)	5 cfs / 25 cfs	Critical / Dry	Adjusted from Normal classification
Potter Valley Irrigation District	No min. / 50 cfs	N/A	Demand-based allocation at PG&E's discretion

*Expected E-11 classification for WY2022 is Dry, however, the final classification won't be determined until May 15th.

Under the proposed variance, the reservoir can be managed to remain above 30 TAF storage target through September 15, 2022, and above 12 TAF through the end of the year [Figure 2]. An additional variance that addresses fall and winter flows may be necessary to maintain the reservoir above the level where bank stability issues arise, or at least slow the drawdown to a safe rate.

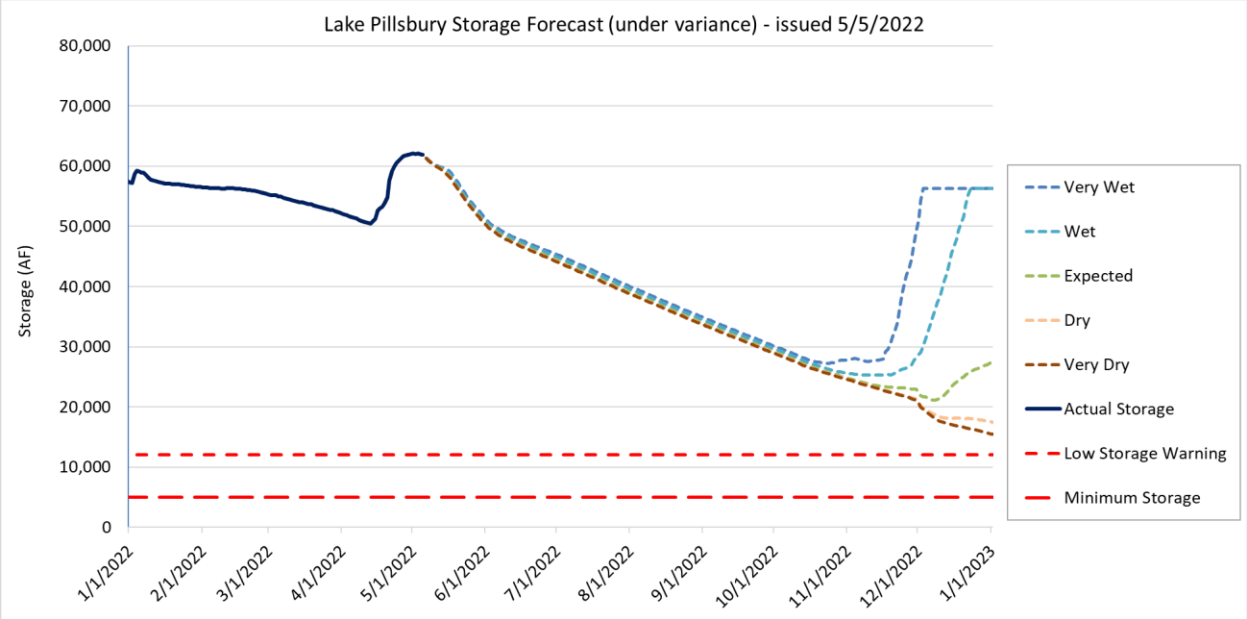

Figure 2. Lake Pillsbury forecast under proposed variance for different hydrologic conditions. Scenario shown assumes 12 TAF PVID allotment and 20 cfs flow for E-16. Pillsbury inflow forecast downloaded from California Nevada River Forecasting Center on May 5, 2022. Note: Drawdown projection includes a 5 TAF block water release assumed to occur in the spring of 2022 and a 2.5 TAF block water release in the fall of 2022.

Biological Impacts

PG&E biologists have reviewed this variance proposal and believe that the proposed drought flow variance is necessary to conserve water in Lake Pillsbury and provide adequate flow releases and suitable water quality conditions for the long-term protection of Chinook salmon and steelhead trout in the watershed. Below is their biological analysis.

Eel River below Lake Pillsbury and Van Arsdale Reservoir

The primary ESA-listed fish species impacted by the Potter Valley Project are Chinook salmon (*Onchorhynchus tshawytscha*) and steelhead trout (*O. mykiss*). Life stages of these species that could potentially be in the river and whose habitat conditions are influenced by project operations during the flow variance period are adult steelhead trout (pre- and post-spawn), and juvenile Chinook salmon and steelhead trout. If the variance extends beyond October, adult Chinook salmon will be present in the mainstem Eel River as well.

An early and intense wet season storm hit the Eel River watershed in late October. That storm, combined with above average precipitation in December resulted in high flows and favorable conditions for adult Chinook salmon migration in the upper Eel River watershed. A total of 457 adult Chinook salmon were counted at Van Arsdale Fisheries Station at Cape Horn Dam from October through January, and these individuals likely contributed to

increased Chinook fry production in the Eel River between Scott Dam and Cape Horn Dam. However, that wet period was followed by unseasonably dry conditions in January through March leading to low flows in the upper Eel River and tributaries, which coincided with adult steelhead trout (pre- and post-spawn) annual migration.

Adult steelhead trout migrate into the upper Eel River watershed to spawn primarily from January through April. Through May 1, 2022 of the current spawning season, 231 adult steelhead trout have been counted at Van Arsdale Fisheries Station at Cape Horn Dam. Under the proposed variance, flows in the Eel River for adult steelhead trout migration and spawning would not be reduced below the RPA-prescribed flows. Juvenile Chinook salmon remain in the river for several weeks after hatching and then migrate to the ocean during spring (typically April-June), as flows decline, and water temperatures increase. Juvenile steelhead trout, which typically spend one or more years in the river before migrating to the ocean during late winter and spring (typically February-June), require suitable habitat conditions throughout the summer. Under the variance proposal, available spring rearing habitat in the Eel River would not be affected by the variance. An increase in spring flows, followed by a decrease to summer levels, as prescribed by the RPA, would still occur under the variance proposal, thus providing important migration cues for downstream migrating fish.

Once approved, the proposed variance would reduce minimum flows in the reach between Scott and Cape Horn Dams to preserve storage in Lake Pillsbury. While this will reduce the available summer rearing habitat for steelhead trout, minimum flows would remain above the E-2 “Critical” classification prescribed by the RPA and suitable water quality conditions will be preserved. Summertime flow requirements in the Eel River below Cape Horn Dam under the proposed variance would remain unchanged from the RPA-prescribed “Dry” summer flow classification of 9 cfs, plus a buffer release.

Transitioning into fall and winter, the proposed drought flow variance is the prudent action, given critical water levels in Lake Pillsbury and the unpredictability of storm activity and inflow conditions. Implementation of the proposed drought flow variance will conserve water in Lake Pillsbury, provide suitable water quality conditions below Scott Dam and reduce the risk of reservoir bank erosion and sloughing at low reservoir storage levels that could limit PG&E's ability to make releases at Scott Dam, which could in turn impact downstream aquatic resources (including Chinook salmon and steelhead trout) due to changes in flow, high levels of turbidity, and sedimentation. Agencies will also have their Water Year 2022/2023 block water allotment under the RPA available during the fall/winter Chinook salmon spawning season to supplement flows if needed, given hydrologic conditions in the Eel River watershed.

Overall, the ability of the DWG to adjust flow releases would provide the opportunity to take advantage of any increases in available water storage due to storm activity and resulting runoff during the late spring and fall/winter season. Such increases in base flow could be directed towards benefitting aquatic resources, particularly Chinook salmon and steelhead trout upmigrants and spawners.

East Branch Russian River (EBRR)

The primary fish species of interest in the EBRR downstream of the powerhouse is resident rainbow trout (*O. mykiss*). Both natural origin and hatchery rainbow trout inhabit this stream reach. CDFW regularly plants catchable resident rainbow trout to support the local sport fishery. Under the variance, flows in the EBRR would be reduced from Normal to Critical classification (75 cfs to between 25 cfs and 5 cfs), resulting in a reduction in habitat for rainbow trout and other aquatic species. In turn, this would likely result in reduced sport fishing opportunities for the duration of the variance.

Conclusion

Due to persistent dry conditions, PG&E respectfully requests the above flow variance to avoid reaching critical minimum pool at Lake Pillsbury. Enclosed with this request is the consultation record. Responses were received from CDFW and NMFS which are also attached. Enclosure 1 is the consultation record for the draft proposal provided to Agencies on May 9, 2022. Enclosure 2 is the consultation record for the draft proposal provided to Agencies on March 31, 2022.

If you have any questions, concerns, or comments, please do not hesitate to contact Jackie Pope, license coordinator, at (530) 254-4007.

Sincerely,

Elisabeth Rossi

(Elisabeth Rossi, for)
Will Landreth, P.E.
Interim Manager, FERC and DSOD Compliance

Enclosures:
1. Agency Consultation Record March 31, 2022, Proposal
2. Agency Comments May 9, 2022, Proposal

Enclosure 1

From:	Joshua Fuller - NOAA Federal
To:	Pope, Jackie
Cc:	Renger, Allan@Wildlife; Boyce, Josh; Tom Daugherty - NMFS; wsmith@rvit.org; Scott McBain; Myers, Matt@Wildlife; Matt Goldsworthy - NOAA Federal; Anderson, Andrew; Lent, Michelle; Cheslak, Edward; Rossi, Elisabeth; Bob Coey; Jeffrey Jahn
Subject:	Re: Potter Valley Variance Request
Date:	Friday, May 13, 2022 9:12:01 AM
Attachments:	image001.png image002.png image004.png image005.png

Hi Jackie,

Thank you for the opportunity to review and comment on PG&E's *Potter Valley Project (FERC No. 77) 2022 Flow Variance Request Due to Limited Water Availability*, received via email on May 10, 2022. The National Marine Fisheries Service (NMFS) supports the need for a variance to conserve water storage within Lake Pillsbury that ensures suitable flow conditions for federally ESA-listed salmonids that occupy stream reaches downstream of Scott Dam, while protecting project infrastructure and providing for other water supply demands in the Russian River.

NMFS also appreciates PG&E's efforts to maintain at least 30k acre-ft within Lake Pillsbury through September 15, 2022, to limit depletion of the coldwater pool. However, without advanced management tools, NMFS recognizes the uncertainty with maintaining cooler water released from Lake Pillsbury that provides suitable summer temperature conditions for ESA-listed salmonids below Scott Dam when storage levels near or descend below 30k acre-ft. Therefore, we acknowledge that the best available information to maintain suitable summer temperatures for coldwater salmonids is limited and we strongly encourage that PG&E pursues completion of the water quality model that was proposed by PG&E and approved by FERC during the relicensing process. NMFS has also made this request on multiple occasions during previous drought variance efforts and included it as an *Interim Protective Measure* in NMFS' letter submitted to FERC, dated March 17, 2022. A properly developed water quality/temperature model will inform reservoir management and provide resource managers with the best water management strategies to conserve cooler water for federally ESA-listed salmonids, while balancing water storage in Lake Pillsbury that also supports water interests in the Russian River.

NMFS objects to the omission of several terms and conditions provided to PG&E by Round Valley Indian Tribes, California Fish and Wildlife, United States Fish and Wildlife Service, and NMFS during initial draft versions of this drought variance request. These natural resource entities have worked tirelessly and collaboratively with PG&E through multiple drought variances (7 of the past 9 years) with a very balanced approach to meeting the demands on the project. We have collectively identified key information and data gaps that help us finetune the challenges faced with the uniqueness of each drought variance we've experienced over the years. At minimum, NMFS strongly recommends that PG&E continues to fund the mainstem Eel River DIDSON through the duration of this drought variance and provide funding for the Middle Fork Eel River DIDSON, as requested, so we can properly manage project operations during the adult fall-run Chinook salmon spawning and migration season. Lastly, NMFS, again, strongly recommends that PG&E pursues completion of the water quality model partially developed during the relicensing process or an equivalent alternative to better inform reservoir management for federally ESA-listed salmonids.

Please contact me with any questions or comments.

Sincerely,

Josh F.

On Fri, May 13, 2022 at 8:41 AM Pope, Jackie <JHPL@pge.com> wrote:

> Good Morning,
>
> I wanted to follow-up with agencies, are you able to provide comments today? Are there any questions we need to address?

Thank you,

Jackie Pope | Hydro License Coordinator | Power Generation

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Pacific Gas and Electric Company

Phone: (530) 254-4007

Email: jhpl@pge.com

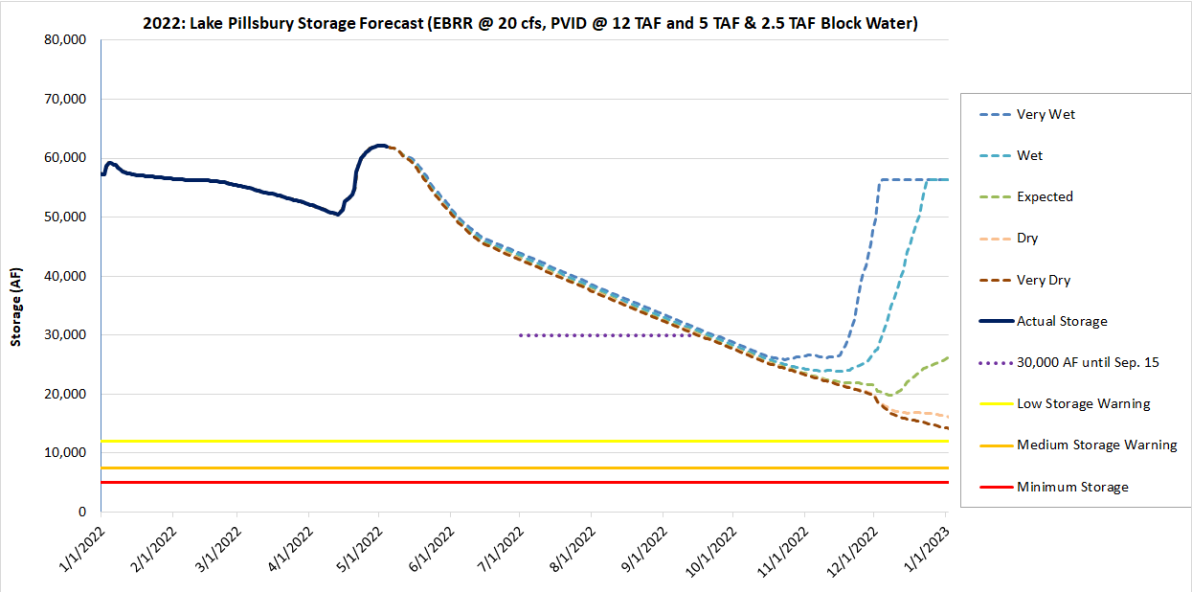
From: Pope, Jackie
Sent: Tuesday, May 10, 2022 8:11 PM
To: Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Boyce, Josh <josh_boyce@fws.gov>; Tom Daugherty - NMFS <Tom.Daugherty@noaa.gov>; wsmith@rvit.org; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>
Cc: Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Cheslak, Edward <EFC3@pge.com>; Rossi, Elisabeth <EBR8@pge.com>
Subject: RE: Potter Valley Variance Request

Thank you for meeting with us today to discuss the upcoming variance request.

I spoke with Michelle and the scenario included in the attached variance assumes that FERC approves the variance June 1st, including 15 days at RPA required flows.

Michelle was kind enough to run the scenario with the assumption that 30 days at current RPA required flow levels in hopes that we gain approval from FERC on or before 6/15. We are meeting the 30 TAF on 9/15 in the very dry scenario.

2	Date	Very Dry Alt Computed EOD	Dry Alt Computed EOD Storage	Expected Alt Computed EOD	Wet Alt Computed EOD Storage	Very Wet Alt Computed EOD
352	9/15/2022	30,087	30,161	30,301	30,784	31,199
353	9/16/2022	29,930	30,004	30,144	30,627	31,044



Please review the attached draft variance request, please provide comments by COB (5pm) May 12.

Respectfully,

Jackie Pope | Hydro License Coordinator | Power Generation

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Pacific Gas and Electric Company

Phone: (530) 254-4007

Email: jhpl@pge.com

From: Pope, Jackie
Sent: Monday, May 9, 2022 6:09 PM
To: Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Boyce, Josh <josh_boyce@fws.gov>; Tom Daugherty - NMFS <Tom.Daugherty@noaa.gov>; wsmith@rvit.org; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>
Cc: Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Cheslak, Edward <EFC3@pge.com>; Joseph, Matthew <MWJA@pge.com>; Rossi, Elisabeth <EBR8@pge.com>
Subject: Potter Valley Variance Request
Importance: High

Thank you for your comments regarding the Potter Valley Variance Request. We incorporated changes to the projections for the allocations based on the recent inflow in the attached amended request attached. Additionally, PG&E responded to the comments in the attached comments matrix and incorporated some agency comments/edits; see redline edits in the attached word document, the clean version is attached as a PDF.

PG&E recommends the scenario displayed below (found in the attached request Figure 2):

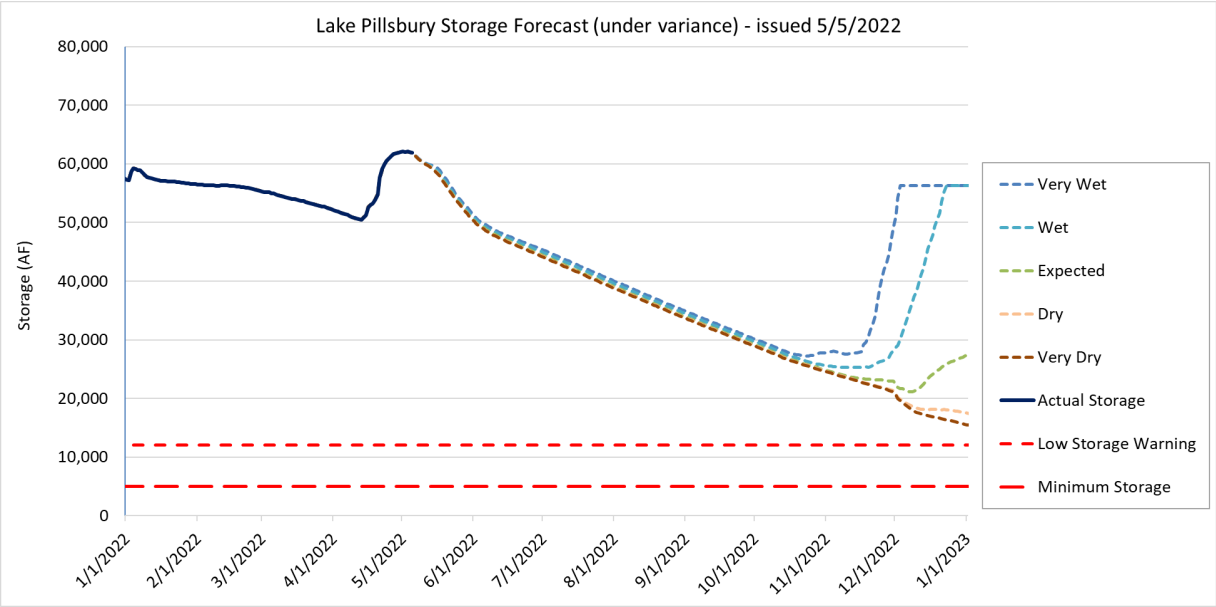

Figure 2. Lake Pillsbury forecast under variance for different hydrologic conditions. The scenario assumes 12 TAF PVID allotments and 20 cfs target flow for E-16. Pillsbury inflow forecast downloaded from California Nevada River Forecasting Center on May 5, 2022. Note: Drawdown projection includes a 5 TAF block water release assumed to occur in the spring of 2022 and a 2.5 TAF block water release in the fall of 2022.

PG&E leadership reviewed additional biological monitoring requested by agencies and is willing to support the didson monitoring on the mainstream of the Eel, like what PG&E provided during the 2021 variance, and spot temperature measurements in Eel River at Benmore and Trout Creeks.

PG&E plans to submit the attached request to FERC **on May 12th**. Please provide any additional comments by COB (5 pm) **on May 11th**.

We hope to meet with Agencies tomorrow, May 10th at 12:30 to discuss this request.

Thank you for your flexibility and patience through this process.

Respectfully,

Jackie Pope | Hydro License Coordinator | Power Generation

==========

Pacific Gas and Electric Company

Phone: (530) 254-4007

Email: jhpl@pge.com

From:	Myers, Matt@Wildlife
To:	Pope, Jackie; Renger, Allan@Wildlife; Joshua Fuller - NOAA Federal; Boyce, Josh; Tom Daugherty - NMFS; wsmith@rvit.org; Scott McBain; Matt Goldsworthy - NOAA Federal
Cc:	Anderson, Andrew; Lent, Michelle; Cheslak, Edward; Rossi, Elisabeth
Subject:	RE: Potter Valley Variance Request
Date:	Friday, May 13, 2022 11:22:21 AM
Attachments:	image006.png image007.png image008.png image009.png

Jackie,

The California Department of Fish and Wildlife (Department) staff have reviewed PG&E's *Potter Valley Project (FERC No. 77) 2022 Flow Variance Request Due to Limited Water Availability*, received via email on May 10, 2022. The Department supports this variance to help conserve water storage in Lake Pillsbury and to help meet temperature needs for the federally ESA-listed salmonids in the Eel River. However, the Department reiterates our request for this variance and from previous variances, the need for the water quality model that was proposed by PG&E and approved by FERC during the relicensing process. This tool would allow the Drought Working Group participants to analysis different flow scenarios in order to balance the needs of ESA-listed salmonids and the needs for water supply in the Russian River basin. Without it, we are just guessing and hoping for the best.

Matt Myers
Senior Enivornmental Scientist
California Department of Fish and Wildlife

From: Pope, Jackie <JHPL@pge.com>
Sent: Friday, May 13, 2022 8:35 AM
To: Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Boyce, Josh <josh_boyce@fws.gov>; Tom Daugherty - NMFS <Tom.Daugherty@noaa.gov>; wsmith@rvit.org; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>
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Jackie Pope | Hydro License Coordinator | Power Generation

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Email: jhpl@pge.com

From: Pope, Jackie
Sent: Tuesday, May 10, 2022 8:11 PM
To: Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Boyce, Josh <josh_boyce@fws.gov>; Tom Daugherty - NMFS <Tom.Daugherty@noaa.gov>; wsmith@rvit.org; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>
Cc: Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Cheslak, Edward <EFC3@pge.com>; Rossi, Elisabeth <EBR8@pge.com>

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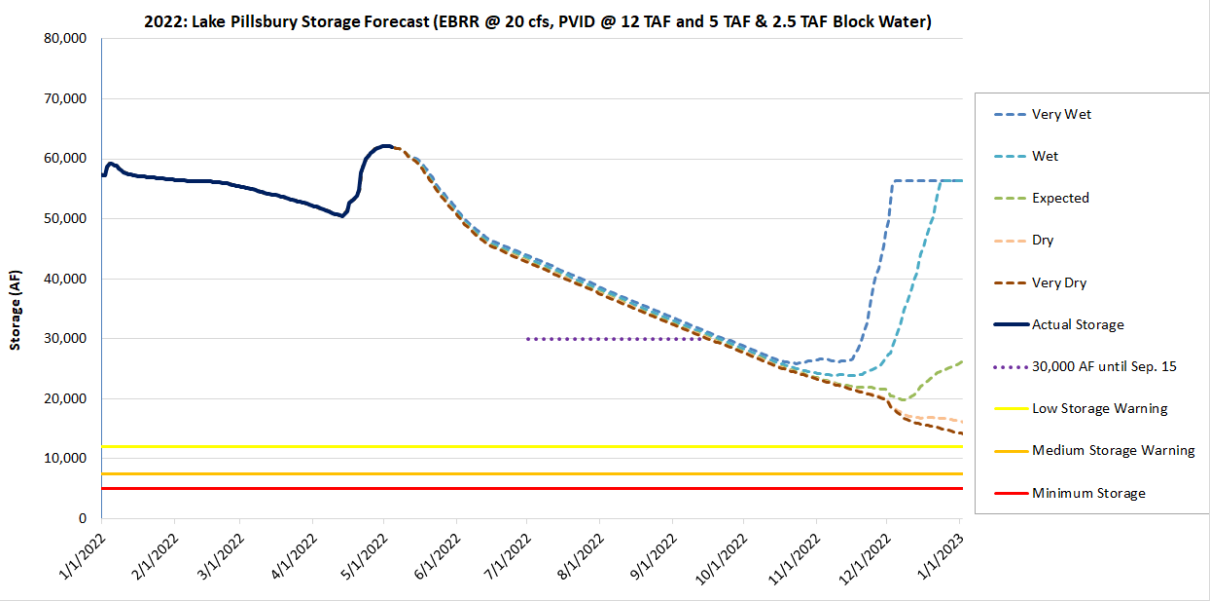

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Sent: Monday, May 9, 2022 6:09 PM
To: Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Boyce, Josh <josh_boyce@fws.gov>; Tom Daugherty - NMFS <Tom.Daugherty@noaa.gov>; wsmith@rvit.org; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>
Cc: Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Cheslak, Edward <EFC3@pge.com>; Joseph, Matthew <MWJA@pge.com>; Rossi, Elisabeth <EBR8@pge.com>
Subject: Potter Valley Variance Request
Importance: High

Thank you for your comments regarding the Potter Valley Variance Request. We incorporated changes to the projections for the allocations based on the recent inflow in the attached amended request attached. Additionally, PG&E responded to the comments in the attached comments matrix and incorporated some agency comments/edits; see redline edits in the attached word document, the clean version is attached as a PDF.

PG&E recommends the scenario displayed below (found in the attached request Figure 2):

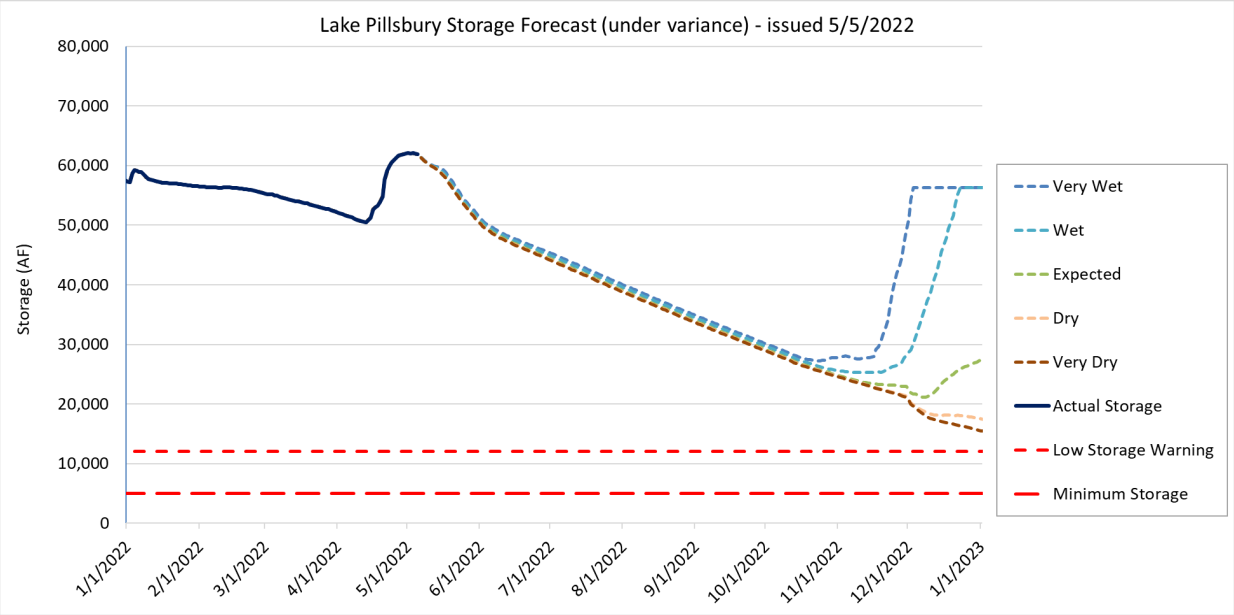

Figure 2. Lake Pillsbury forecast under variance for different hydrologic conditions. The scenario assumes 12 TAF PVID allotments and 20 cfs target flow for E-16. Pillsbury inflow forecast downloaded from California Nevada River Forecasting Center on May 5, 2022. Note: Drawdown projection includes a 5 TAF block water release assumed to occur in the spring of 2022 and a 2.5 TAF block water release in the fall of 2022.

PG&E leadership reviewed additional biological monitoring requested by agencies and is willing to support the didson monitoring on the mainstream of the Eel, like what PG&E provided during the 2021 variance, and spot temperature measurements in Eel River at Benmore and Trout Creeks.

PG&E plans to submit the attached request to FERC **on May 12th**. Please provide any additional comments by COB (5 pm) **on May 11th**.

We hope to meet with Agencies tomorrow, May 10th at 12:30 to discuss this request.

Thank you for your flexibility and patience through this process.

Respectfully,

Jackie Pope | Hydro License Coordinator | Power Generation

Pacific Gas and Electric Company
Phone: (530) 254-4007
Email: jhpl@pge.com

Enclosure 2

McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>; Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Cheslak, Edward <EFC3@pge.com>
Subject: RE: Meeting to discuss Potter Valley Variance

Hi Jackie,

Thanks for the opportunity to review and comment on the draft variance. The comments provided by NOAA are inclusive of comments from CDFW PVP staff (Allan Renger and Matt Myers). CDFW concurrence to the final variance request from PG&E to FERC will be evaluated by CDFW Region 1 managers.

Thanks -Allan

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Allan Renger

Fisheries Supervisor

1487 Sandy Prairie Court, Suite A, Fortuna, CA 95540

Cell (707) 834-4359

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE

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From: Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>
Sent: Friday, April 8, 2022 12:45 PM
To: Pope, Jackie <JHPL@pge.com>
Cc: Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Boyce, Josh <josh_boyce@fws.gov>; Tom Daugherty - NMFS <Tom.Daugherty@noaa.gov>; wsmith@rvit.org; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Matt Goldsworthy - NOAA Federal <matt.goldsworthy@noaa.gov>; Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Cheslak, Edward <EFC3@pge.com>
Subject: Re: Meeting to discuss Potter Valley Variance

Hi Jackie -

Please see NMFS' comments attached. These comments include input from the other Agencies, but might not be totally inclusive. So, please confirm with them.

Thanks for the opportunity to review and comment.

Best,

Josh F.

On Thu, Mar 31, 2022 at 4:27 PM Pope, Jackie <JHPL@pge.com> wrote:

> Greetings Agency Partners,
>
> Please see the attached draft variance for your review. Please provide your comments in track changes and let us know if you need to discuss any details or if this request warrants an additional meeting.
>
> We hope you can provide your comments **by April 6 at 5 pm**.
>
> Please let us know if you have any questions or concerns.
>
> Thank you,
>
> **Jackie Pope** | Hydro License Coordinator | Power Generation
>
> ==========
>
> **Pacific Gas and Electric Company**
>
> Phone: (530) 254-4007
>
> Email: jhpl@pge.com

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Joshua Fuller

North Coast Branch

California Coastal Office

NOAA Fisheries West Coast Region

U.S. Department of Commerce

777 Sonoma Ave., Rm. 325

Santa Rosa, CA 95404

Office: 707-575-6096

Joshua.Fuller@noaa.gov

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Joshua Fuller
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777 Sonoma Ave., Rm. 325

Pacific Gas and Electric Company

Power Generation

245 Market Street
San Francisco, CA 94105

Mailing Address:
Mail Code N11D
P.O. Box 770000
San Francisco, CA 94177

April XX, 2022

Via Electronic Submittal (E-Filing)

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Office of Energy Projects
888 First Street, N.E.
Washington, DC 20426

Re: Potter Valley Project (FERC No. 77)
2022 Flow Variance Request Due to Limited Water Availability

Dear Secretary Bose:

Please consider this letter a request for a flow variance for Pacific Gas and Electric Company's (PG&E) Potter Valley Project (Project), Federal Energy Regulatory Commission (FERC) No. 77. Due to persistent dry conditions, Lake Pillsbury, the storage reservoir for the Project, is not expected to fill this year. PG&E requested an early gate closure for Scott Dam from the Department of Water Resources' Division of Safety of Dams (DSOD) this year, but the gates were not closed early enough and the reservoir did not receive enough inflow to rise above spill crest. PG&E closed the radial gates on April 2, 2022, as allowed by the storage certificate issued by DSOD; however, it is not expected that the storage will increase above current levels based on the most recent inflow forecast developed by the California Nevada River Forecast Center.

As of April 11, 2022, the estimated storage in Lake Pillsbury was approximately 51 Thousand Acre Feet (TAF), less than 70% of its total storage capacity of 75 TAF. The storage forecast shows the reservoir has likely entered dry season drawdown [Figure 1]. Under license-required flows, the reservoir is expected to be drawn down to critical minimum pool by the end of summer.

Lake Pillsbury Minimum Pool

As a condition of a prior flow variance for the Project issued on July 15, 2016, FERC required PG&E to "determine the current low level operation constraints at Lake Pillsbury (beyond operator recommendations) that support a low reservoir elevation level." To address this requirement, PG&E submitted to FERC on April 3, 2017 a Technical Memo (TM) that identified and evaluated potential dam safety and operational constraints on lowering the operating level. The TM found a high potential of bank sloughing exists at

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pool levels between 5 and 12 TAF; the degree of bank sloughing is partially dependent on the drawdown rate of the reservoir.

Current and Forecasted Conditions

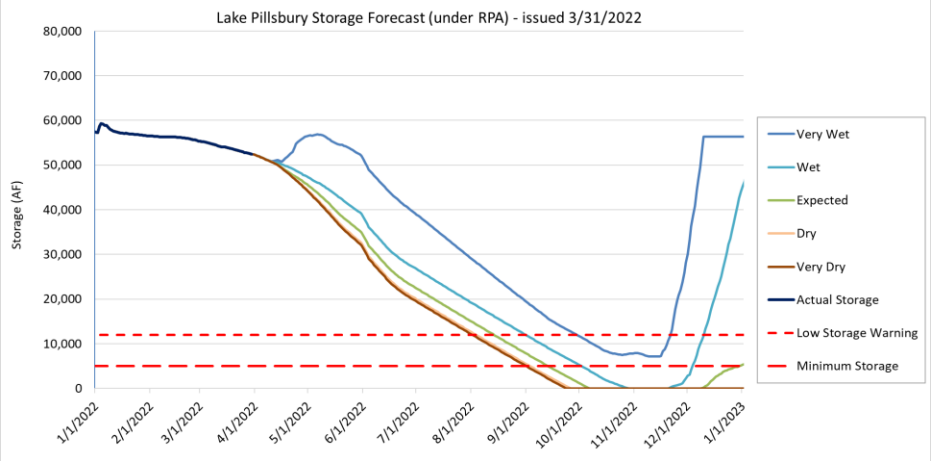

Figure 1. Lake Pillsbury forecast under license-required releases for different hydrologic conditions. Pillsbury inflow forecast downloaded from California Nevada River Forecasting Center on March 31, 2022 Note: Drawdown projection includes a 5 TAF spring block water release beginning June 1 (2022 2.5 TAF block water release plus the 2021 carryover block water release) and a 2023 2.5 TAF block water release in the fall beginning December 1.

The California Department of Fish and Wildlife (CDFW), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and Round Valley Indian Tribes (RVIT) (hereafter Agencies) provided input to PG&E on the following variance proposal, and PG&E requests that it take effect as soon as FERC approves the request.

Agency Consultation

Given the risk that providing Project License-required flows will lead to destabilizing drawdown rates and, in the worst case, reaching critical minimum pool at Lake Pillsbury, PG&E has been in consultation with Agencies and other interested stakeholders.

On March 3, 2022, PG&E held the 2022 Potter Valley Annual Biological Monitoring Meeting with Agencies. During the meeting, Agencies and PG&E agreed that in the absence of significant storm runoff, flow reductions would be necessary to conserve water in Lake Pillsbury and provide flow and water quality conditions necessary to protect salmonids in the Eel River and to avoid bank sloughing at Lake Pillsbury. PG&E provided Agencies a draft variance proposal on March 31, 2022.

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Proposed Variance

Article 52 of the Project License requires PG&E to comply with the NMFS Reasonable and Prudent Alternative (RPA) that was made part of the license by FERC's "Order Amending License, issued January 28, 2004."

Below is a summary of the license-required and contract flows for 2022.

Table 1: License and Contract flows for 2022

Compliance Point	4/1 Requirement (cfs) without variance	5/1 Requirement (cfs) without variance	Expected 6/1 Requirement (cfs) without variance	Classification*
Eel River below Scott Dam (E-2)	100 cfs	100 cfs	60 cfs	Normal
Eel River below Cape Horn Dam (E-11)	Value depends on Eel Index Flow	Value depends on Eel Index Flow.	Summer flow is 9 cfs beginning on August 1.	Dry
East Branch Russian River (E-16)	35 cfs	35 cfs	75 cfs (40 cfs)**	Normal (Dry Spring Exclusion)
Potter Valley Irrigation District	5 cfs	50 cfs	50 cfs	N/A

*While classification for E-11 occurs on May 15th and classification for E-2/E-16 occurs on June 1st the classification shown should not change.

**40 cfs would occur under Dry Spring Exclusion where Lake Pillsbury inflow in April and May is less than 20 TAF.

The upper Eel River contains habitat for Chinook salmon (*Onchorhynchus tshawytscha*) and steelhead trout (*O. mykiss*), both of which are listed as threatened under the Endangered Species Act (ESA). Under this variance, modifications to the minimum flows on the Eel River below Cape Horn Dam are not proposed and modifications to minimum flows below Scott Dam are within thresholds previously evaluated under the RPA.

The release obligations from expected Normal (with Jikely Dry Spring Exclusion if no substantial precipitation occurs) classification at E-2/E-16 and Dry classification at E-11 combined with normal water deliveries to PVID are forecasted to draw down Lake Pillsbury to critical levels by the end of the summer.

The following variance conditions will be in effect:

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- Potter Valley Irrigation District (PVID) delivery schedule to be reclassified to 'Exceptionally Low Inflow' and limited to 5,5 TAF from April 15 – October 15, 2022 as long as a target storage of 30 TAF can be achieved through August 31. PG&E reserves the right to seek further reduced deliveries if updated drawdown trajectories show the reservoir going below 12 TAF before November 30, 2022 (>12 TAF) or at the discretion of the Agencies.
- After October 16, 2022, PVID will continue demand-based delivery, limited to an average of 3 cfs.
- Gaging Station E-16 will go to a target flow with no buffer, rather than a minimum flow with buffer.
- Gaging Station E-16: Reduce minimum environmental flows from 25 cfs to 5 cfs (no buffer).
- The drought variance will end when Lake Pillsbury storage exceeds 36 TAF following October 1, 2022, or is superseded by another variance. This storage threshold would allow the reservoir to meet minimum flow obligations, including a possible block water release, through January 2023 in the event of extremely low inflow in early winter.
- Provide Agencies discretion to use the 2021 roll-over 2.5 TAF of block water PG&E committed to in the 2021 Flow Variance Request (submitted to FERC on April 23, 2021). This agreement will not affect the license-required annual allotment for 2022 of 2.5 TAF of block water, or the 2.5 TAF allotment for 2023.
- Provide Agencies with any unused WY2022 block water due to this variance and/or drought constraints in WY2023. This includes roll-over block water allocated in the 2021 Flow Variance Request. Block water will be implemented at the discretion of the resource agencies in coordination with PG&E as per the RPA.
- PG&E will collect bi-weekly Lake Pillsbury vertical temperature profiles at Scott Dam, starting after May 1 through September 30, 2022. Temperature data will be incorporated into a spreadsheet model for comparison with historical temperature profiles and elevation and used to inform flow adjustments throughout the variance period. This information will be distributed to the DWG prior to bi-weekly meetings.
- PG&E will conduct water temperature modeling scenarios including earlier wet-season gate closures utilizing current weather forecasting skill to evaluate the benefits to cooler reservoir temperatures and water storage during the dry season. Results from these modeling scenarios will be provided to the resource agencies no later than October 1, 2022.
- PG&E will conduct bi-weekly spot check temperature surveys in coordination with the Agencies at select locations (TBD) between Scott Dam and VAFS, including

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tributaries, to determine flow and habitat suitability for salmonids during the dry season.

- PG&E will continue to monitor adult salmonid passage at Van Arsdale Fisheries Station at Cape Horn Dam throughout the variance period and to provide data to the DWG upon request.
- PG&E will provide funding for CDFW's adult salmonid DIDSON monitoring effort on the mainstem Eel River, at minimum, for the period of October 1 - December 31, 2022as part of this variance. If the variance is needed following December 31, 2022, PG&E will continue to provide DIDSON funding until the variance ends or is superseded by another variance. PG&E will provide funding for the adult salmonid DIDSON monitoring effort on the Middle Fork Eel River for the period of October 1 - December 31, 2022 or until this variance ends.
- PG&E will monitor juvenile and adult salmonid outmigration through the Van Arsdale Fisheries Station at Cape Horn Dam until June 1, 2022. Outmigrant trapping to begin ASAP.
- PG&E may be required to rescue and relocate post-spawn steelhead trout (kelts) if Cape Horn Dam is determined to be unnavigable due to low bypass flows for downstream migration.
- DWG will meet twice monthly, during the variance period to discuss storage levels, release flow rates, water temperature profiles, release temperatures, estimated temperature projections at E-2.
- PG&E will submit monthly storage and water temperature reports to FERC.
- PG&E will re-evaluate and commit to longer-term variance operations, including Interim Protective Measures prescribed by the Agencies, to minimize the likelihood of reoccurring (7out of the last 9 years) drought variances in the future.

Table 2: Range of flow values allowed by variance, assuming a May 1, 2022 variance start date.

Compliance Point	Allowed Range: Min / Max	Water Year Classification	Notes
Eel River below Scott Dam (E-2)	20 cfs / No max.*	Critical	Adjusted from Normal classification
Eel River below Cape Horn Dam (E-11)	9 cfs (plus buffer) / No max.	Dry**	No change

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East Branch Russian River (E-16)	1 cfs/5 cfs (no buffer)	Critical	Adjusted from Normal classification
Potter Valley Irrigation District	No min. / 15 cfs (no buffer)	N/A	Total of 5.5TAF from May 1-October 15, 2022, if 30TAF Aug. 31 target is met.

*Flows at E-2 largely driven by minimum needle valve release capability of approximately 35 cfs.
**Expected E-11 classification for WY2022 is Dry, however, the final classification won't be determined until May 15th.

Under the proposed variance, the reservoir is expected to remain above 12,TAF through November 30, 2022 [Figure 2]. An additional variance that addresses fall and winter flows may be necessary to maintain the reservoir above the level where bank stability issues arise, or at least slow the drawdown to a safe rate.

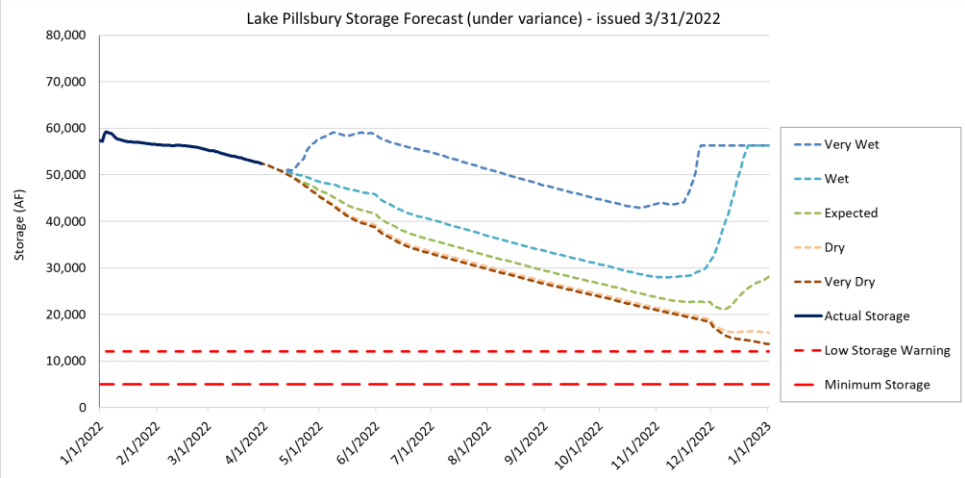

Figure 2. Lake Pillsbury forecast under proposed variance flow releases for different hydrologic conditions. Lake Pillsbury inflow forecast downloaded from California Nevada River Forecasting Center on April 8, 2022. Note: Drawdown projection includes a 2.5 TAF block water release assumed to occur in the spring of 2022 (beginning June 1) and a 2.5 TAF block water release in the fall of 2022 (beginning December 1). The overall use of the 5 TAF block water can be used at any time in 2022 at the discretion of the Agencies.

Biological Impacts

PG&E biologists have reviewed this variance proposal and believe that the proposed drought flow variance is necessary to conserve water in Lake Pillsbury and provide

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adequate flow releases and suitable water quality conditions for the long-term protection of Chinook salmon and steelhead trout in the watershed. Below is their biological analysis.

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Eel River below Lake Pillsbury and Van Arsdale Reservoir

The primary ESA-listed fish species impacted by the Potter Valley Project are Chinook salmon (*Onchorhynchus tshawytscha*) and steelhead trout (*O. mykiss*). Life stages of these species that could potentially be in the river and whose habitat conditions are influenced by project operations during the flow variance period are adult steelhead (pre- and post- spawn), and juvenile Chinook salmon and steelhead trout. If the variance extends beyond October, adult Chinook salmon will be present in the mainstem Eel River as well.

Adult steelhead trout migrate into the upper Eel River watershed to spawn primarily from January through April. Through March 27, 2022 of the current spawning season, 213 adult steelhead have been counted at Van Arsdale Fisheries Station at Cape Horn Dam. Under the proposed variance, flows in the Eel River for adult steelhead trout migration and spawning would not be reduced below the RPA-prescribed flows. Juvenile Chinook salmon remain in the river for several weeks after hatching and then migrate to the ocean during spring (typically April-June), as flows decline and water temperatures increase. Juvenile steelhead trout, which typically spend one or more years in the river before migrating to the ocean during late winter and spring (typically February-June), require suitable habitat conditions throughout the summer. Under the variance proposal, available spring rearing habitat in the Eel River would not be affected by the variance. An increase in spring flows followed by a decrease to summer levels, as prescribed by the RPA, would still occur under the variance proposal, thus providing important migration cues for downstream migrating fish.

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Beginning on May 1, the requested variance would reduce minimum flows in the reach between Scott and Cape Horn dams to preserve storage in Lake Pillsbury. While this will reduce the available habitat area for summer rearing steelhead trout, minimum flows would remain above the E-2 "Critical" classification prescribed by the RPA while preserving more suitable water quality conditions. Summertime flow requirements in the Eel River below Cape Horn Dam under the proposed variance would remain unchanged from the RPA-prescribed "Dry" summer flow classification of 9 cfs, plus a buffer release.

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Transitioning into fall and winter, the proposed drought flow variance is the prudent action, given critical water levels in Lake Pillsbury and the unpredictability of storm activity and inflow conditions. Implementation of the proposed drought flow variance will conserve water in Lake Pillsbury, provided better water quality conditions below Scott Dam, and reduce the risk of reservoir bank erosion and sloughing at low reservoir storage levels that could limit PG&E's ability to make releases at Scott Dam, which could in turn impact downstream aquatic resources (including Chinook salmon and steelhead trout) due to changes in flow, high levels of turbidity, and sedimentation. Agencies will also have unused Water Year 2021/2022 block water allotment and new 2023 block water allotment

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under the RPA available during the fall/winter Chinook salmon spawning season to supplement flows if needed, given hydrologic conditions in the Eel River watershed.

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Overall, the ability of the DWG to adjust flow releases would provide the opportunity to take advantage of any increases in available water storage due to storm activity and resulting runoff during the late spring and fall/winter season. Such increases in base flow could be directed towards benefitting aquatic resources, particularly Chinook salmon and steelhead trout upmigrants and spawners.

East Branch Russian River (EBRR)

The primary fish species of interest in the EBRR downstream of the powerhouse is resident rainbow trout (*O. mykiss*). Both natural origin and hatchery rainbow trout inhabit this stream reach. CDFW regularly plants catchable resident rainbow trout to support the local sport fishery. Under the variance, flows in the EBRR would be reduced from Normal to Critical classification (75 cfs to 5 cfs), resulting in a reduction in habitat for rainbow trout and other aquatic species. In turn, this would likely result in reduced sport fishing opportunities for the duration of the variance.

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Conclusion

Due to persistent dry conditions, PG&E respectfully requests the above flow variance to avoid reaching critical minimum pool at Lake Pillsbury. Enclosed with this request is the consultation record. Responses were received from CDFW, NMFS, USFWS, and RVIT, which are also attached.

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If you have any questions, concerns, or comments, please do not hesitate to contact Jackie Pope, license coordinator at (530) 254-4007.

Sincerely,

Will Landreth, P.E.
Interim Manager, FERC and DSOD Compliance

Comment Matrix
Potter Valley Variance Request

Comment No.	Page	Commenter (agency)	Comment	Response
1	1	NMFS; RVIT	Added text "gates were not closed early enough"	Gate closure is determined by DSOD, statement removed
2	1	NMFS; RVIT	Following approval…. We'll likely need to request much earlier gate closures when spilling and the long range weather forecast is dry… see modeling scenario term below.	The early gate closure is governed by DSOD, statement removed
3	3	NMFS; RVIT	This sounds like the agencies are requesting this variance, so I re-worded so that it is clearly PG&E that is requesting the variance, and we provided input.	PG&E concurs
4	3	NMFS; RVIT	CLP is 190 TAF, so E-2/E-16 is certain for Normal (>160 TAF on June 1), and we'll never get above 309 TAF for Wet year for E-11, so we're solidly in Dry for E-11. In other words, no uncertainty	PG&E concurs
5	3	NMFS; RVIT	(with likely Dry Spring Exclusion if no substantial precipitation occurs)	PG&E concurs
6	4	NMFS; RVIT	Potter Valley Irrigation District (PVID) delivery schedule to be reclassified to 'Exceptionally Low Inflow' and limited to 5.5 TAF from April 15 – October 15, 2022 as long as a target storage of 30 TAF can be achieved through August 31. PG&E reserves the right to seek further reduced deliveries if updated drawdown trajectories show the reservoir going below 12 TAF before November 30, 2022 (>12 TAF) or at the discretion of the Agencies. **Comment** *This should be based on a storage target of 30K acre-ft Sept. 1 not an automatic water volume allocation. Re-write this term to target 30K sept. 1.*	Based on improved storage situation in Pillsbury, the PVID allocation has increased to 12 TAF. This update is reflected in the updated variance request proposal submitted to agencies May 9, 2022
7	4	NMFS; RVIT	Gaging Station E-16 will go to a target flow with no buffer rather than a minimum flow with buffer.	PG&E concurs

8	4	NMFS; RVIT	Gaging Station E-16: Reduce minimum environmental flows from 25 cfs to 5 cfs (no buffer).	Based on improved storage situation in Pillsbury, the EBRR variance flow has increased 20 cfs, with flexibility to adjust flows between 5 cfs and 25 cfs to maintain storage targets. This update is reflected in the updated variance request proposal submitted to agencies May 9, 2022
9	4	NMFS; RVIT	Provide Agencies discretion to use the 2021 roll-over 2.5 TAF of block water PG&E committed to in the 2021 Flow Variance Request (submitted to FERC on April 23, 2021). This agreement will not affect the license-required annual allotment for 2022 of 2.5 TAF of block water, or the 2.5 TAF allotment for 2023.	PG&E agrees, with the caveat that this roll-over block water should be allocated only if the additional block water can be allocated safely at PG&E's discretion.
10	4	NMFS; RVIT	Provide Agencies with any unused WY2022 block water due to this variance and/or drought constraints in WY2023. This includes roll-over block water allocated in the 2021 Flow Variance Request. Block water will be implemented at the discretion of the resource agencies in coordination with PG&E as per the RPA.	PG&E agrees to roll-over one (1) block water (2.5 TAF) into WY 2023 if agencies are unable to use WY 2021 carryover or WY 2022 block water due to drought constraints with the caveat that this roll-over block water should be allocated only if the additional block water can be allocated safely at PG&E's discretion.
11	4	NMFS; RVIT	PG&E will conduct water temperature modeling scenarios including earlier wet-season gate closures utilizing current weather forecasting skill to evaluate the benefits to cooler reservoir temperatures and water storage during the dry season. Results from these modeling scenarios will be provided to the resource agencies no later than October 1, 2022.	This is outside the duration and scope of an annual drought variance; PG&E continues to provide additional water temperature data beyond what is required by the license.

12	4	NMFS; RVIT	PG&E will conduct bi-weekly spot check temperature surveys in coordination with the Agencies at select locations (TBD) between Scott Dam and Van Arsdale Fish Station, including tributaries, to determine flow and habitat suitability for salmonids during the dry season.	Access is limited in the reach between Scott and Cape Horn dams. PG&E agrees to perform spot temperature measurements in Eel River at Benmore and Trout Creeks in coordination with temperature profiles at Lake Pillsbury and provide agencies with bi-weekly temperature reports.
13	5	NMFS; RVIT	PG&E will provide funding for CDFW's adult salmonid DIDSON monitoring effort on the mainstem Eel River, at minimum, for the period of October 1 - December 31, 2022as part of this variance. If the variance is needed following December 31, 2022, PG&E will continue to provide DIDSON funding until the variance ends or is superseded by another variance. PG&E will provide funding for the adult salmonid DIDSON monitoring effort on the Middle Fork Eel River for the period of October 1 - December 31, 2022 or until this variance ends.	PG&E will provide funding for CDFW's adult salmonid DIDSON monitoring effort on the mainstem Eel River above South Fork Eel for the period of October 1 - December 31, 2022, as part of this variance. Funding is expected to cover one staff technician at a similar level as was provided during the 2021 variance request.
14	5	NMFS; RVIT	PG&E will monitor juvenile and adult salmonid outmigration through the Van Arsdale Fisheries Station at Cape Horn Dam until June 1, 2022. Outmigrant trapping to begin ASAP.	PG&E concurs
15	5	NMFS; RVIT	PG&E may be required to rescue and relocate post-spawn steelhead trout (kelts) if Cape Horn Dam is determined to be unnavigable due to low bypass flows for downstream migration.	The intent is unclear. This situation is highly unlikely. We can discuss further with agencies, but only occurs if CHD fish ladder is inoperable, which is not expected to occur.
16	5	NMFS; RVIT	PG&E will submit monthly storage and water temperature reports to FERC.	The reporting requirement is determined by FERC

17	5	NMFS; RVIT	PG&E will re-evaluate and commit to longer-term variance operations, including Interim Protective Measures prescribed by the Agencies, to minimize the likelihood of reoccurring (7out of the last 9 years) drought variances in the future.	This is outside the duration and scope of an annual drought variance.
18	5	NMFS; RVIT	Eel River below Scott Dam (E-2) 20 cfs / No max. **Comment** *Max set by resource agencies on a weekly basis. Max release rate will, in part, be determined by the previous week's average release temp at E-2 and temperature suitability for salmonids downstream of Scott Dam.* **Comment** *Not sure this is feasible, are we really going to meet weekly to do this?*	The actual E-2 release will be driven by releases for E-11, E-16 and PVID. It isn't necessary to set a maximum on E-2.
19	6	NMFS; RVIT	East Branch Russian River (E-16) 1 cfs/5 cfs (no buffer) Critical Adjusted from Normal classification **Comment Seems** *like it is needed. I added min, max, target*	PG&E will target flow to 20 cfs initially. Target release can be adjusted between 5 cfs and 25 cfs based on storage projections and in consultation with DWG.
20	6	NMFS; RVIT	Potter Valley Irrigation District No min. / 15 cfs (no buffer) N/A Total of 5.5TAF from May 1-October 15, 2022, if 30TAF Aug. 31 target is met.	The PVID allocation has increased based on recent inflow to 12 TAF, this update is reflected in the updated variance request proposal submitted to agencies May 9, 2022
21	6	NMFS; RVIT	April 8, 2022. Note: Drawdown projection includes a 2.5 TAF block water release assumed to occur in the spring of 2022 (beginning June 1) and a 2.5 TAF block water release in the fall of 2022 (beginning December 1). The overall use of the 5 TAF block water can be used at any time in 2022 at the discretion of the Agencies.	PG&E agrees, with the caveat that this roll-over block water should be allocated only if the additional block water can be allocated safely at PG&E's discretion.

21	6	NMFS; RVIT	PG&E biologists have reviewed this variance proposal and believe that the proposed drought flow variance is necessary to conserve water in Lake Pillsbury and provide adequate flow releases and suitable water quality conditions for the long-term protection of Chinook salmon and steelhead trout in the watershed. Below is their biological analysis. **Comment** *It seems like we should put some background in the next paragraph that provides context for the year: 1) good watershed access for chinook spawning due to October-December high flow, 2) likely good chinook fry production due to lack of scouring flows, assuming no redd desiccation, and 3) tons of adult steelhead (fresh and kelts) currently in the river that is likely experiencing the lowest flows on record at this time of year.*	PG&E Concurs; information added to the biological section.
22	7	NMFS; RVIT	Beginning on May 1, the requested variance would reduce minimum flows in the reach between Scott and Cape Horn dams to preserve storage in Lake Pillsbury. While this will reduce the available habitat area for summer rearing steelhead trout, minimum flows would remain above the E-2 "Critical" classification prescribed by the RPA while preserving more suitable water quality conditions.	PG&E concurs; This information is included in the variance request on page 7