



January 30, 2025

Via Electronic Submittal (E-File)

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

**RE: Potter Valley Hydroelectric Project (FERC Project No. 77-318)
Application for Non-Capacity License Amendment and Response to Additional
Information Request**

Dear Secretary Reese:

Pacific Gas and Electric Company (PG&E) is the owner, operator, and licensee of the 9.2-megawatt Potter Valley Hydroelectric Project (Potter Valley Project), Federal Energy Regulatory Commission (FERC) Project No. 77. The current Potter Valley Project license was issued in 1983 (25 FERC ¶ 61,010) and an amended license was issued by FERC in 2004. The license expired on April 14, 2022, and PG&E continues to operate the Project under an annual license (Notice of April 21, 2022, Authorization for Continued Project Operation). On July 8, 2022, PG&E filed a plan and schedule for filing an application to surrender the Potter Valley Project.

This filing presents PG&E's response to FERC's Request for Additional Information, issued October 4, 2023 (Volume I), and a non-capacity license amendment application (Volume II), which includes an Exhibit E and consultation record (Volume III). The contents of Volume I-III documents are classified as public.

Volume I Request for Additional Information

On October 4, 2023, FERC issued a Request for Additional Information in response to PG&E's July 31, 2023, request for long-term variance of the minimum flow requirements beginning in 2024 and continuing until decommissioning of the Potter Valley Project. In their October 2023 letter, FERC requested both responses to the Request for Additional Information, as well as for PG&E to initiate the license amendment process.

Volume II Non-Capacity License Amendment Application

PG&E is seeking a non-capacity license amendment for the Potter Valley Project to modify the existing minimum flow requirements under Article 52 of the license (Proposed Action). Article 52 requires PG&E to comply with the Reasonable and Prudent Alternative (RPA) provided in the U.S. Department of Commerce's National Marine Fisheries Service's (NMFS) 2002 Biological Opinion to prevent jeopardy to the threatened salmonids in the Eel River Basin. Since the adoption of the minimum flow requirements under Article 52, added to the license through an amendment issued January 28, 2004, PG&E has requested, and FERC has granted, numerous temporary variances to manage insufficient water supply and reservoir storage capacity to support RPA minimum flows. The repetitive nature and rationale for these variances demonstrates that the Project is

unable to meet the minimum flow requirements under Article 52 in both rivers while also maintaining facility safety and protecting listed species in the Eel River below Scott Dam.

Volume III Exhibit E, Environmental Report

Pursuant to Title 18 of the Code of Federal Regulations (CFR) Section 4.201(c), PG&E is providing an application for amendment of the existing license (Volume II), and only those exhibits that require revisions considering the Proposed Action, specifically Exhibit E (Volume III, Environmental Report). Exhibit E evaluates the potential impacts to the environment and social resources that may occur because of the Proposed Action. Potentially affected resources have been analyzed in detail, resources that are likely to be unaffected were analyzed in brief, and resources not affected were not analyzed at all.

Agency Consultation

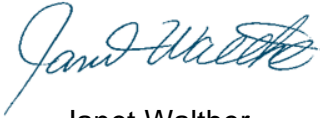
PG&E has consulted with federal, state, and local agencies, key parties, and tribal entities including NMFS, California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service, California State Water Resources Control Board (SWRCB), the Round Valley Indian Tribes (RVIT), Potter Valley Irrigation District, and other interested parties, as appropriate. These entities were provided opportunities to engage on the development of this non-capacity license amendment, and comment on this amendment application. On March 16, 2022, NMFS requested that FERC amend the license to incorporate interim protective measures to minimize and avoid further take of threatened salmonids, pending the license surrender proceeding. On February 9, 2024, PG&E sent a letter of intent (LOI) to NMFS, USFWS, CDFW, and RVIT agreeing to a modified suite of IPMs. On February 16, 2024, NMFS responded to PG&E that the modified IPMs were consistent with the intent of the 2022 letter. The measures outlined in the LOI were implemented as part of the 2024 temporary flow amendment and will be continued until PG&E implements the surrender and decommissioning plan.

On September 27, 2024, SWRCB staff filed a letter with FERC which notes the Board's determination that a water quality certification (WQC) is necessary for PG&E's proposed amendment due to the potential for increased discharges to navigable waters and therefore, the California State Water Resources Control Board (SWRCB) has requested PG&E to file an application for a Clean Water Act 401 Water Quality Certificate

PG&E has reviewed the SWRCB's letter and previous comments and has concluded that the proposed action is not an "activity . . . which may result in any discharge" within the meaning of section 401 of the CWA because the amendment application does not propose an increase in any discharge currently authorized under the existing license. However, in an effort to continue to move this amendment application forward, PG&E will submit a WQC application to ensure there is no delay given the SWRCB's one-year period to act should the Commission disagree with PG&E's position. If the Commission determines that the amendment application is not proposing an increase in existing discharges and a WQC is not required, PG&E requests that any conditions included in a certification be included in the amendment order only if consistent with the Federal Power Act and supported by Commission staff's analysis.

Volumes I, II, and III, referenced above, are provided as enclosures for review. Appendix E-1 and E-2 of Volume III provides the red-lined RPA and the agency consultation record for this amendment application, respectively. Please note that consultation in this submittal does not constitute consultation under Section 7 of the Endangered Species Act. Additionally, emails of support from CDFW, USFWS, and RVIT are included with this application. If you have any questions concerning these documents, please contact Chadwick McCready, senior license coordinator for PG&E, at (530) 685-5710, or by email at Chadwick.McCready@pge.com.

Sincerely,



Janet Walther
Director, Hydro Licensing

eFile:	Debbie-Anne A. Reese, Secretary via eLibrary at www.ferc.gov
Encl:	Cover Letter
	Volume I – Response to Additional Information Request
	Volume II – Application for Non-Capacity License Amendment
	Volume III - Exhibit E, and Consultation Record
	NMFS, USFWS, CDFW, and RVIT Support Emails

cc: [via email w/enclosures](#)
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ENCLOSURE 1

VOLUME I

PG&E Response to FERC Additional Information Request

Issued October 4, 2023



**Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612**

January 2025

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Introduction

On October 4, 2023, the Federal Energy Regulatory Commission (FERC) issued a Request for Additional Information requiring Pacific Gas and Electric (PG&E) to file a non-capacity license amendment application to address various long-term temporary variance requests of the minimum flow requirements pursuant to Article 52 of the Potter Valley Hydroelectric Project (FERC Project No. 77) license.

FERC Additional Information Request #1:

As stated in 18 CFR 4.201(c), any request for a non-capacity license amendment must include those exhibits that would be revised as a result of the proposal. This includes an exhibit E, or Environmental Report, that would analyze those potential effects from the proposed amendment. In your filing, you provide a brief review of potential effects to fishery resources in the Eel and East Branch Russian rivers, as well as a short discussion of impacts to water quality and quantity at the project that would result from the proposed amendment.

In order for Commission staff to complete its review the potential impacts of the proposed license amendment, please provide an assessment of impacts to all resources impacted by the proposed amendment in an Exhibit E, including but not limited to: geology and soils; water quantity (including effects to available water for consumptive uses and agriculture in the East Branch Russian River); water quality (including effects to water temperature in the Eel River and East Branch Russian River with and without the proposed amendment); aquatic resources (including impacts to resident fish species, macroinvertebrates, amphibians, and reptiles); terrestrial resources; threatened and endangered species (discussed further in paragraphs 2 and 3 below); recreation resources (including impacts to recreation resources at Lake Pillsbury, Eel River, and East Branch Russian River); cultural and historic resources; land use and aesthetic resources (including a discussion of impacts to shoreline development at Lake Pillsbury); and any impacts to communities with environmental justice concerns. If any of the foregoing resources are not impacted by the proposal, the Exhibit E should contain a statement of no effect for resources not affected by the proposed amendment.

PG&E Response to Additional Information Request #1:

Please see Volume III for the Exhibit E-Environmental Report (Volume III, Exhibit E). The Exhibit E addresses only the applicable resource areas that may be affected. The Exhibit E also includes a statement of no effect of those areas excluded from analysis.

FERC Additional Information Request #2:

Review of your proposal indicates that the action area in both the Eel River and East Branch Russian River includes known ranges for federally-listed terrestrial and aquatic species under the Endangered Species Act (ESA) that are under the jurisdiction of the U.S. Fish and Wildlife Service (FWS). Please describe what impacts may occur to species under the FWS' jurisdiction. If you anticipate effects to federally-listed species under the purview of the FWS, please provide an applicant-prepared biological assessment (BA) that provides an account of effects to species under the purview of the FWS. To facilitate development of a BA, you may consider requesting Commission approval to be designated as the Commission's non-federal representative for the purpose of informal consultation with the FWS, including development of a BA.

Alternatively, if you do not anticipate any effects to federally-listed species under FWS' jurisdiction, your proposal should contain a statement of no effect for these species and your supporting rationale

PG&E Response to Additional Information Request #2:

PG&E, in preparation of the Exhibit E, has consulted¹ with the U.S. Fish and Wildlife Service (USFWS) and established that there are no federally listed species under the USFWS jurisdiction at the time of the amendment filing.

¹ Consultation in this submittal does not constitute consultation under Section 7 of the Endangered Species Act

FERC Additional Information Request #3:

Similarly, you provided a brief review of potential impacts to federally-listed salmonids under the ESA. As stated in your summary of environmental effects, you anticipate a reduction in available habitat and increased water temperatures below Scott Dam as a result of your proposal. Due to the potential effects to these species under the jurisdiction of the National Marine Fisheries Service (NMFS), Commission staff anticipate that it will need to conduct formal consultation with NMFS under section 7 of the ESA. Formal consultation will include submittal of a BA, providing an account of any potential effects to federally-listed species under NMFS' jurisdiction. Therefore, please provide an account of these effects in an applicant-prepared BA. To facilitate the development of an applicant-prepared BA and determining the effects of the proposed amendment, you may consider requesting Commission approval to be designated as the Commission's non-federal representative for the purpose of informal consultation with NMFS.

PG&E Response to Additional Information Request 3:

The proposed amendment may reduce available habitat in the Eel River below Scott Dam during the summer through reduced diversion flows to the East Branch Russian River; however, it would support improved habitat conditions for juvenile steelhead in the Eel River by providing cooler water in the late summer. PG&E, in preparation of the Exhibit E, has received technical assistance from the National Marine Fisheries Service (NMFS), who supports the assertion that this proposed amendment is consistent with the 2002 Biological Opinion analysis and aligns with the goals and objectives outlined in their March and October 2022 letters to FERC. These letters detail Interim Protective Measures (IPMs) critical for salmonid conservation prior the decommissioning of the Potter Valley Project. PG&E has implemented a modified suite of IPMs consistent with the intent of NMFS' letter. Please see the NMFS letter supporting the proposed amendment in Appendix E-2.

FERC Additional Information Request #4:

In your filing, you also state that additional diversions may be allowed to the East Branch Russian River when Lake Pillsbury is spilling and all targeted environmental conditions (as determined by the resource agencies) are satisfied in the Eel River. You further explain that the resource agencies would develop initial guidelines to submit to the Commission by November 30, 2023 for minimum flow thresholds for spill diversions to commence and end, as well as associated ramping rates. You also explain that you may develop an alternative diversion prescription based on agency guidelines which would be implemented upon resource agency review and approval. Finally, you state that these guidelines may be refined in subsequent years based upon mitigation monitoring efforts, and that you would inform stakeholders of possible discretionary diversion, which would be included in the forthcoming guidelines filed with the Commission by November 30, 2023.

It is not possible to ascertain from your description of the forthcoming guidelines whether they are a departure from the existing license conditions or whether they would constitute best management practices to further reduce environmental impacts. In either scenario, Commission staff are unable to review the potential effects to environmental resources of these forthcoming guidelines or subsequently act on your proposed amendment until these parameters have been defined, reviewed by the agencies, and filed with the Commission for review. Therefore, we request that you accelerate the development of these guidelines in consultation with the resource agencies and file them with the Commission in order to accelerate Commission action on your amendment request. Alternatively, you may consider removing this element from your proposal or further clarifying the nature of the forthcoming guidelines and whether they represent a fixed protocol that is outside of the requirements of your project license.

PG&E Response to Additional Information Request 4:

In consultation with NMFS, USFWS, California Department of Fish and Wildlife (CDFW), and the Round Valley Indian Tribes (RVIT) in preparation of this non-capacity amendment application, the need for additional guidelines for diversions to the East Branch Russian River were determined unnecessary. Therefore, the non-capacity amendment does not request a fixed protocol that is outside of the existing requirements of the project license.

FERC Additional Information Request #5:

You explain that in order to allow flexible management of Lake Pillsbury water storage, minimum instream flows may be further modified beyond the parameters of the proposed amendment annually upon written agreement between you and the resource agencies. If flow regimes are further modified, you would notify the Commission within 30 days of reaching an agreement, or no later than May 1 of each year. In such a scenario, you would implement the revised flow regime, unless you receive a response from the Commission within 15 days.

While Commission staff are not necessarily opposed to adaptive management or dynamic water management, your proposal would result in flow adjustments beyond those analyzed as part of this proceeding and may have adverse effects on environmental resources, including those under purview of the ESA, Clean Water Act, and other federal statutes. Your proposed 15-day turnaround time would also not allow adequate time for Commission staff to review the proposed changes, fulfill its obligations under federal statutes, and take action on the proposed operational changes. Rather, any one-time or annual adjustment to an existing license requirement would be better suited as a request for a temporary variance of your project license. Therefore, this element of your proposal should be removed or modified in a such a way that the parameters for additional flow modifications are clearly defined and analyzed in your exhibit E.

PG&E Response to Additional Information Request #5:

PG&E, in consultation with NMFS, USFWS, CDFW and the RVIT, established the proposed modifications to license Article 52 implementing the 2002 RPA flows, in such a manner that removes the need for adaptive management decision making by FERC and the resource agencies and tribes (see Volume II, Table 1-1). Therefore, the non-capacity amendment does not contain flow adjustments beyond those which will be analyzed as part of this proceeding.

FERC Additional Information Request #6:

In your filing, you state that you would manage the amount of water diverted into the East Branch Russian River in consultation with the Drought Working Group (DWG). In a separate August 25, 2022 letter, you also defined the then- current DWG members. Please verify that the provided list remains current or update the entities that will be included in the DWG and why each stakeholder affected by your proposal is included or excluded from the DWG.

PG&E Response to Additional Information Request #6:

The proposed modifications to license Article 52 implementing the 2002 RPA flows (see non-capacity amendment application Table 1-1, Volume II) establishes a range of parameters for PG&E to determine flow releases that otherwise would have been identified during consultation with the DWG to establish flow releases. Establishing decision making parameters in the non-capacity amendment minimum EBRR flows removes the purpose and need to convene the DWG on an ad-hoc basis.

FERC Additional Information Request #7:

Finally, you provided documentation of consultation with the California Department of Fish and Wildlife (California DFW), NMFS, FWS, and Round Valley Indian Tribes on your proposed amendment. Your filing indicates that California DFW, NMFS, and the Round Valley Indian Tribes are supportive of your proposal. As a matter of policy, the Commission requires that applicants consult with all parties that would be directly affected by proposed amendments, including private entities affected by the proposal. Review of your proposal indicates that you did not conduct consultation with all downstream stakeholders affected by changes in water quantity, including those that rely on water from the East Branch Russian River, such as the Potter Valley Irrigation District (PVID). Therefore, you must provide documentation of consultation with all project stakeholders directly affected by your proposal, including the PVID.

Relatedly, pre-filing consultation is required for all agencies that have any nexus with environmental matters over which an agency has jurisdiction. Review of your filing does not indicate that you consulted with the California State Water Resources Control Board (California SWRCB) on your proposal. Under Section 401 of the Clean Water Act, a water quality certification is required for any action that may result in a change in discharge or have a material adverse impact on water quality at the project. Accordingly, please consult with the California SWRCB to determine if a water quality certification is necessary for the proposed amendment and if so, please complete the application process and file a completed certification with the Commission. Alternatively, if a water quality certification is not required, please provide documentation of consultation from the California SWRCB indicating that certification is not necessary.

PG&E Response to Additional Information Request #7:

PG&E has conducted consultation with CDFW, NMFS, USFWS, USDA Forest Service, SWRCB, PVID, and RVIT in the development of the flows shown in the non-capacity amendment application Table 1-1, Volume II. In addition, the same consulting parties listed above were provided the draft non-capacity amendment application and Exhibit E for review and comment. The consultation record is provided in Volume III Exhibit E-Environmental Report, Appendix E-2.

As stated in the non-capacity amendment application, PG&E's consultation with the SWRCB resulted in a request for PG&E to apply for a water quality certification (WQC) under Clean Water Act (CWA) section 401. However, the amendment application is not proposing an "activity . . . which may result in a discharge" within the meaning of section 401 of the CWA because the amendment is not proposing an increase in flows. PG&E does not believe a SWRCB Clean Water Act Section 401 water quality certificate is necessary as the modifications to the EBRR minimum flows are within the same range of flows and parameters as the 2004 project license amendment, for which FERC determined that a Clean Water Act Section 401 certificate was not required. In an effort to ensure the SWRCB is aligned with PG&E's assessment and to avoid delay in processing the application, PG&E intends to submit a request for WQC to the SWRCB. Please see Volume II Non-capacity License Application and Volume III Exhibit E-Environmental Report for additional information.

End of Additional Information Request Responses

ENCLOSURE 2



**Potter Valley
Hydroelectric Project
FERC Project No. 77**

**Application for
Non-Capacity License
Amendment**

Volume II

**Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612**

January 2025

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Pacific Gas and Electric Company
Application for Non-Capacity License Amendment

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**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION
Initial Statement**

Potter Valley Hydroelectric Project

FERC Project No. 77

1. Pacific Gas and Electric (PG&E) applies to the Federal Energy Regulatory Commission (FERC) for a non-capacity amendment of the license for the Potter Valley Hydroelectric Project (FERC Project No. 77; Project).
2. The exact name, business address, and telephone number of the Applicant are:

Dave Gabbard
Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612
(925) 852-1032

The exact name and business address of each person authorized to act as agents for the Applicant in this application are:

Janet Walther, Director of Licensing and Compliance
Pacific Gas and Electric Company
300 Lakeside Drive Oakland, CA 94612
Telephone: (530) 966-4615
Email: janet.walther@pge.com

Kim Ognisty, Attorney
Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612
Telephone: (540) 227-7060
Email: kimberly.ognisty@pge.com

Written communication should be directed to Janet Walther and Kim Ognisty at the address specified above. Telephone communication should be directed to Chadwick McCready at (530) 685-5710.

3. PG&E is a corporation of the State of California, and PG&E for the hydroelectric project designated as FERC Project No. 77 in the records of FERC, issued on October 10, 1983, and further amended on January 28, 2004, to require PG&E to comply with flow releases prescribed in the Reasonable and Prudent Alternative (RPA) in the National

Marine Fisheries Service (NMFS) 2002 Biological Opinion (Article 52 of the 2004 license amendment).

4. The amendment of license proposed and the reason(s) why the proposed changes are necessary are as follows:

PG&E requests amending FERC license Article 52 to (i) limit the minimum instream flows in the East Branch Russian River (EBRR) to the most restrictive flows set forth in the Project license, (ii) alter the minimum flow below Scott dam, (iii) adjust block water allocation from water year to calendar year, and (iv) define mean daily flow as the measurement by which compliance is determined. Please refer to Exhibit E, Appendix E-1, *2002 National Marine Fisheries Service (NMFS) Reasonable and Prudent Alternative (RPA)*, redline showing changes to the RPA language. Details of the revisions to the RPA are discussed in Section 1.1 below.

5. (i) The applicable statutory or regulatory requirements of the state(s) in which the project would be located that affect the project as proposed with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes are:
 - a. California Water Code § 102 – allows for the appropriation, related diversion, and use of water for power purposes.

(ii) The steps which the applicant has taken or plans to take to comply with each of the laws cited above are:

- a. None. The applicant holds water rights sufficient to operate the Project consistent with the existing license. The proposal in the amendment application does not require use of additional appropriative water rights.

Non-Capacity Amendment Application

1.1 Proposed Action

PG&E requests amending FERC license Article 52 to (i) modify the minimum instream flows in the East Branch Russian River (EBRR), (ii) alter the minimum flow below Scott Dam, (iii) adjust block water allocation from water year to calendar year, and (iv) define mean daily flow as the measurement by which compliance is determined. Please refer to Exhibit E, Appendix E-1, *2002 National Marine Fisheries Service (NMFS) Reasonable and Prudent Alternative (RPA)* (Redline) showing changes to portions of the RPA language which support the amendment description below.

PG&E’s proposal revises the RPA flow requirements but stays within the bounds of the original RPA flow regimes. All other portions of the RPA will remain as part of the Project license and are not applicable to this license amendment application. The Proposed Action does not increase discharges to navigable waters beyond what was analyzed as part of the 2004 license amendment. This amendment does not significantly alter the timing or magnitude of spill events.

1.1.1 Minimum Stream Flows in the EBRR

The new minimum flow schedule is included as Table 1-1. The minimum flow schedule shown in Table 1-1 updates the minimum flow schedule in 2002 RPA Section C.1.

Table 1-1. Minimum Flow of the East Branch Russian River (MF16, as measured at compliance gage E-16).

Period		Classification		
From	Through	Normal	Dry	Critical
October 1	April 14 ¹	35 cfs	35 cfs	5 cfs
April 15	May 14	Scott Dam in Spill Condition²:		
		35 cfs	25 cfs	5 cfs
May 15	June 30	Scott Dam not in Spill Condition²:		
		5 cfs	5 cfs	5 cfs
May 15	June 30	Scott Dam in Spill Condition²:		
		75 cfs	25 cfs	5 cfs
July 1	September 30	Scott Dam not in Spill Condition²:		
		5 cfs	5 cfs	5 cfs
July 1	September 30	5 cfs	5 cfs	5 cfs

¹ Flows from October 1-April 14 remain unchanged from the RPA flows.

² Scott Dam spill is defined as when Lake Pillsbury water surface elevation is above an elevation of 1,900.0 feet, based on the PG&E datum.

PG&E’s proposed amendment to Article 52 is aimed at maintaining storage in Lake Pillsbury throughout the spring and summer to maintain facility safety and to support cooler water temperature flow releases from Scott Dam into the Eel River during the late summer. The

proposed minimum flows in the EBRR fall within the existing flow ranges already analyzed as part of the 2004 amendment adopting the RPA (EBRR minimum flows range from 5 cfs to 75 cfs) set forth in the 2002 NMFS Biological Opinion. Table 1-1 flows are further described below:

October 1 through April 14: The proposed flow regime follows the existing license required RPA flows, but changes the timing by approximately 14 days, from the current requirement of September 16th to the proposed amendment date of October 1st.

DURING SPILL CONDITION AT SCOTT DAM¹

April 15 through May 14th: The proposed flow regime follows the existing license required RPA flows for Normal, Dry and Critical with the spill status as an additional qualifying condition.

May 15th through June 30th: The proposed flow regime follows the existing license required RPA flows for Normal, Dry and Critical with the spill as an additional qualifying condition, and the calendar term duration is modified from the 2002 RPA May 15th through September 15th to proposed amendment of May 15th to June 30th.

July 1st through September 30th: The minimum flows in the EBRR are 5 cfs, regardless of water year type.

DURING NON-SPILL CONDITIONS AT SCOTT DAM

April 15th to September 30th: The minimum flows in the EBRR are 5 cfs, regardless of water year type. Under the existing license RPA, a 5 cfs minimum flow only occurred in the Critical water year.

1.1.2 Flows Below Scott Dam

PG&E requests amending Article 52 to modify the minimum flow below Scott Dam (MF02), as measured at compliance gage E-2, regardless of calendar date or water year type, to 20 cfs (RPA Section B.1²). The revision of minimum flow to 20 cfs is consistent with the 2002 RPA flow during Critical water years and represents flows necessary to support Table 1-1. The amendment will remove the Dry and Normal water year classifications of 40-100 cfs. It should be noted that in practice, minimum flows would never be as low as 20 cfs due to facility limitations and the combined flow requirements of the Eel River downstream of Cape Horn Dam (gage E11), EBRR, and PVID water deliveries.

¹ When Lake Pillsbury water surface elevation is above 1,900.0 feet (PG&E Datum)

² The RPA refers to measurements at E2, E11, and E16 as MF02, MF11, and MF16 respectively

1.1.3 Mean Daily Flow as Compliance Measurement

PG&E requests amending Article 52 to include a definition of compliance with minimum flows to be the **mean daily flow** as the “calculated 24-hour average of the flow” (RPA Sections A and C.1).

1.2 Background

The original license for the Potter Valley Project was issued effective April 15, 1922, and expired on April 14, 1972. From 1972 to 1983, the Project operated on annual licenses during the extended relicensing period, with the Project license issued in 1983. The 1983 Potter Valley Project license expired on April 14, 2022. On January 25, 2019, PG&E filed a Notice of Withdrawal of its Notice of Intent (NOI) and Pre-Application Document (PAD) with FERC. FERC accepted PG&E’s updated plan and schedule for surrender and decommissioning of the Project on July 1st, 2024. PG&E continues to operate the Project under an annual license (Notice of April 21, 2022, Authorization for Continued Project Operation).

On January 28, 2004, FERC issued an order amending the Potter Valley Project license (2004 Amendment, FERC 2004a) to incorporate the terms of National Marine Fisheries Service’s (NMFS) Reasonable and Prudent Alternative (RPA), and Reasonable and Prudent Measures, which can be found in the Biological Opinion (BiOp) filed by NMFS on December 2, 2002. In 2006, PG&E further adjusted operations to comply with the terms of the license, including full implementation of the RPA. From 2013 to 2022, PG&E operated under temporary flow variances 7 out of 10 years due to insufficient water supply.

On March 16, 2022, NMFS requested that FERC amend the license to incorporate interim protective measures to minimize and avoid further take of threatened salmonids, pending the license surrender proceeding. On February 9, 2024, PG&E sent a letter of intent (LOI) to NMFS, USFWS, CDFW, and RVIT agreeing to a modified suite of IPMs. On February 16, 2024, NMFS responded to PG&E that the modified IPMs were consistent with the intent of the 2022 letter. The measures outlined in the LOI were implemented as part of the 2024 temporary flow amendment and will be continued while PG&E implements the surrender and decommissioning plan.

In March of 2023, following the results of an updated seismic study, PG&E took proactive steps to limit the potential for seismic instability of Scott Dam. In compliance with license Article 45, PG&E established a 10-foot restriction of the maximum reservoir operating level of Lake Pillsbury as a remedial measure. Instead of closing the spill gates to store additional water during the spring and summer months, PG&E left the Scott Dam spill gates open indefinitely to protect the structural stability of Scott Dam, reducing storage capacity of the reservoir by approximately 26 percent (20,000 acre-feet). This reduction in storage capacity further increases the likelihood that PG&E would require flow variances due to insufficient water supply, even during years with high inflow.

On March 17th, 2023, PG&E informed the California Department of Water Resources, Division of Safety of Dams (DSOD) and FERC of PG&E’s decision to impose a reservoir restriction of

1,900 feet (PG&E datum) to reduce the seismic risk to Scott Dam. In a letter to PG&E dated April 12, 2023, DSOD concurred with PG&E's analysis and remedial actions, and instituted an operation restriction, requiring the spill gates to remain open year-round indefinitely, reducing the storage capacity in Lake Pillsbury by approximately 20,000 acre-feet. In a letter from FERC to PG&E dated April 28, 2023, FERC concurred with the DSOD finding.

In 2023 and 2024, PG&E requested flow variances to support cooler water temperature releases from Lake Pillsbury due to changes in operations resulting in lower water storage. On July 31, 2023, PG&E submitted a request for a long-term variance of the minimum flow requirements, beginning in 2024 and continuing until decommissioning of the Potter Valley Project. On October 4, 2023, FERC issued a Request for Additional Information requesting that PG&E initiate the license amendment process to revise the license flows.

1.3 Purpose and Need

PG&E is requesting a non-capacity amendment to FERC license Article 52 to reduce EBRR flows to proactively manage reservoir storage in a manner that is protective of the Project facilities and promotes cooler water temperature releases to minimize and avoid potential impacts to federally Endangered Species Act (ESA)-listed salmonid species and other aquatic resources that occupy the Eel River within the Project area. The RPA includes requirements for the minimum instream flows released by the Project. On February 21, 2024, PG&E requested its 8th annual flow variance request in the last 11 years, indicating the RPA flow requirements are not aligned with current climate conditions. In summary, reservoir storage has not been sufficient to support the RPA flows in more than 70% of the last 11 years. The need for a FERC application for non-capacity amendment is to amend Article 52 minimum flow releases adopted on January 28, 2004, based on a repeated history of requests for variances coupled with the Lake Pillsbury baseline condition of 1,900.0 feet maximum pool elevation (PG&E datum) directed by DSOD and FERC.

PG&E is filing this application for a non-capacity amendment of the license with FERC to reflect the modifications, described above in Section 1.1.1, of the RPA minimum flows developed in consultation with NMFS, California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service, and the Round Valley Indian Tribes (RVIT).

For purposes of this application, only those exhibits applicable to the proposed changes to Project are being provided, in accordance with 18 C.F.R. § 4.201(c), as outlined and described below:

- Exhibit E, Environmental Report: An analysis of potential environmental impacts associated with the activities proposed herein is provided as Exhibit E: Environmental Report.

1.4 Consequences of License Amendment Application Denial or Significant Delay

In 2002, the NMFS Biological Opinion found that operation of the Project under the flow regime defined by Article 38 as established in the 1983 license could jeopardize the continued existence of listed species of Southern Oregon/Northern California coho salmon, California Coastal Chinook salmon, and Northern California steelhead. The 2002 NMFS Biological Opinion included an RPA designed to modify Project operations to avoid jeopardizing these species. The RPA was incorporated into the Project license by an amendment in 2004 which added Article 52, requiring PG&E to develop a plan, and to submit and implement the plan demonstrating PG&E's compliance with the RPA. PG&E has operated the Project under the requirements of Article 52 since 2006.

Since 2004, it has become increasingly challenging for PG&E to maintain compliance under Article 52. From 2013 to 2022, PG&E operated under flow variances 7 out of 10 years due to insufficient water supply. In 2023 and 2024, PG&E requested flow variances to support cooler water temperature releases from Lake Pillsbury due to changes in operations resulting in lower water storage. The cumulative number of and repetitive nature of these variance requests has demonstrated to PG&E and FERC that the current flow regime under Article 52 does not provide adequate resource protection within the operational limitations and factors affecting the Potter Valley Project's existing operations.

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 a technical memorandum (TM) to FERC on April 3, 2017 (Mead & Hunt, 2017), that identified and evaluated potential dam safety and operational constraints on lowering the operating level. As described in the TM, a high potential of bank sloughing exists at pool levels between 5,000 and 12,000 acre-feet; the degree of bank sloughing partially depends on the drawdown rate of the reservoir. Since this analysis was performed, PG&E has used 12,000 acre-feet as the Lake Pillsbury planning minimum for water management.

Proposed Schedule

PG&E will implement the revised RPA flows (Table 1-1) upon FERC issuance of an amendment order. PG&E requests that the amendment order be issued no later than April 15, 2025. This will allow PG&E to implement the revised flow schedule included in Table 1-1 above without delay. If approval is delayed, PG&E would need to continue to operate in compliance with Article 52, which would require PG&E to request temporary flow variances to protect Project facilities and ESA-listed species in the Eel River.

On September 27, 2024, SWRCB staff filed a letter with FERC which notes the Board's determination that a water quality certification (WQC) is necessary for PG&E's proposed amendment due to the potential for increased discharges to navigable waters and therefore, the

California State Water Resources Control Board (SWRCB) has requested PG&E to file an application for a Clean Water Act 401 Water Quality Certificate.

PG&E and other resource agencies met with the SWRCB on November 13, 2023, and August 16, 2024, to demonstrate that the amendment action before FERC proposes minimum flows that were previously analyzed as part of the inclusion of the RPA in the 2004 amendment, and would provide multiple water quality benefits by conserving storage in Lake Pillsbury, which improves water quality and reduces water temperature in the Eel River between Scott and Cape Horn dams. The revised flow regime proposed in this amendment application is an alteration of flows within the bounds of the flow regime authorized in the existing license and does not propose to increase these flows.

PG&E has reviewed the SWRCB's letter and previous comments and has concluded that the proposed action is not an "activity . . . which may result in any discharge" within the meaning of section 401 of the CWA because the amendment application does not propose an increase in any discharge currently authorized under the existing license. *Alabama Rivers Alliance v. FERC*, 325 F.3d 290 (D.C. Cir. 2003) (stating that a proposed amendment that "reduces – and thus simply alters – a discharge" does not require certification); *North Carolina v. FERC*, 112 F.3d 1175, 1187-1188 (D.C. Cir. 1997) (finding that a reduction in the amount of water released at the project dam as a result of water withdrawals would merely alter an existing discharge and did not require certification).

However, in an effort to continue to move this amendment application forward, PG&E held a pre-filing meeting with the SWRCB on December 5, 2024, and intends to submit a WQC application to ensure there is no delay given the SWRCB's one-year period to act should the Commission disagree with PG&E's position. If the Commission determines that the amendment application is not proposing an increase in existing discharges and a WQC is not required, PG&E requests that any conditions included in a certification be included in the amendment order only if consistent with the Federal Power Act and supported by Commission staff's analysis.

Exhibit E: Environmental Report

Title 18 of the Code of Federal Regulations (CFR) § 4.201(c) states that the application for a non-capacity license amendment "must contain those exhibits that require revision in light of the nature of the proposed amendments." 18 CFR § 4.51(f) states that Exhibit E, the Environmental Report, must only contain information commensurate with the scope of the proposed action. Therefore, based on the scope of the amendment of license and consultation with FERC, PG&E has included the following in Exhibit E:

- Project Introduction and Purpose of the Environmental Report
- Compliance with Statutory and Regulatory Requirements
- Consequences of License Application Denial

- No Active Alternative
- Proposed Action
- Affected Environment and Potential Effects
- Cumulative Effects
- References
- Consultation Record

Other License Exhibits

No other changes to the existing 1983 License exhibits are subject to changes based on the non-capacity amendment application content.

End of Non-Capacity Amendment Application

ENCLOSURE 3

Exhibit E – Environmental Report
for Application for Non-Capacity License Amendment

Potter Valley
Hydroelectric Project
FERC Project No. 77



Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612

January 2025

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Pacific Gas and Electric Company

Exhibit E for
Application for Non-Capacity License Amendment

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Appendices

- Appendix E-1 2002 National Marine Fisheries Service (NMFS) Reasonable and Prudent Alternative (RPA) (Redline).
- Appendix E-2 Consultation Record

List of Acronyms and Abbreviations

AF	.....	acre-feet
BiOp	.....	Biological Opinion
CDFG	.....	California Department of Fish and Game
CDFW	.....	California Department of Fish and Wildlife
cfs	.....	cubic feet per second
CFR	.....	code of federal regulations
CWA	.....	Clean Water Act
EBRR	.....	East Branch Russian River
ESA	.....	Endangered Species Act
EFH	.....	Essential Fish Habitat
FERC	.....	Federal Energy Regulatory Commission
mi ²	.....	square miles
MW	.....	megawatt
MNF	.....	Mendocino National Forest
NMFS	.....	National Marine Fisheries Service
PAD	.....	Pre-Application Document
PG&E	.....	Pacific Gas and Electric Company
Potter Valley Project or Project	.....	Potter Valley Hydroelectric Project
PVID	.....	Potter Valley Irrigation District
RPA	.....	Reasonable and Prudent Alternative
RVIT	.....	Round Valley Indian Tribes
SWRCB	.....	State Water Resources Control Board
USACE	.....	United States Army Corps of Engineers
USFWS	.....	U.S. Fish and Wildlife Service
USFS	.....	U.S. Forest Service
USEPA	.....	U.S. Environmental Protection Agency
WQC	.....	water quality certification

1.0 Introduction

Pacific Gas and Electric Company (PG&E) is the owner, operator, and licensee of the 9.2-megawatt (MW) Potter Valley Hydroelectric Project (Potter Valley Project or Project), Federal Energy Regulatory Commission (FERC) Project No. 77. The current Project license was issued in 1983 (25 FERC ¶ 61,010) and was amended by FERC in 2004 (FERC 2004a). The license expired on April 14, 2022, and PG&E continues to operate the Project under an annual license (Notice of April 21, 2022, Authorization for Continued Project Operation). On March 22, 2023, PG&E informed FERC the Potter Valley Project will no longer be producing power (PG&E 2023a). On July 8, 2022, PG&E informed FERC of the plan and schedule for filing a surrender application and decommissioning plan.¹ During the interim period until Project decommissioning is authorized and commences, PG&E's expired license conditions remain in effect. Pursuant to 18 Code of Federal Regulations (CFR) Section (§) 4.201, PG&E is filing this non-capacity license amendment application to modify the existing minimum flow requirements under Article 52 of the license for the Potter Valley Project, which is a major existing waterpower project greater than 5 MW.

1.1 Procedural History

The original license for the Potter Valley Project was issued effective April 15, 1922, and expired on April 14, 1972. From 1972 to 1983, the Project operated on annual licenses during the extended relicensing period, with the Project license issued in 1983. The 1983 Potter Valley Project license expired on April 14, 2022. On January 25, 2019, PG&E filed a Notice of Withdrawal of its Notice of Intent (NOI) and Pre-Application Document (PAD) with FERC.² On May 11, 2022, FERC directed PG&E to provide a plan and schedule for submitting a Surrender Application by July 11, 2022.³ In response, PG&E filed a proposed plan and schedule on July 8, 2022.⁴ The plan and schedule stated that PG&E will file a Surrender Application and Decommissioning Plan with FERC within 30 months after FERC approval of the proposed plan and schedule. FERC accepted PG&E's proposed plan and schedule on July 29, 2022.⁵ On June 6th, 2024, PG&E filed an updated schedule FERC with PG&E's Final License Surrender Application being due to FERC July 2025. FERC found PG&E's new schedule acceptable in a letter dated July 1, 2024. Therefore, the deadline for filing of the Surrender Application and Decommissioning Plan is July 29, 2025. PG&E continues to operate the Project under an annual license (Notice of April 21, 2022, Authorization for Continued Project Operation).

The procedural history related to minimum flows dates to 1983. The 1983 expired license is based on a contested 1983 Settlement Agreement. At the time, parties to the 1983 Settlement

¹ eLibrary Accession No. 20220708-5267

² eLibrary Accession No. 20190125-5100

³ eLibrary Accession No. 20220511-3004

⁴ eLibrary Accession No. 20220708-5267

⁵ eLibrary Accession No. 20220729-3016

Agreement included PG&E, California Department of Fish and Wildlife (CDFW; formerly known as California Department of Fish and Game), the counties of Humboldt, Mendocino, and Sonoma, the Mendocino County Russian River Flood Control and Water Conservation District (Mendocino Flood Control), and the Sonoma County Water Agency (Sonoma Water). As noted in FERC's Order Amending License (FERC 2004a), principal concerns of the 1983 Settlement Agreement, as they are today, continue to be the Project's impacts on Eel River salmon and steelhead, which are now listed as threatened under the Endangered Species Act (ESA)⁶ and the availability of water for multiple purposes in the Russian River Basin.

Pursuant to the 1983 Settlement Agreement, the license contains Articles 38 and 39 which were the genesis of FERC's Order Amending License (FERC 2004a), in which Article 52 (Federally Threatened Salmonids) was added to the license, and required PG&E to submit a plan by August 1, 2004 to implement the National Marine Fisheries Service's (NMFS) Reasonable and Prudent Alternative (RPA), and Reasonable and Prudent Measures, which can be found in the Biological Opinion (BiOp) filed by the NMFS on the Potter Valley Project docket on December 2, 2002.

On January 28, 2004, FERC issued an order amending the Potter Valley Project license (2004 Amendment, FERC 2004a) to incorporate the terms of the NMFS RPA. In 2006, PG&E further adjusted operations to comply with the terms of the license, including full implementation of the RPA. From 2013 to 2022, PG&E operated under flow variances 7 out of 10 years due to insufficient water supply to meet license-required releases (see Table 1-1). On March 16, 2022, NMFS requested that FERC amend the license to incorporate interim protective measures to minimize and avoid further take of threatened salmonids, pending the license surrender proceeding⁷. On February 9, 2024, PG&E sent a letter of intent (LOI) to NMFS, USFWS, CDFW, and RVIT agreeing to a modified suite of interim protective measures (IPMs; PG&E 2024b). On February 16, 2024, NMFS responded to PG&E that the modified IPMs were consistent with the intent of the 2022 letter (NMFS 2024). The measures outlined in the LOI were implemented as part of the 2024 temporary flow amendment and will be continued while PG&E implements the surrender and decommissioning plan.

In 2023, PG&E determined that the seismic risk to Scott Dam was greater than previously understood. To reduce the seismic risk, PG&E implemented a reservoir restriction, reducing the water storage capacity from approximately 76,000 acre-feet (AF) to 56,000 AF (a maximum storage reduction of roughly 20,000 AF). With the reservoir restriction, potential storage will be reduced, further compounding the challenges to meet RPA flows and the biological objectives intended by the RPA flows, specifically water temperature of Scott Dam releases to the Eel River.

On March 17th, 2023, PG&E informed the California Department of Water Resources, Division of Safety of Dams (DSOD) and FERC of PG&E's decision to impose a reservoir restriction of

⁶ 16 U.S.C. §§ 1531-43.

⁷ eLibrary Accession No. 20220317-5064

1,900 feet (PG&E datum) to reduce the seismic risk to Scott Dam. In a letter to PG&E dated April 12, 2023, DSOD concurred with PG&E's analysis and remedial actions, and instituted an operation restriction, requiring the spill gates to remain open year-round indefinitely, reducing the storage capacity in Lake Pillsbury by approximately 20,000 AF (DSOD 2023). In a letter from FERC to PG&E dated April 28, 2023, FERC agreed with the DSOD finding⁸.

In 2023 and 2024, PG&E requested flow variances to support cooler water temperature releases from Lake Pillsbury due to changes in operations resulting in lower water storage. On July 31, 2023, PG&E submitted a request for a long-term variance of the minimum flow requirements, beginning in 2024 and continuing until decommissioning of the Potter Valley Project. On October 4, 2023, FERC issued a Request for Additional Information requesting that PG&E initiate the license amendment process to revise the license flows⁹.

1.2 Existing Facilities

The Potter Valley Project is located on the Eel River and East Branch Russian River in northern California (Figure 1-1; Figure 1-2). The uppermost portion of the Project includes Scott Dam and the storage reservoir it impounds, Lake Pillsbury, which are on the Eel River. Below Scott Dam, the Eel River flows approximately twelve miles to Van Arsdale Reservoir, created by Cape Horn Dam. At Van Arsdale Reservoir, water is diverted and conveyed to the Potter Valley Powerhouse, which is located on the East Branch Russian River, in the Russian River Watershed. Cape Horn Dam has upstream and downstream fish passage facilities, enabling salmon and steelhead to use the reach of Eel River between Cape Horn and Scott dams. There are no fish passage facilities at Scott Dam (FERC 2004a).

Due to the limited nature of the non-capacity amendment application, a detailed description of existing facilities under FERC jurisdiction is not included herein but can be found in Section 4.5 of the Pre-Application Document (PAD; PG&E 2017a). Detailed specifications for each dam and powerhouse feature are within Table 4-1 and 4-2 of the PAD. Geographic overviews, land ownership, recreation facilities, and depictions of existing facilities can be found in Map 4-1 through 4-7 of the PAD.

1.3 Existing Operations

Potter Valley Project existing operations are limited to delivering required minimum flows for species protection, as the powerhouse has been offline since the summer of 2021. At Lake Pillsbury, water releases are made from Scott Dam through the low-level outlet.

In 2023, PG&E implemented remedial actions, further reducing storage based upon the results of further seismic analysis, under the 1983 FERC license Safety and Adequacy section. Specifically, Article 45 requires PG&E to "take such remedial action as may be necessary to

⁸ eLibrary Accession No. 20230428-3057

⁹ eLibrary Accession No. 20231004-3041

ensure the structural stability of the dam dependent upon the results of the current study.” In 2023, PG&E opened the Scott Dam spill gates permanently as the required remedial action to ensure the structural stability of Scott Dam based upon the results of the seismic studies. In a letter to PG&E dated April 12, 2023, the California Department of Water Resources, Division of Safety of Dams (DSOD), instituted an operational restriction of the reservoir to an elevation of 1,900 feet (PG&E datum), reducing the storage capacity in Lake Pillsbury by approximately 20,000 AF (DSOD 2023). In a letter from FERC to PG&E dated April 28, 2023, FERC concurred with PG&E’s decision and DSOD’s reservoir restriction.¹⁰

At Van Arsdale Reservoir, water is either released from or spills over Cape Horn Dam, where it flows northwest in the Eel River approximately 150 miles to the Pacific Ocean, or it is conveyed south by tunnel and penstock to the Potter Valley Powerhouse. The Potter Valley Powerhouse is in the upper Russian River Basin and is the source of much of the water in the East Branch Russian River (EBRR). The EBRR flows south to Lake Mendicino before joining with the mainstem Russian River, which also drains into the Pacific Ocean. Historically, an average of about 160,000 AF were diverted annually from the Eel River Basin into the Russian River Basin (FERC 2004a), but in recent years it has been much less.

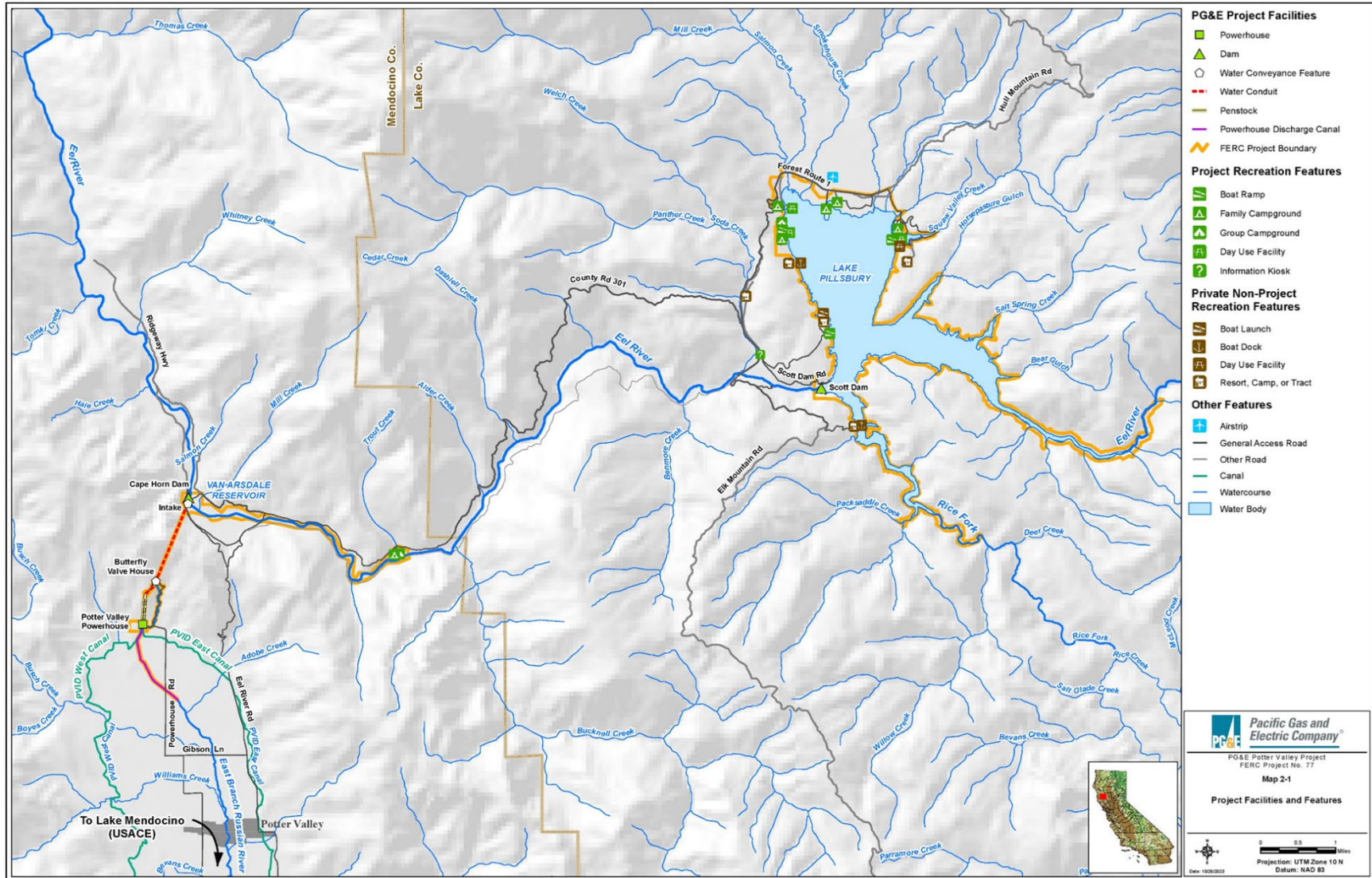
Except for the impetus of this license amendment application, the Project is operated in compliance with existing regulatory requirements. Section 4.6 of PG&E’s 2017 PAD (PG&E 2017a) summarizes water management, regulatory requirements, water rights, and water supply agreements associated with the Potter Valley Project.

1.4 Purpose and Need of Proposed Action

Article 52 requires PG&E to comply with the RPA provided in the U.S. Department of Commerce’s NMFS’s 2002 BiOp to prevent jeopardy to the threatened salmonids in the Eel River Basin. Therefore, PG&E is seeking a non-capacity license amendment for the Potter Valley Project to modify the existing minimum flow requirements under Article 52 of the license (Proposed Action or Proposed Amendment).

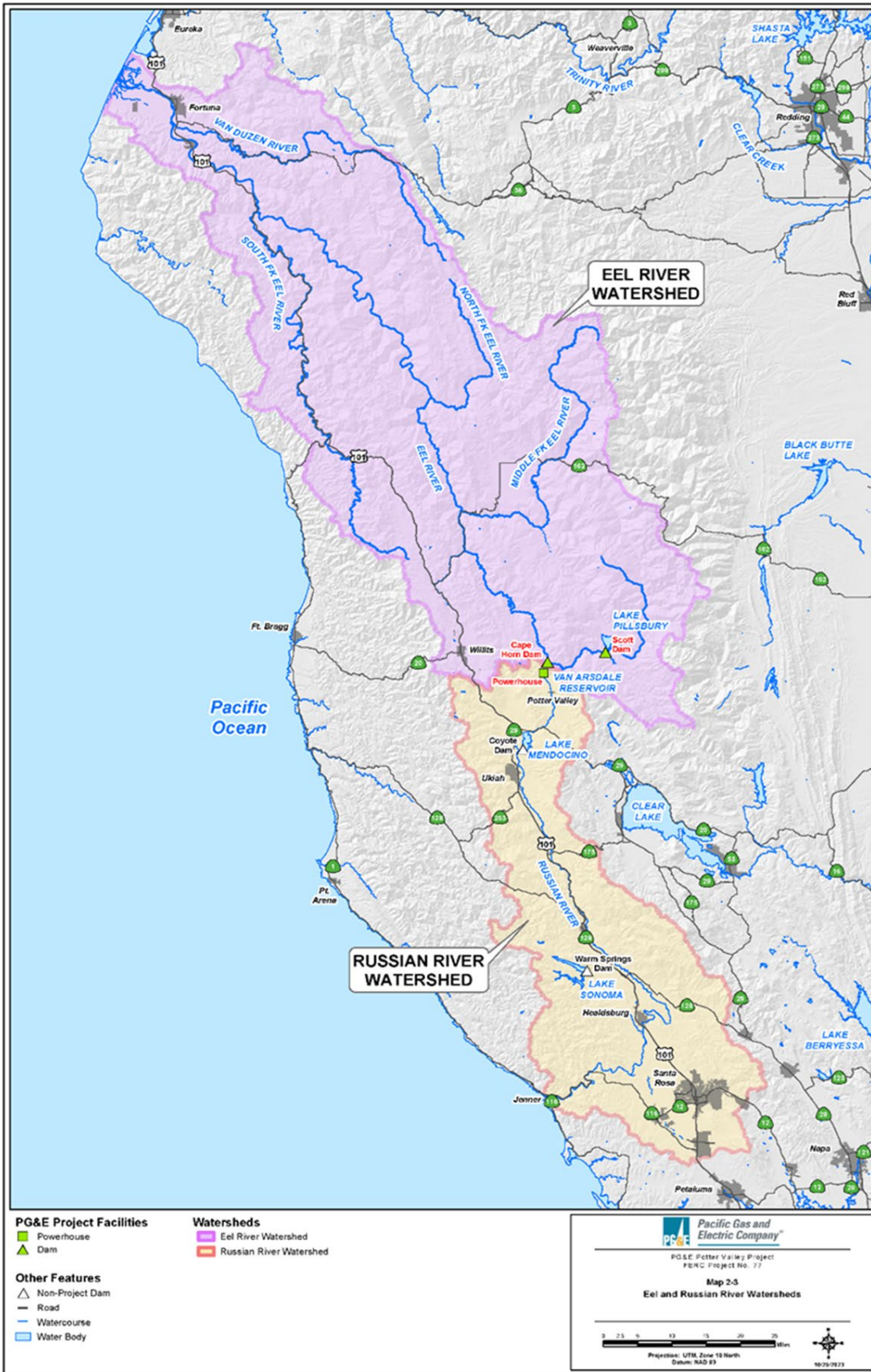
¹⁰ FERC Accession No. 20230428-3057

Potter Valley Hydroelectric Project
 FERC Project No. 77



Source: PG&E (2017a).

Figure 1-1. Potter Valley Project Facilities and Features.



Source: PG&E (2017a).
Figure 1-2. Eel and Russian River Watersheds.

1.4.1 General Statement of Need

Since 2004, it has become increasingly challenging for PG&E to maintain compliance under Article 52. From 2013 to 2022, PG&E requested, and FERC granted, flow variances 7 out of 10 years due to insufficient water supply (Table 1-1). In 2023 and 2024, PG&E requested flow variances to support cooler water temperature releases from Lake Pillsbury. The need for these variances was compounded due to changes in operations required by the reduced water storage in Lake Pillsbury caused by the seismic risk analysis, DSOD reservoir restriction, and FERC concurrence of that restriction. The cumulative number of and repetitive nature of these flow variance requests has demonstrated that the current flow regime under Article 52 does not provide adequate resource protection within the operational limitations and factors affecting the Potter Valley Project's existing operations, particularly with the recently imposed Lake Pillsbury storage restriction.

Table 1-1. History of Article 52 Minimum Flow Variances Related to Water Supply.

FERC VARIANCE APPROVAL DATE	FERC RESPONSE	ACCESSION NO.
06/27/2024	FERC Order approving temporary variance request PG&E submitted on February 21, 2024. The FERC order required that PG&E submit monthly storage reports for the duration of the temporary variance.	20240627-3024
10/02/2023	Order Approving Temporary Variance of Flow Requirements Under License Article 52	20231002-3083
07/27/2022	Order Modifying and Approving Temporary Variance of Flow Requirements Under License Article 52	20220727-3048
05/05/2021	Order Modifying and Approving Temporary Variance of Flow Requirements Under License Article 52	20210505-3050
04/30/2020	Order Modifying and Approving Temporary Variance of Flow Requirement under License Article 52	20200430-3022
07/15/2016	Order Granting Temporary Variance of Minimum Flow Requirements Under Appendix A of the January 28, 2004 Order Amending License	20160715-3016
12/01/2015	Order Approving Extension of Temporary Variance of Minimum Flow Requirement	20151201-3030
06/18/2015	Order Granting Temporary Variance of Minimum Flow Requirements under Appendix A of the 1/28/04 Order Amending License	20150618-3052
05/18/2015	Order Granting Temporary Variance of Minimum Flow Requirements Under Appendix A of the January 28, 2004 Order Amending License	20150518-3039
12/12/2013	Order granting temporary variance of Minimum Flow Requirements	20131212-3044

Source: FERC (2024).

1.5 Document Purpose and Use

The purpose of this environmental report is to provide information to FERC regarding the Proposed Action's environmental effects, including a summary of PG&E's compliance with statutory and regulatory requirements and an analysis of potential environmental effects.

1.6 Compliance and Statutory and Regulatory Requirements

The Proposed Action is subject to the requirements for non-capacity license amendments pursuant to 18 CFR § 4.201(c). The Proposed Action does not involve construction of a new dam or diversion, will not result in a significant change in the normal maximum surface area or elevation of an existing impoundment or involve the addition of new waterpower turbines. In accordance with 18 CFR § 4.38(a)(6)(v), the Proposed Action is not subject to pre-filing consultation requirements. Pursuant to 18 CFR § 4.201(a), further details describing the Proposed Action are provided below.

1.6.1 Section 401 of the Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. Under Section 401 of the CWA, a licensee must obtain water quality certification (WQC) from the appropriate state pollution control agency, verifying compliance with the CWA. The California State Water Resources Control Board (SWRCB) is the issuing agency. A WQC was not issued for the Potter Valley Project 1983 FERC license or the 2004 amendment.

The SWRCB has requested PG&E to file an application for a CWA 401 WQC (SWRCB 2024c). PG&E and other resource agencies met with the SWRCB on November 13, 2023, and August 16, 2024, to demonstrate that the amendment action before FERC proposes minimum flows that were previously analyzed in the 2002 NMFS Biological Opinion and provides multiple water quality benefits by preserving storage in Lake Pillsbury, which improves water quality and reduces water temperature in the Eel River between Scott and Cape Horn dams. The revised RPA flow regime stays within the bounds of the original RPA flow regimes and does not increase or cause any addition to the discharges authorized in the 2004 amendment. In addition, as this Exhibit E demonstrates, the water quality conditions are improved compared to the No Action Alternative under the flows shown in Table 2-1 below.

As discussed in Section 1.3, PG&E established a 10-foot reservoir restriction (approximately 20,000 AF storage reduction) in 2023 to comply with license Article 45 (Section 1.3). There are no license requirements for operating the Scott Dam spill gates or specific reservoir elevation requirements under the Project license. Under pre-2023 operations, the Scott Dam spill gates were open during the winter months (November 1st through April 1st of each water year), in accordance with the Scott Dam Certificate of Approval (CA DWR DSOD, 1978). Because most of the reservoir spill occurs during the winter and early spring when the gates are open, leaving the gates open after April 1st as now required by DSOD does not significantly increase the frequency or intensity of discharge from Lake Pillsbury to the Eel River. The 1983 license and

2004 amendment do not impose any requirements or limitations related to the gates and therefore do not limit PG&E's ability to spill in all months.

Therefore, PG&E does not support the SWRCB position that the FERC non-capacity license amendment results in the need for Clean Water Act 401 Certificate because the changes in Project operations have the potential to result in increased discharges to navigable waters. However, in an effort to ensure the SWRCB is aligned with PG&E's assessment, PG&E will submit a WQC application for concurrence from the SWRCB.

1.6.2 Federal Endangered Species Act of 1973

Section 7(a)(2) of the ESA requires FERC to consult with the U.S. Fish and Wildlife Service (USFWS) and NMFS to ensure that the Proposed Action is not likely to jeopardize the continued existence of federally listed endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. No ESA-listed species managed by the USFWS are expected to be impacted by the Proposed Action.

There are three (3) federally listed threatened salmonid species managed by NMFS known to occur in the Eel River within the vicinity of the Potter Valley Project; Southern Oregon/Northern California Coasts (SONCC) coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon (*O. tshawytscha*), and Northern California (NC) steelhead (*O. mykiss*).

On January 28, 2004, FERC issued an order amending the Potter Valley Project license (2004 Amendment, FERC 2004a) to incorporate the terms of NMFS's Reasonable and Prudent Alternative (RPA), and Reasonable and Prudent Measures, which can be found in the Biological Opinion (BiOp) filed by NMFS on December 2, 2002. In 2006, PG&E further adjusted operations to comply with the terms of the license, including full implementation of the RPA.

PG&E currently operates the Project under an annual license in compliance with license conditions, including the RPA and a modified suite of IPMs, as requested by NMFS in their March 2022 letter. The Proposed Action does not propose to change RPA flow conditions in the Eel River below Cape Horn Dam or prescribe flows below Scott Dam that are inconsistent with the 2002 BiOp.

1.6.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act requires FERC to consult with the NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH).

Effects of the Project on salmon EFH are those associated with streamflow diversion that significantly reduce water flows in the Eel River and increase water flow in the Russian River (NMFS 2002). The Proposed Action would reduce diversions to the EBRR during late-spring and summer months to support cooler water temperature releases from Lake Pillsbury. This

would reduce available habitat in the Eel River between Project dams through the reduction in diversion flows while at the same time improving habitat conditions by reducing water temperature of releases from Lake Pillsbury in late summer. Adult Chinook salmon spawn in the Eel River from October – January, and juveniles outmigrate to the ocean during spring (typically April – June) as flows decline, and water temperature increases. Therefore, salmon EFH is not expected to be impacted by the Proposed Action.

1.6.4 National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act requires that every federal agency “take into account” how each of its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (NRHP). The Proposed Action will not affect any historic or cultural resources.

1.7 Consequences of License Amendment Application Denial

As described above in Section 1.4.1, *General Statement of Need*, PG&E is seeking a non-capacity license amendment for the Potter Valley Project to modify the FERC license conditions under Article 52. If the license amendment application is denied, PG&E will either comply with Article 52, resulting in potentially significant impacts to ESA-listed species, recreational access to Lake Pillsbury, and Project facilities, or continue to request annual temporary flow variances.

2.0 Proposed Action

2.1 No Action Alternative

Under the No Action Alternative, the Potter Valley Project would continue to operate in compliance with Article 52, which would require PG&E to request temporary flow variances to protect Project facilities and ESA-listed species in the Eel River.

2.2 Proposed Action

PG&E proposes amending FERC License Article 52 to (i) modify the minimum instream flows in the East Branch Russian River (EBRR), (ii) alter the minimum flow below Scott dam, (iii) adjust block water allocation from water year to calendar year, and (iv) define mean daily flow as the measurement by which compliance is determined. The Proposed Action does not propose to change RPA flow conditions below Cape Horn Dam or prescribe flows below Scott Dam that are inconsistent with the 2002 BiOp. Please refer to Appendix E-1, *2002 National Marine Fisheries Service (NMFS) Reasonable and Prudent Alternative (RPA) (Redline)*, showing changes to portions of the RPA language which support the amendment description below.

2.2.1 Minimum Stream Flows in the EBRR

The proposed minimum EBRR flow schedule is included as Table 2-1. The minimum flow schedule shown in Table 2-1 updates the minimum flow schedule in 2002 RPA Section C.1 (Appendix E-1). PG&E's proposed amendments to Article 52 are aimed at preserving storage in Lake Pillsbury throughout the spring and summer to maintain facility safety and to support cooler water temperature flow releases from Scott Dam into the Eel River during the late summer.

PG&E proposes to maintain the minimum EBRR flows as required in the RPA during the wet season (October 1 to April 14). In the spring (April 15 to June 30), PG&E proposes maintaining RPA flows as long as Lake Pillsbury is spilling as the diversions during spill do not impact reservoir storage and cold water pool. Once Scott Dam is no longer spilling, PG&E proposes to shift to the most conservative flow regime (Critical) to preserve storage into summer, in all years. The Critical flow regime also applies during the summer (July 1 to September 30). The proposed minimum flows in the EBRR fall within the existing flow ranges analyzed in the 2002 NMFS Biological Opinion and prescribed by the RPA (EBRR minimum flows range from 5 cfs to 75 cfs).

Table 2-1. Minimum Flow of the East Branch Russian River (MF16).

PERIOD		CLASSIFICATION		
From	Through	Normal	Dry	Critical
October 1	April 14 ¹	35 cfs	35 cfs	5 cfs
April 15	May 14	Scott Dam in Spill Condition²:		
		35 cfs	25 cfs	5 cfs

		Scott Dam not in Spill Condition²:		
		5 cfs	5 cfs	5 cfs
May 15	June 30	Scott Dam in Spill Condition²:		
		75 cfs	25 cfs	5 cfs
		Scott Dam not in Spill Condition²:		
		5 cfs	5 cfs	5 cfs
July 1	September 30	5 cfs	5 cfs	5 cfs

Note: MF = minimum flow compliance point

¹ Flows from October 1-April 14 remain unchanged from the RPA flows.

² Scott Dam spill is defined as when Lake Pillsbury water surface elevation is above an elevation of 1,900.0 feet, based on the PG&E datum.

Table 2-1 flows are further described below:

DURING SPILL AND NON-SPILL CONDITIONS AT SCOTT DAM

October 1st through April 14th: The proposed flow regime for the wet season follows the 2002 RPA flows, but changes the timing by approximately 14 days, from 2002 RPA date of September 16th to proposed date of October 1st.

DURING SPILL CONDITION AT SCOTT DAM¹¹

April 15th through May 14th: The proposed flow regime follows the 2002 RPA flows for Normal, Dry and Critical water years with the spill status as an additional qualifying condition.

May 15th through June 30th: The proposed flow regime follows the 2002 RPA flows for Normal, Dry and Critical water years with the spill status as an additional qualifying condition, and the calendar term duration is modified from the 2002 RPA May 15th through September 15th to proposed dates of May 15th to June 30th.

July 1st through September 30th: The proposed minimum flows in the EBRR are 5 cfs, regardless of water year type.

DURING NON-SPILL CONDITIONS AT SCOTT DAM

April 15th to September 30th: The proposed minimum flows in the EBRR are 5 cfs, regardless of water year type.

¹¹ When Lake Pillsbury water surface elevation is above 1,900.0 feet (PG&E Datum).

2.2.2 Flows Below Scott Dam

PG&E proposes amending Article 52 to modify the minimum instream flows below Scott Dam (MF02), as measured at compliance gage E-2, regardless of calendar date or water year type, to 20 cfs (RPA Section B.1). The revision of minimum flows to 20 cfs in the Eel River below Scott Dam is consistent with the 2002 RPA flow during Critical water years and represents flows necessary to support Table 2-1. The amendment will remove the Dry and Normal water year classifications of 40-100 cfs. It should be noted that in practice, minimum flows would never be as low as 20 cfs due to facility limitations and the combined flow requirements of the Eel River downstream of Cape Horn Dam (gage E11), EBRR, and PVID water deliveries.

2.2.3 Flows Below Cape Horn Dam

No changes are proposed to the 2002 RPA flows below Cape Horn Dam.

2.2.4 Mean Daily Flow as Compliance Measurement

PG&E proposes amending Article 52 to include a definition of compliance with minimum flows to be the mean daily flow as the “calculated 24-hour average of the flow” (RPA Sections A and C.1).

3.0 Affected Environment and Potential Effects

3.1 Introduction

This Exhibit E to the license amendment application was prepared pursuant to FERC's regulations at 18 CFR § 4.201(c), which states that only exhibits in the existing license that require revisions considering the Proposed Action are required to be updated in this license amendment application. PG&E has evaluated the resource areas that would be potentially impacted by the Proposed Action, including geology and soils, hydrology and water resources, aquatics, botanical, cultural and tribal, recreation, aesthetics, and socioeconomics. As stated previously, resource areas that are potentially affected by the Proposed Action have been analyzed in detail, while resources that are unlikely to be affected by the Proposed Action have been analyzed in brief, and resources that are not affected have not been analyzed. As the Proposed Action does not have any proposed ground-disturbance or construction activities, air quality, noise, and transportation have not been analyzed as part of this Exhibit E.

Table 3-1. Exhibit E Extent of Resource Analysis.

RESOURCE AREA	ANALYZED IN DETAIL	ANALYZED IN BRIEF	NOT ANALYZED IN THIS EXHIBIT E
Aesthetics		X	
Terrestrial		X	
Botanical		X	
Aquatic	X		
Cultural and Tribal		X	
Geology and Soils		X	
Hydrology and Water Resources	X		
Recreation	X		
Land Use		X	
Socioeconomic		X	
Noise			X
Transportation			X
Air Quality			X

3.2 Scope of Analysis

The geographic scope of this analysis is primarily limited to the FERC-approved Potter Valley Project Boundary, including Lake Pillsbury, Scott Dam, the Eel River from Trout Creek Campground to Cape Horn Dam including Van Arsdale Reservoir, Cape Horn Dam, Diversion Tunnel No. 1, Potter Valley Powerhouse, and the Potter Valley Powerhouse Discharge Canal. However, some sections will generally analyze impacts outside of the FERC Project Boundary, as needed, including the portions of EBRR and the reach of the Eel River between Scott Dam and Trout Creek Campground (Figure 1-1). The temporal scope of this environmental analysis focuses on the period from the FERC Order implementing this amendment until the implementation of a License Surrender Order and the commencement of Project decommissioning activities.

Resources potentially affected by this amendment proposal include terrestrial resources, aquatic resources including threatened and endangered species, hydrology and water resources, and recreation.

3.3 General Environmental Setting

The Potter Valley Project is in northern California, in Lake and Mendocino counties, within the Eel River and Russian River watersheds (Figure 1-2). The associated reservoirs, Lake Pillsbury and Van Arsdale, are in the Eel River Watershed. Lake Pillsbury is the Potter Valley Project's storage reservoir. Downstream of Lake Pillsbury, the Eel River flows approximately 12 miles to Van Arsdale Reservoir. At Van Arsdale Reservoir, water is diverted and conveyed to the Potter Valley Powerhouse, which is located on the EBRR, in the Russian River Watershed. Releases made from both Lake Pillsbury and Van Arsdale Reservoir support salmon and steelhead populations in the upper Eel River Watershed. Releases from the powerhouse are a significant source of water in the EBRR and for local water users (PG&E 2017a).

The EBRR flows south from the Potter Valley Powerhouse for approximately 11 miles¹² and is impounded by the U.S. Army Corps of Engineers' (USACE) Coyote Dam to form Lake Mendocino. Water from Lake Mendocino is used in Mendocino and Sonoma counties for irrigation, municipal and domestic water supply, recreation, and support of salmon and steelhead populations in the Russian River. Water leaving Lake Mendocino converges with the mainstem of the Russian River and ultimately flows into the Pacific Ocean near Jenner. The Project and the location of the primary Project facilities are shown on Figure 1-1.

As noted in PG&E's 2017 PAD, the Eel River is the third largest watershed in California. The mainstem of the Eel River is 197 miles long, has a drainage area of 3,684 square miles (mi²) and a mean annual discharge of 6.5 million AF. The Russian River Watershed is less than half the size of the Eel River Watershed and has a drainage area of approximately 1,484 mi². A more detailed description of the Eel and Russian River watersheds, major land uses in each watershed, and dams and diversions can be found in the PAD (PG&E 2017a).

3.3.1 Aesthetics/Visuals

This section provides a description of the aesthetic (or visual) characteristics of the lands and waters surrounding the Potter Valley Project, including a summary description of facilities, water features, and scenic attractions. This section analyzes the Proposed Action's potential effects related to aesthetic resources. It describes the affected environment, summarizes the overall regulatory framework for aesthetic resources, and it analyzes the potential for the Proposed Action to affect these resources. As this resource area is unlikely to be affected by the Proposed Action, it is only being analyzed in brief.

¹² Potter Valley Powerhouse to the ordinary high-water mark of Lake Mendocino (Coyote Dam Spillway elevation at 764.8 feet above mean sea level).

3.3.1.1 Affected Environment

The Potter Valley Project is located on the Eel River and EBRR in Mendocino and Lake Counties, California. Most of the Potter Valley Project is located on lands owned by PG&E and lands administered by the United States Forest Service (USFS), Mendocino National Forest (MNF). The FERC Project Boundary encompasses approximately 3,515 acres (PG&E 2017a).

Land use and management activities on private land in the vicinity of Lake Pillsbury and Van Arsdale Reservoir are consistent with land management objectives and policies outlined in the Lake County General Plan and the Mendocino County General Plan, and related county ordinances. Lake Pillsbury is located on private property owned by PG&E and within the boundaries of the MNF. As such, land use and management in the vicinity of Lake Pillsbury is consistent with the goals, direction, and prescriptions described in the MNF Land and Resource Management Plan.

Portions of the Potter Valley Project are additionally subject to the USFS's Visual Management System prescriptions for aesthetic resources. A description of the visual character of the Eel and Russian River basins, existing Project facilities, and MNF can be found in Section 5.10.2.1 through 5.10.3.1 and Map 5.10-1 of the PAD (PG&E 2017a).

3.3.1.2 Environmental Effects

Effects on aesthetic resources are based on existing guidance and standards, impacts to visual management prescriptions set by Federal agencies with land jurisdiction over the Potter Valley Project, and land management objectives found in other state or local resource management plans. While the Project is subject to the USFS's Visual Management System prescriptions, the Proposed Action, a modification of Article 52 of the existing license, will have no effect on PG&E's ability to maintain the aesthetic (or visual) characteristics of the lands and waters surrounding the Project, or remain in compliance with all existing guidance, standards, and management prescriptions.

3.3.2 Terrestrial Resources

This section describes the terrestrial wildlife resources in the vicinity of the Potter Valley Project. In addition, this section describes rare, threatened, and endangered terrestrial wildlife resources in the vicinity of the Project. Note that only terrestrial wildlife resources are discussed in this section. Please refer to Section 3.3.4 – Aquatic Resources for a discussion of aquatic wildlife resources (i.e., fish, amphibians, and aquatic reptiles).

3.3.2.1 Affected Environment

The Project facilities are located within the upper Eel and Russian River watersheds in the Northern Coast Range mountains. Vegetation in this area is described in detail in Section 5.5.3.1 of the PAD (PG&E 2017a), specifically, Table 5.5-1 of the PAD lists vegetation alliances likely to occur within one mile of Project facilities. Common representative wildlife species

known to occur within these vegetation alliances are listed in Table 5.5-2 of the PAD (PG&E 2017a).

The PAD describes special status birds and mammals as well as game species in the Project vicinity in detail in Section 5.5.3.2 (PG&E 2017a).

3.3.2.2 Environmental Effects

The Proposed Action includes only flow changes with no direct ground disturbance or alterations of facilities or terrestrial habitat. Therefore, the Proposed Action is unlikely to affect terrestrial habitat.

3.3.2.3 Agency Coordination

PG&E held virtual meetings with Forest Service. A summary of this coordination is included in the Consultation Record table (Appendix E-2).

3.3.3 Botanical Resources

This section describes the botanical resources that have been documented to be present or have the potential to be present in the vicinity of the Potter Valley Project, including vegetation communities, wetland resources, special status plants, rare natural communities, and non-native invasive plants.

3.3.3.1 Affected Environment

Vegetation communities in the vicinity of the Project are described in PG&E's 2017 PAD in Section 5.4.3.1 and are shown spatially in Maps 5.4-1a and 5.4-1b (PG&E 2017a). Upland vegetation communities are not discussed further herein, as the Proposed Action will have no effects on upland vegetation. However, riparian and wetland vegetation in the Project vicinity have the potential to be impacted by modifications to minimum flows. These communities are summarized below.

3.3.3.1.1 Riparian and Wetland Vegetation

Along the Eel River between Scott Dam and Van Arsdale Reservoir, an approximately 12-mile reach, riparian vegetation occurs as thin bands (typically no more than 40 feet wide) along the water's edge (PG&E 2017a). For approximately two miles downstream of Scott Dam and the confluence with Soda Creek, the river valley floor is approximately 200 to 300 feet wide, but most of this is barren alluvial bars (see Map 5.4-1a and Map 5.4-1b of the PAD, PG&E 2017a). Farther downstream, the valley floor is narrower (approximately 100 feet wide) and the substrate is coarse, which precludes notable riparian vegetation establishment, until the upstream end of Van Arsdale Reservoir.

At Van Arsdale Reservoir, riparian vegetation continues as narrow bands along the channel until just upstream of Cape Horn Dam, where the reservoir alluvium supports wider (200 to 500 feet)

stands of riparian/wetland vegetation along the high-water's edge of the reservoir and on a mid-channel bar. These areas are likely dominated by dense alder and willow that is most equivalent to montane riparian vegetation. At Van Arsdale Reservoir, there is also 0.5 acre mapped as freshwater pond by the National Wetlands Inventory. Based on aerial imagery interpretation, it is unclear whether the freshwater pond, which is only 60 feet from the reservoir water's edge, is truly an isolated pond or rather a depressional area that is hydrologically connected to the reservoir (PG&E 2017a).

Along the EBRR, through the agricultural lands of Potter Valley, riparian habitat occurs as a corridor (100 to 200 feet wide) between mostly farmland. This corridor is mapped by CALVEG as Valley Oak Woodland (USFS 2016a). Downstream of Potter Valley to Lake Mendocino, CALVEG does not distinguish riparian vegetation from the surrounding montane hardwood (i.e., oak woodland) vegetation. Descriptions of riparian vegetation along the inland portions of the Russian River, which receive less precipitation and fog-cover than the coastal portions of the watershed, indicate that it is likely a mix of Fremont's cottonwood (*Populus fremontii*), willows (*Salix* spp.), and white alder (*Alnus rhombifolia*) (SCWA 2016, PG&E 2017a).

3.3.3.1.2 Invasive Plants

Invasive plants in the Project vicinity are described in Section 5.4.3.3 of the PAD (PG&E 2017a). The MNF maintains a database of invasive plant species documented for the regional forest (USFS 2016b). Only two species are documented within the FERC Project boundary or river reaches potentially affected by the Proposed Action: Scotch broom (*Cytisus scoparius*) and pennyroyal (*Mentha pulegium*) (J. Huhndorf, *pers. comm.*), which are common along the disturbed fringes of Lake Pillsbury (see Table 5.4-4 and Map 5.4-3 of the PAD, PG&E 2017a). Thirteen invasive species are documented within the Project vicinity and twenty-eight species have the potential to occur within the Project vicinity; Table 5.4-4 of the PAD summarizes known and potential invasive weed species that could or do occur within the Project vicinity (PG&E 2017a).

3.3.3.2 Environmental Effects

3.3.3.2.1 Riparian and Wetland Vegetation

The Proposed Action will reduce flows to the reach of the Eel River between Scott Dam and Van Arsdale Reservoir and to the EBRR from April 15 – September 30. The thin bands of riparian vegetation along the Eel River and EBRR may be affected by a reduction in summer flows with potential to result in narrowing of the river channel.

3.3.3.2.2 Invasive Plants

The Proposed Action will not result in an increase in disturbed areas around Lake Pillsbury. The reservoir elevation will continue to fluctuate within the historical range under the new baseline without gate operations. Therefore, the Proposed Action is unlikely to affect invasive plants.

3.3.3.3 Agency Coordination

PG&E held virtual meetings with Forest Service. A summary of this coordination is included in the Appendix E-2 Consultation Record table.

3.3.4 Aquatic Resources

This section describes the aquatic resources in the vicinity of the Potter Valley Project, including water quality, habitat (wetlands, rivers, reservoirs), and species (fish, reptiles, and amphibians). Terrestrial wildlife and plants are described in Sections 3.3.2 and 3.3.3, respectively. Hydrology and water resources as they relate to the rivers and reservoirs are described in Section 3.3.8.

3.3.4.1 Affected Environment

The Project is located within the Eel and Russian River watersheds of inland northern California.

3.3.4.1.1 Water Quality

The Mediterranean climate of northern California results in cool, wet winters and hot, dry summers. Most rain falls between November and March, and in some particularly cool winters, snow accumulates in the upper elevations of the Eel River watershed. River flows are strongly driven by periodic storm events and, in years with snowpack, runoff from melting snow. Lake Pillsbury typically fills in mid-winter with excess flows passed through the Scott Dam low-level outlet and/or over the dam as spill.

Detailed information on temperature conditions in the Eel River and Lake Pillsbury collected as part of the Summer Water Temperature Monitoring Program (2005–2023) can be found within individual monitoring reports listed in Table 3-2.

Table 3-2. FERC eLibrary Accession Numbers for Annual Summer Water Temperature Monitoring Program Reports from 2006 – 2023.

YEAR	ELIBRARY ACCESSION NUMBER	YEAR	ELIBRARY ACCESSION NUMBER
2005	20060706-0123	2015	20160701-5028
2006	20070709-0120	2016	20170630-5206
2007	20080626-0115	2017	20180629-5023
2008	20090623-5081	2018	20190628-5265
2009	20100630-5115	2019	20200626-5364
2010	20110706-5067	2020	20210629-5124
2011	20120626-5121	2021	20220629-5148
2012	20130628-5249	2022	20230627-5103
2013	20140630-5131	2023	20240628-5168
2014	20150630-5100	2024	To be filed in 2025

Note: Reports are filed the June immediately following the water temperature monitoring season (e.g., a 2005 monitoring season will have a June 2006 report submission date).

Source: FERC (2024).

Eel River water temperature immediately downstream of Scott Dam is typically lowest in early January (approximately 4°C), steadily increasing throughout the spring and summer to between 17 and 24°C (Figure 3-3). Water temperature monitoring in the EBRR is not specified in the annual Summer Water Temperature Monitoring Plan (PG&E 2005). Powerhouse outflow temperatures are likely similar to Eel River temperatures immediately upstream of Van Arsdale Reservoir (PG&E 2017a). A limited dataset of spot water temperature readings at the powerhouse ranged from 7.7°C (February) to 20.0°C (late June) during 2004–2005 (CEDEN 2016).

Outside of water temperature data, little comprehensive water quality data has been collected in the Project vicinity, available data collected under California’s Surface Water Ambient Monitoring Program (SWRCB 2024b) includes three stations in the Eel River between Van Arsdale Reservoir and Dos Rios, two stations in the EBRR between the Potter Valley Powerhouse and Lake Mendocino, and two stations in Lake Pillsbury (CEDEN 2016). Historical water quality data for Lake Pillsbury was reported as part of a national eutrophication survey conducted by the USEPA in 1975 (USEPA 1978) and an initial feasibility study for a Lake Pillsbury hypolimnion aeration system in 1982 (Ellison 1982). Both report Lake Pillsbury as eutrophic with diminished hypolimnetic dissolved oxygen (DO) levels during summer stratification. The 1975 USEPA survey also reports an observed algal bloom in the Rice Fork Arm of the reservoir in March and includes a personal communication citation that states fish kills are reported to be a problem in the lake. Further information regarding water quality in the Project vicinity can be found in Section 5.2.4 of the PAD (PG&E 2017a).

3.3.4.1.2 Aquatic Habitat

Section 5.3.5 of the PAD (PG&E 2017a) contains detailed information regarding aquatic habitat within Lake Pillsbury. The northern and eastern arms of the reservoir (particularly the northern) include shallow bays that have large areas where the maximum depth is ≤ 15 feet when the pool elevation is at the top of the spillway (1,900.0 feet, PG&E Datum). Only a very small portion of the reservoir (immediately upstream of the dam) consists of deep water, ≥ 65 feet deep, when the pool elevation is at the top of the spillway. Lake Pillsbury exhibits strong thermal stratification beginning late spring through early fall. The surface water (epilimnion) in the early summer is warm and the bottom water (hypolimnion) is relatively cold. By late summer/early fall, the hypolimnetic water is typically depleted due to the low level releases into the Eel River. Higher release rates from Scott Dam accelerates depletion of the cold water pool and increases the magnitude and duration of elevated water temperatures released from Scott Dam. Dissolved oxygen profiles, collected sporadically through the years (see data in Ellison 1982), indicate dissolved oxygen concentrations remained near air saturation in the surface waters of Lake Pillsbury (typical of reservoirs), but gradually declined in the hypolimnion through the early summer, reaching depletion by late July (PG&E 2017a).

More recently, PG&E deployed dissolved oxygen sensors near Scott Dam at various depths from approximately June through September. These data, collected annually since 2020, are reported in the individual Summer Water Temperature Monitoring Reports noted above in Table

3-2. The dissolved oxygen profiles show dissolved oxygen concentrations near the surface fluctuating from air saturation to supersaturation throughout summer, likely due to algae production, while dissolved oxygen concentrations at depth of approximately 9 meters can experience depletion as early as mid-July and can be hypoxic near the reservoir floor by mid-June. Aeration occurs as the water is released from the discharge structure (needle valve), which discharges the water in a jet spray into the Eel River and re-aerates the dissolved oxygen concentration to saturation.

The aquatic habitat in Lake Pillsbury generally consists of areas of shallower shoreline and flats without vegetative cover, and deeper open water areas (pelagic zone). Seasonal water level fluctuations in Lake Pillsbury generally preclude the development of large riparian vegetation or aquatic macrophyte (angiosperms) communities. Generally, the littoral zone (shallow photic zone where aquatic macrophytes could grow) provides little physical cover for aquatic species (PG&E 2017a).

Thermal stratification during the spring/summer/fall delineates the reservoir into a relatively large volume of warm water epilimnetic habitat suitable for warm water fishes (e.g., bass and sunfish) and a limited volume of colder metalimnion/hypolimnion habitat where coldwater fishes (e.g., rainbow trout) can live. The amount of these habitats varies with the volume of storage, inflow water temperature, reservoir discharge rates, and the hypolimnetic oxygen concentration (e.g., ≥ 7 mg; PG&E 2017a).

The Eel River flows 12 miles from Scott Dam (Lake Pillsbury) westward to Cape Horn Dam (Van Arsdale Reservoir) with an average slope of 29 feet per mile. The upper Eel River between Scott Dam and Outlet Creek (31 miles downstream of Cape Horn Dam) was broadly characterized by PG&E (PG&E 2012) as occupying a relatively narrow valley with little floodplain development. Riparian vegetation occurs as thin bands (typically no more than 40 feet wide) along the water's edge. High-quality spawning habitat for anadromous fish is maintained in the reach below Scott Dam due to the large quantity of gravel contributed by Soda Creek, located 1.1 miles downstream of the dam (SEC 1998). Summer water temperatures in the Eel River between Scott Dam and Van Arsdale Reservoir are colder during the late spring and summer than under unimpaired conditions due to the hypolimnetic releases from Scott Dam. The colder water during summer provides suitable rearing habitat for juvenile steelhead and, along with nutrients released from Lake Pillsbury, promote rapid fish growth (PG&E 2017a). After the cold water pool is depleted, late summer and fall water temperatures can be warmer in the Eel River between Scott and Cape Horn dams compared to unimpaired conditions.

Very little information is available to describe aquatic habitat conditions in the East Branch Russian River. In general, the river is of low gradient, dropping 23 feet/mile over the approximately 11-mile reach from Potter Valley Powerhouse to the ordinary high water mark of Lake Mendocino. Along this reach, the river runs through the agriculture lands of Potter Valley before entering an open canyon area above Lake Mendocino. A series of check dams within the valley portion of this reach are maintained to control streambank erosion (PG&E 2017a).

3.3.4.1.3 Aquatic Species

This section provides an overview of fish and aquatic resources in the vicinity of the Potter Valley Project. Detailed descriptions of fish and aquatic resources are provided the PAD in Section 5.3.4 (Eel River), Section 5.3.5 (Lake Pillsbury), Section 5.3.6 (Van Arsdale Reservoir) and Section 5.3.7 (East Branch Russian River) (PG&E 2017a). Below is a summary of these sections.

- The upper Eel River in the vicinity of the Potter Valley Project, downstream of Lake Pillsbury, provides aquatic habitat for several special status species, including federal ESA Threatened anadromous salmonids, Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*), California Endangered Species Act (CESA) Threatened summer steelhead (*O. mykiss*) and other Species of Special Concern such as lamprey (*Entosphenus tridentatus* and *Lampetra* sp.), foothill yellow-legged frog (*Rana boylei*), and northwestern pond turtle (*Actinemys marmorata*).
- Considerable historical data exists to characterize the fish and aquatic resources. Long-term monitoring of steelhead (1922 to present) and Chinook salmon (1946, 1947, 1950, and 1955 to the present) returning to the Van Arsdale Fisheries Station (VAFS) at Cape Horn Dam is available, as well as extensive monitoring and study of fishery resources (escapement, spawning, rearing, outmigration, pikeminnow) and habitat conditions (habitat vs. flow, water temperature, fish passage, fish entrainment) in the upper Eel River watershed from 1979 to the present (e.g., studies related to the 1983 FERC relicensing and post-relicensing studies).
- The Potter Valley Project modifies the aquatic habitat in the upper Eel River.
 - Lake Pillsbury (Scott Dam), a 77,000 AF water storage reservoir, provides habitat for lentic sport fishes such as largemouth bass (*Micropterus salmonids*), bluegill (*Lepomis macrochirus*), and rainbow trout (*Oncorhynchus mykiss*). Scott Dam blocks anadromous fish passage into the upper watershed and regulates flows in the Eel River during non-spill periods, modifying hydrologic characteristics (magnitude and timing of flows). Releases from the bottom of the reservoir provide cold water, as available, during the late spring through summer months for salmonid rearing in the Eel River downstream of the reservoir.
 - Van Arsdale Reservoir (Cape Horn Dam), located on the Eel River approximately 12 miles below Lake Pillsbury, is a relatively small run-of-river diversion pool where water is diverted through the trans-basin Potter Valley Tunnel to the Potter Valley Powerhouse, located in the East Branch Russian River Watershed. Imported water released from the powerhouse flows into Lake Mendocino, along with local runoff. Water from Lake Mendocino is used in Mendocino and Sonoma counties for irrigation, municipal and domestic water supply, recreation, and support of salmon and steelhead populations in the Russian River. As a result of Project

storage and diversions, hydrologic characteristics (magnitude and timing of flows) in the Eel River are modified below Cape Horn Dam, and flows in the East Branch Russian River are augmented.

- Minimum required streamflows have been established in the Eel River below Lake Pillsbury and below Van Arsdale Reservoir for the protection of Chinook salmon and steelhead populations, and in the East Branch Russian River to support a put-and-take rainbow trout fishery above Lake Mendocino. Prior to 1979, the year-round minimum streamflow requirement for the Eel River below Van Arsdale Reservoir was 2 cubic feet per second (cfs), but since 1979, more natural flow regimes have been implemented. The current minimum streamflow requirements, as established by the 2002 RPA, were designed to mimic the pattern and timing of the natural hydrograph with sufficient flows for fall and winter migration, spring outmigration, and summer rearing habitat.
- Water temperatures in the Eel River below Lake Pillsbury are colder during the late spring and summer than under unimpaired conditions when the reservoir's cold water pool isn't depleted. The cold water during summer provides highly suitable rearing habitat for juvenile steelhead. This, along with nutrients released from the reservoir, promotes rapid fish growth. However, cold water temperatures in spring can delay the outmigration of juvenile salmonids until a time when downstream temperatures are inhospitable. Pulse flow and warm surface water releases have been used to encourage timely juvenile salmonid outmigration. With the reservoir restriction resulting in 20,000 AF less storage, spills to the Eel River in spring months may be more frequent and of longer duration, more closely mimicking unimpaired river conditions. Downstream of Van Arsdale Reservoir, summer water temperatures in the Eel River warm rapidly to equilibrium levels, which results in habitat conditions that are marginal to lethal for juvenile steelhead within several miles below the reservoir.
- Fish passage (upstream and downstream) for migratory fish species has existed at Cape Horn Dam (Van Arsdale pool-and-weir ladder) since 1909, with modifications of the ladder to improve fish passage in 1915, 1962, 1987, and, most recently, experimental improvements for Pacific lamprey passage (2014 to 2016). A synopsis of passage/counts at VAFS is provided below:
 - Annual adult steelhead counts at VAFS between 1922 and the late 1950s were frequently above 3,000 to 4,000 fish. Since then, steelhead counts have typically been less than 1,000 to 2,000 fish and, in many years, less than 500 fish. Many factors have no doubt contributed to the observed declines in fish numbers at VAFS and elsewhere in the watershed, including logging, road construction, livestock grazing, agriculture (both legal and illegal), introduction of invasive species, natural flood events, and poor ocean conditions. In the late 1990s, a spike in steelhead numbers occurred, with 3 successive years ranging

from approximately 2,400 to 7,700 fish; however, the spike was heavily influenced by hatchery fish. Since 2008, only one hatchery steelhead has been present in the counts, which have ranged from 145 to 935 fish.

- Annual Chinook salmon counts at VAFS from 1946 (first year of recorded Chinook salmon counts) to the early 1980s were typically less than 100 fish, with many years having a count of zero. An exception to this was two successive years in the late 1940s that had over 900 fish. Low flows in the Eel River below Van Arsdale Reservoir prior to the 1979 instream flow modifications likely affected the number of Chinook salmon reaching VAFS. In the mid- to late-1980s, a spike in numbers occurred, ranging up to over 1,700 fish; however, counts dropped back to single digit levels during the early 1990s. Counts increased dramatically again beginning in the mid-1990s and have since been sustained at levels typically over 300 fish. Numbers in the late 1990s through the early 2000s were influenced by a hatchery component. However, since 2005, adult Chinook salmon numbers have ranged from 94 to 3,471 (with only three hatchery fish present in the counts), including 3 successive years with over 2,000 fish.
- Migratory Pacific lamprey are common in the vicinity of the Project, but they have not been included in the annual counts at VAFS. Experimental additions to the Cape Horn Dam fish ladder (e.g., polyvinyl chloride (PVC) bypass pipe for upstream lamprey migration) have greatly enhanced Pacific lamprey passage.
- Chinook salmon and steelhead spawning occurs in the mainstem Eel River from Lake Pillsbury to Van Arsdale Reservoir, as well as downstream of Van Arsdale Reservoir. Substantial Chinook salmon and steelhead spawning habitat also exists in two large tributaries to the Eel River within the Project vicinity (Tomki Creek and Outlet Creek), and steelhead spawning habitat exists in numerous smaller tributaries to the Eel River that are unaffected by the Project.
- Entrainment protection for downstream migrating fish is provided by the Van Arsdale fish screens at the Potter Valley Tunnel Intake. The original horizontal travelling fish screen was constructed in 1972. This screen was replaced with a pair of inclined plane screens in 1995 to better protect downstream migrant fish and improve operational reliability.
- Summer rearing habitat for juvenile steelhead in the vicinity of the Project is highly dependent on the occurrence of cool water temperatures. When the cold water pool in Lake Pillsbury is substantial, the cold water releases provide highly suitable conditions in the Eel River from Lake Pillsbury to Van Arsdale Reservoir (PG&E 2020). As river temperatures below Van Arsdale Reservoir rise, the Eel River provides suitable summer rearing habitat in most years only as far downstream as Thomas Creek, 8 miles below the reservoir (PG&E 2020). Summer rearing habitat below this point is generally limited

to areas of cool water inflow. Suitable rearing habitat also occurs in numerous cool tributaries to the Eel River.

- Since the introduction of Sacramento pikeminnow to the Eel River watershed (presumably in Lake Pillsbury) around 1979, this species has spread throughout most of the watershed and has established large populations. Their proliferation and the resulting competition with, and predation on, native fish species has greatly affected overall fish population levels and is viewed as a major obstacle to the recovery of anadromous salmonids in the Eel River Watershed. In laboratory streams, interspecific competition has been found to have a negligible effect on juvenile steelhead at water temperatures less than 18°C, while pikeminnow outcompete juvenile steelhead at temperatures 20-23°C (Reese and Harvey 2002) .
- Foothill yellow-legged frog and northwestern pond turtle have commonly been observed within the upper Eel River Watershed (i.e., the Eel River and tributaries between Lake Pillsbury and the Middle Fork Eel River).
- The construction of Coyote Dam (forming Lake Mendocino) in 1959 eliminated anadromous salmonid runs in the EBRR. Since then, the river has functioned as habitat for an active recreational rainbow trout fishery supported by CDFW hatchery plants.
- Both foothill yellow-legged frog and northwestern pond turtle likely inhabit the EBRR. Northwestern pond turtles have been documented in a farm pond in Potter Valley (5 adults in 2004) and in the EBRR near the confluence with Cold Creek in 2004.

3.3.4.1.4 Threatened and Endangered Aquatic Species

Several species listed under the federal ESA occur within the Project vicinity in the areas potentially affected by the Proposed Action. These include steelhead (Northern California Distinct Population Segment; Threatened) and Chinook salmon (California Coastal Evolutionarily Significant Unit; Threatened) in the Eel River downstream of Scott Dam, which is designated as Critical Habitat for both species. Coho salmon (Southern Oregon/Northern California Coast Evolutionarily Significant Unit; Threatened) are infrequently observed at VAFS, as described above, but this area is not Critical Habitat for coho salmon. Northwestern pond turtle is Proposed Threatened under the ESA.

State-listed species with special status under the California Endangered Species Act (CESA) in the Project vicinity that are not federally listed include the Coastal California Distinct Population Segment of foothill yellow-legged frog, Pacific lamprey, western river lamprey, and western brook lamprey. Northern California summer steelhead are listed as endangered under CESA, but it is unclear if the Project provides suitable habitat for this species because they have not been monitored under the current license. The Project vicinity is within the historic range of summer steelhead.

3.3.4.2 Environmental Effects

3.3.4.2.1 Reduction in East Branch Russian River Minimum Flows

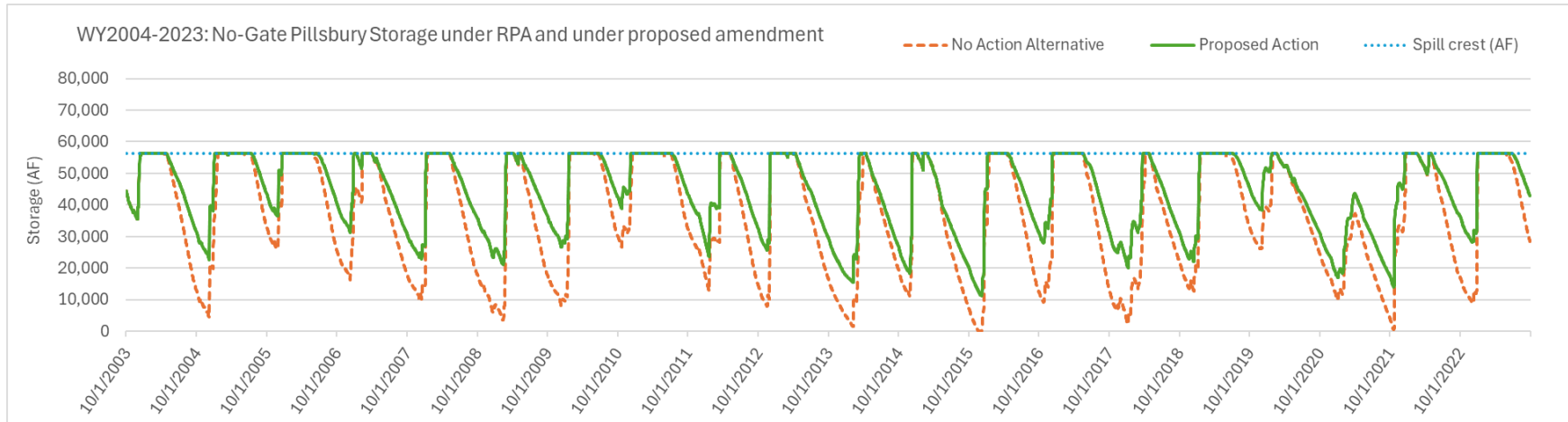
Implementation of the Proposed Action will reduce flows to the EBRR compared with baseline in most years during the spring and summer.

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. The Proposed Action will result in a reduction in habitat for rainbow trout and other aquatic species in the EBRR. CDFW stocks hatchery rainbow trout in the EBRR annually to enhance recreation opportunities. CDFW bases its fish stocking schedule on water temperature and volume. In recent years when the Project has operated under a license variance reducing EBRR flows to as low as 5 cfs, CDFW has continued to successfully stock rainbow trout in the EBRR (A. Renger, *pers. comm.*). CDFW has not seen any adverse effects to stocked fish in the lower variance flows in place and CDFW will continue to stock rainbow trout in the EBRR.

3.3.4.2.2 Preservation of Lake Pillsbury Storage

Implementation of the Proposed Action will preserve water storage in Lake Pillsbury compared with No Action Alternative. Figure 3-1 shows modeled Lake Pillsbury water storage from 2004 through 2023 under RPA-prescribed flows with the spillway gates open versus storage under the Proposed Action. In every water year, the Proposed Action was more protective of modeled storage in Lake Pillsbury compared with modeled storage under the existing RPA flows (Figure 3-1). Furthermore, Figure 3-1 shows, out of 20 years analyzed, the modeled storage under the RPA-prescribed flows would drop below PG&E's Lake Pillsbury target minimum of 12,000 AF level in 13 of those years (65% of years) and reach Lake Pillsbury's dead pool at 5,000 AF in 6 of those years (30% of years). Operating the reservoir below PG&E's target storage minimum of 12,000 AF risks facility safety and could potentially impact habitat conditions for listed salmonids through loss of flow below Scott Dam. In comparison, the modeled storage under the Proposed Action would only drop below 12,000 AF once in those 20 years (5% of years).

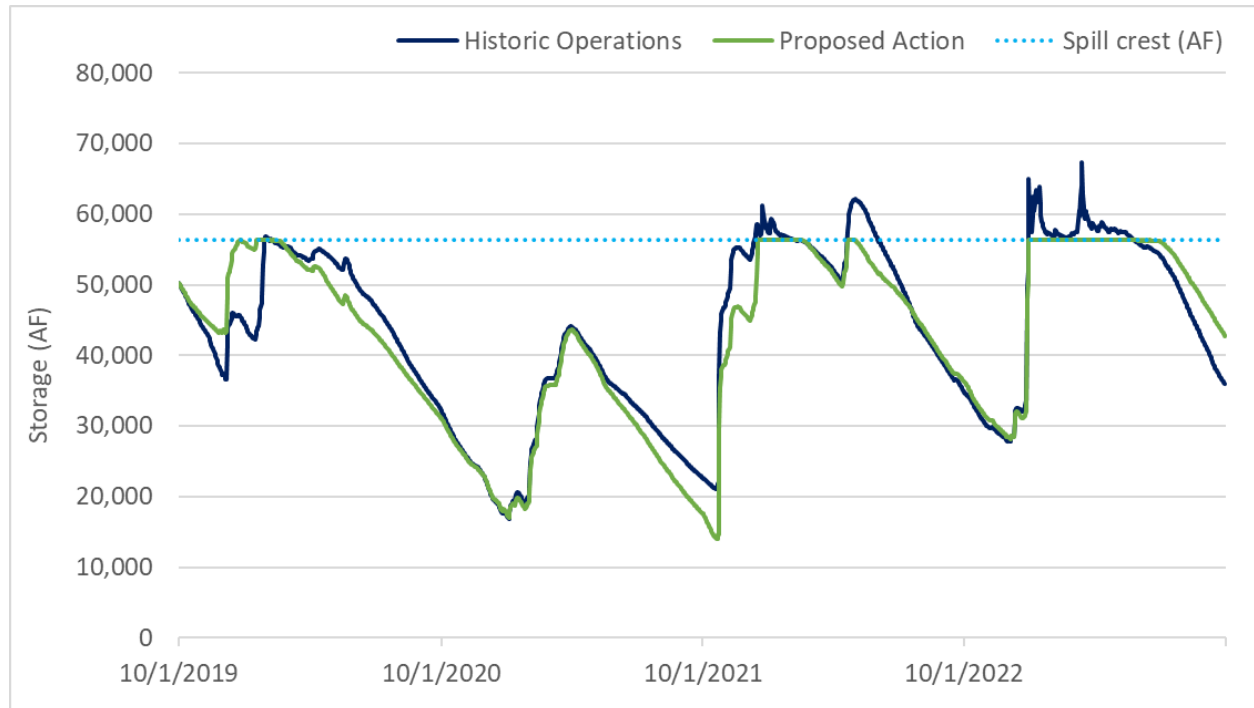
The Proposed Action would better maintain the cold-water pool within the reservoir, which provides thermal refugia for aquatic species, primarily fish, during the warmest water temperatures of the year. It also benefits other aquatic organisms including amphibians, reptiles, and benthic macroinvertebrates living along the margins of the reservoir by minimizing reservoir drawdown in late summer. Further discussion of the effects of increased storage in Lake Pillsbury are discussed in Hydrology and Water Resources and Recreation sections; 3.3.8.2.1 and 3.3.9.2.1, respectively.



Note: Figure shows storage under the existing RPA-prescribed minimum EBRR flows (orange dashed line) with the 1900 ft reservoir restriction compared with the proposed amended minimum EBRR flows (solid green line).

Figure 3-1. Modeled Lake Pillsbury storage from water year 2004 through 2023 with the spillway gates open.

Figure 3-2 shows Lake Pillsbury storage during the 2020 to 2023 water years, comparing historic storage with modeled storage under the Proposed Action. It is important to note that the historic record does not match RPA flows because temporary flow variances were implemented during this timeframe, particularly in water year 2021 when the region experienced extreme drought conditions and flows to the EBRR and Potter Valley Irrigation District (PVID) were restricted well below the flows included in the Proposed Action. Thus, the historic flows implemented in water year 2021 were even more protective of Lake Pillsbury storage than the Proposed Action. The Proposed Action was not found to be sufficiently protective of water temperature in the driest year (water year 2021), when historical operations resulted in slightly cooler water temperature conditions below Scott Dam.



Note: Figure compares historic storage (dark blue line) to modeled storage under the Proposed Action (green line). Actual diversions in 2021 were more restrictive than the Proposed Action due to extreme drought conditions.

Figure 3-2. Comparative Lake Pillsbury storage in water years 2020 to 2023.

3.3.4.2.3 Decrease in Eel River Temperature Between Project Dams

Implementation of the Proposed Action will decrease water temperature in the reach of the Eel River between Scott and Cape Horn dams compared with the No Action Alternative.

The primary ESA-listed fish species impacted by the Potter Valley Project are Chinook salmon and steelhead trout. Life stages of these species that could potentially be in the river and whose habitat conditions are influenced by the proposed flow changes are adult steelhead trout (pre- and post-spawn) and juvenile Chinook salmon and steelhead trout. Coho salmon are primarily found in the South Fork Eel River although a small population has been observed in Outlet Creek, a tributary stream to the mainstem Eel River approximately 30 river miles downstream of Cape Horn Dam. Although critical coho habitat is present in the project area, coho salmon have been reported infrequently at VAFS (located at PG&E’s Cape Horn Dam): 47 fish were recorded in 1946/47, but since then have been recorded in very small numbers, most recently in 2010/2011 (NMFS 2014).

Adult winter-run steelhead trout migrate into the upper Eel River watershed to spawn primarily from January through April. Under the Proposed Action, minimum flows will not be reduced below the RPA-prescribed flows in the Eel River between Scott Dam and Cape Horn Dam during the adult steelhead trout migration and spawning period.

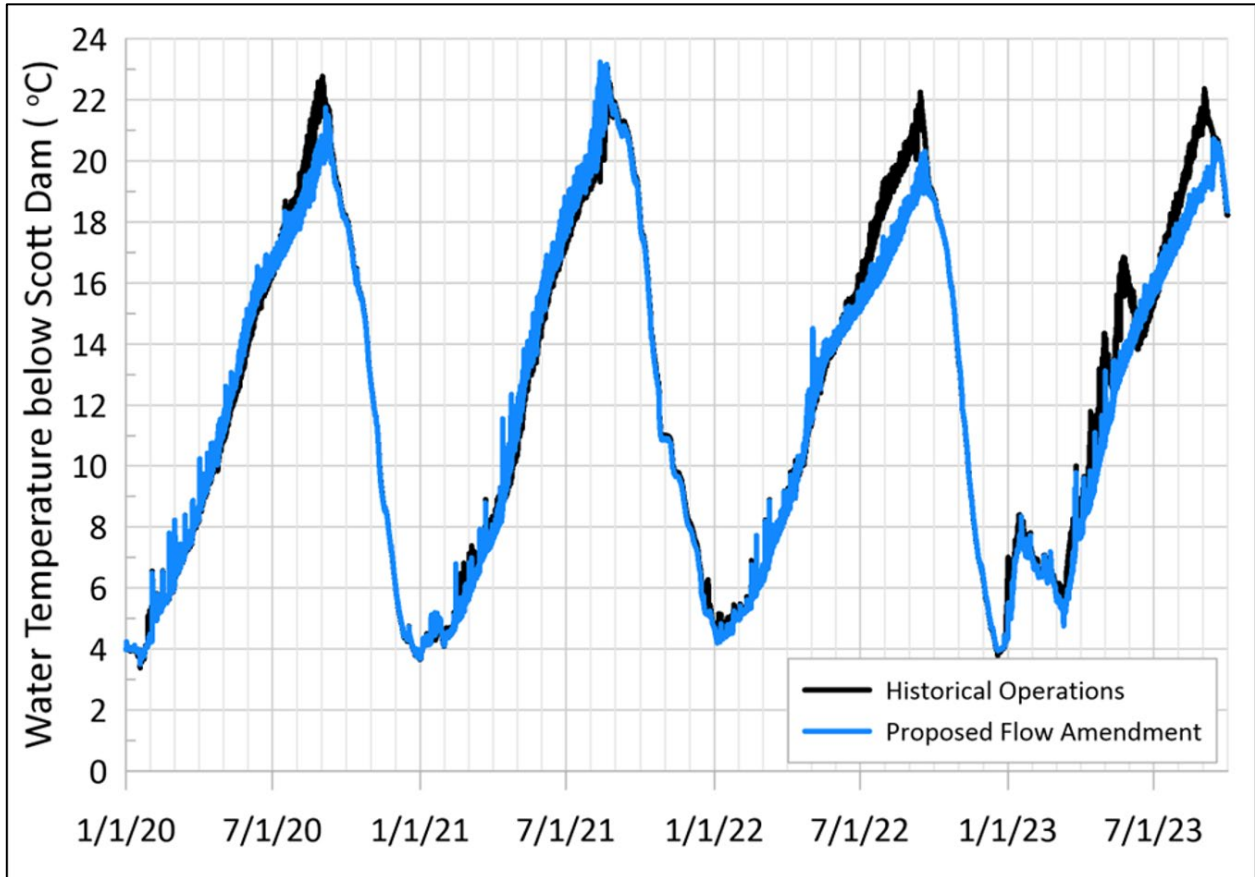
Juvenile Chinook salmon remain in the river for several weeks after hatching and then migrate to the ocean during spring (typically April to June), as flows decline, and water temperatures increase. Juvenile steelhead trout, which often spend 1 or more years in the river before migrating to the ocean during late winter and spring (typically February to June), require suitable habitat conditions throughout the summer. Under the Proposed Action, available spring rearing habitat in the Eel River between Scott and Cape Horn dams could be reduced after April 15, although an increase in spring flows followed by a decrease to summer levels, as prescribed by the RPA flows, will still occur, thus providing important migration cues for downstream migrating fish. With the reservoir restriction resulting in 20,000 AF less storage, spills to the Eel River in spring months may be more frequent and of longer duration, more closely mimicking unimpaired river conditions and further supporting juvenile salmonid outmigration cues. Warm surface water releases, as required by Section B.3 of the RPA would still occur as conditions allow.

The Proposed Action will reduce minimum flows in the Eel River between Scott and Cape Horn dams in mid to late summer because surplus diversion flows to the EBRR will be reduced to preserve storage in Lake Pillsbury (Figure 3-1). Although available summer rearing habitat for juvenile steelhead trout may be reduced under the Proposed Action, minimum flows between the dams will remain above the E-2 “Critical” classification prescribed by RPA. Furthermore, the Proposed Action is in alignment with NMFS’ IPMs as it supports improved habitat conditions for summer-rearing juvenile steelhead trout by reducing withdrawals from Lake Pillsbury, which has been found to reduce water temperature increases in late summer (PG&E 2023b). Summertime flow requirements in the Eel River below Cape Horn Dam under the Proposed Action will remain unchanged from the RPA flows.

The non-native Sacramento pikeminnow (*Ptychocheilus grandis*) is a predator and competitor of juvenile salmonids in the Eel River Basin. In laboratory streams, interspecific competition has been found to have a negligible effect on juvenile steelhead at water temperatures less than 18°C, while pikeminnow outcompete juvenile steelhead at temperatures 20-23°C (Reese and Harvey 2002). PG&E modeled water temperature in the Eel River downstream of Scott Dam under the Proposed Action using the CE-QUAL-W2 model (Cole and Wells 2015) by applying the proposed flow regime to historic operations for the 2020 to 2023 water years (Martinez and Addley 2024). The model simulations show that implementing the Proposed Action would reduce the maximum water temperature in the Eel River between Scott and Cape Horn dams in three out of four modeled years by up to 1.9°C (1.5°C on average) and the duration of high water temperatures (water temperatures above 20°C at PG&E stream gage E-2) by up to a month (24 days on average). These improved habitat conditions are anticipated to increase steelhead production, survival, and growth rates, and potentially reduce interspecies competition with pikeminnow.

Figure 3-3, Table 3-3, and Table 3-4 show the results of the water temperature modeling. The Proposed Action resulted in an average decrease in maximum summer temperature of about 1.5°C in 2020, 2022 and 2023 in the Eel River downstream of Scott Dam. The number of days above 20°C decreased from an average of 34 days per year (Historical Operations) to 10 days per year (Proposed Action) in the same three years. The timing of peak water temperatures

exceeding 20°C under the Proposed Action was also significantly delayed in water years 2020 and 2023 (Table 34), which benefits ESA-listed species in the Eel River by minimizing the duration of exposure to water temperatures above 20°C.



Note: Figure compares historic temperatures (black line) with modeled temperatures under the Proposed Action (blue line). Actual diversions in 2021 were more restrictive than the Proposed Action due to extreme drought conditions.

Figure 3-3. Modeled Water Temperature Modeling Results for Water Years 2020 to 2023.

Table 3-3. Model Scenario Water Temperature Results Downstream of Scott Dam.

MODEL SCENARIO	MAXIMUM SUMMER TEMPERATURE (°C)				NUMBER OF DAYS WITH DAILY AVERAGE WATER TEMPERATURE ABOVE 20°C			
	2020	2021	2022	2023	2020	2021	2022	2023
Baseline Historical Operations	22.8	23.1	22.3	22.4	32	45	29	40
Proposed Action	21.7	23.2	20.3	20.7	19	51	0	11
Difference (Proposed Action – Baseline)	-1.0	0.2	-1.9	-1.6	-13	6	-29	-29

Table 3-4. Timing of water temperatures above 20°C downstream of Scott Dam.

MODEL SCENARIO	DATE WHEN DAILY AVERAGE WATER TEMPERATURE DOWNSTREAM OF SCOTT DAM FIRST EXCEEDS 20°C			
	2020	2021	2022	2023
Baseline Historical Operations	8/14/2020	8/7/2021	8/23/2022	8/14/2023
Proposed Action	8/26/2020	7/31/2021	Never exceeds	9/12/2023
Difference (Proposed Action – Baseline)	12	-7	NA	29

Implementation of the Proposed Action will help preserve storage in Lake Pillsbury and better support suitable water quality conditions for aquatic resources downstream of Scott Dam. It will also 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) because of changes in flow, high levels of turbidity, and sedimentation. The Proposed Action will also help prevent the outlet works from becoming clogged, forcing releases to cease, and potentially dewatering the Eel River below Scott Dam.

3.3.4.3 Agency Coordination

PG&E held virtual multiple meetings with NMFS, USFWS, CDFW, and the Round Valley Indian Tribes (RVIT) technical specialists to discuss the Proposed Action and establish the minimum flows. A summary of this coordination is included in the Consultation Record table (Appendix E-2).

3.3.5 Cultural and Historical Resources

This section provides a description of the cultural resources in the vicinity of the Potter Valley Project. This section analyzes the Proposed Action's potential to affect cultural resources, including prehistoric and historic-era sites and historic-era built environment resources as affected by the Proposed Action.

3.3.5.1 Affected Environment

Cultural resources investigations have been conducted within and near the Project boundary resulting in strong documentation of cultural resources dating back to 1966. In the 1960s through 2016, dozens of archaeological surveys and investigations have been completed immediately in or near the Project boundary (Table 5.11.1 of the PAD, PG&E 2017a). Twenty additional cultural resources investigations were conducted within and adjacent to the FERC boundary during the 2000s that focused closer to elements of the Project. A comprehensive narrative including prehistoric archaeological, ethnographic, historic period, the early history of hydroelectric generation, prehistoric resources, and historic-era resources and the history of the Project can be found in the PAD (PG&E 2017a). Documented cultural resources can be reviewed in Table 5.11.2 of the PAD (PG&E 2017a). The Project operates under compliance

with License Article 42, which requires PG&E to cooperate the California State Historic Preservation Officer to identify and protect cultural resources during construction and operations.

3.3.5.2 Tribal Cultural Resources

Twenty-eight federally recognized and non-recognized Native American tribes maintain long cultural ties with the Project vicinity and surrounding region (2017). During relicensing, four tribes engaged with PG&E – Potter Valley Tribe, Sherwood Valley Band of Pomo Indians, Wiyot Tribe, and RVIT. During development of the 2017 PAD, PG&E investigated whether any tribes hold agreements with PG&E or lands within 0.25-miles of the Project boundary. There are no tribal lands that meet this definition located within or adjacent to the FERC Project boundary (PG&E 2017a). However, the Potter Valley Tribe owns two small parcels of land along the south shore of Van Arsdale Reservoir (PG&E 2017a). PG&E does not maintain access agreements with any tribes.

A comprehensive narrative on potentially interested tribes, tribal resources and interests, and tribal history can be reviewed in Section 5.12 of the PAD (PG&E 2017a). Of note, RVIT identified that anadromous fish occupy culturally significant places in the cultures of many Native American tribes and RVIT are concerned with the presence and health of various fish species (PG&E 2017a). Specifically, RVIT expressed an interest in determining the benefits and constraints of restoring conditions upstream of Lake Pillsbury to support anadromous fish. For this license amendment application process and the ensuing surrender process, PG&E has engaged closely RVIT. A Consultation Record that catalogs these engagements are outlined in Appendix E-2.

3.3.5.3 Environmental Effects

Since construction (between 1908 and 1922), there have been numerous and significant structural modifications to these facilities, and changes in operational regimes approved by FERC. Major additional structural changes are not expected for these facilities as a part of the Proposed Action. Additionally, reservoir water levels and river flows will be within the range of existing fluctuations and consistent with License Article 52 and are not expected to cause any additional adverse effects to historic properties in these areas. The Proposed Action will also improve habitat conditions for anadromous fish in the Eel River below Scott Dam.

3.3.6 Geology and Soils

This section provides a description of the geology and soils of the lands surrounding the Potter Valley Project (Project). This section analyzes the Proposed Action's potential effects related to the geologic setting, including mineral resources. It describes the affected environment, summarizes the overall information for the soils, and other geologic resources, and it analyzes the potential for the Proposed Action to affect these resources. As this resource area is unlikely to be affected by the Proposed Action, it is only being analyzed in brief.

3.3.6.1 Affected Environment

The Project is located on the Eel River and EBRR in Mendocino and Lake counties. Encompassing approximately 3,515 acres, the FERC Project Boundary is located within the Northern Coast Range of California, which extend from the San Francisco Bay to Eureka, bound to the west by the Pacific Ocean and to the east by the Central Valley.

The Project facilities are primarily located in the Central belt of the Northern Coast Range, which is characterized by mountains with elevations up to 4,300 ft above mean sea level (msl), separated by the intervening valley. Descriptions of the soils found within 1 mile of the Project are shown on Map 5.6-2 of the PAD (PG&E 2017a) and are available at www.soilseries.sc.egov.usda.gov (USDA-NRCS 2016).

The Bartlett Springs Fault is an active fault, located east of Scott Dam, and is the most significant seismic feature near the Project (PG&E 2016a). Bartlett Springs is the main fault in its fault system and extends 50 miles from the Middle Fork of the Eel River southeast of Round Valley, past Lake Pillsbury to just north of Cache Creek (Lienkaemper 2010). Between 1975 and 2014, strong motion instruments recorded a total of eight earthquakes within 12.5 miles of Scott Dam ranging in magnitude from 4.1 to 4.8 (PG&E 2016a). The largest recently recorded regional event was a M 5.1 earthquake that occurred on August 10, 2016, with an epicenter located approximately 9 miles southeast of Scott Dam (PG&E 2016a).

3.3.6.2 Environmental Effects

The Proposed Action includes only flow changes, with no potential to impact geologic or soil resources. The interaction between geomorphological and geologic and soil resources will not change as a result of the Proposed Action. The Proposed Action, a modification of Article 52, will have no effect on PG&E's ability to maintain geologic and soil resources surrounding the Project, or remain in compliance with all existing guidance, standards, and management prescriptions.

3.3.7 Geomorphology

This section describes hillslope processes and fluvial geomorphology in the vicinity of the Potter Valley Project. This section provides the following information: existing erosion, mass soil movement, slumping, or other forms of instability, including identification of project facilities or operations that are known to or may cause these conditions. This section also includes additional information related to channel morphology and fluvial processes (e.g., sediment supply, transport, and deposition). Descriptions of geological features and soils are included in Section 3.3.6.

3.3.7.1 Affected Environment

The Eel River is the third largest watershed in California, draining 3,684 mi², with a mean annual discharge of 6.5 million AF. The upper Eel River, which is defined as the 78-mile-long segment of the Eel River from its headwaters to the confluence of the Middle Fork Eel River, originates

on the slopes of Bald Mountain at an elevation of approximately 6,739 feet above mean sea level and drains 688 mi². The upper Eel River between Scott Dam and Outlet Creek is characterized into geomorphic reaches with respect to confinement and valley landforms (PG&E 2012). The river channel occupies a relatively narrow valley with little floodplain development.

The Eel River has the highest recorded average suspended sediment load per unit area of any river of its size or larger in the conterminous United States (Lisle 1990) and as such, the U.S. Environmental Protection Agency (USEPA) added the upper Eel River to California’s 303(d) impaired water list in 1992 due to elevated sedimentation. Total Maximum Daily Loads (TMDLs) for sediment and temperature were established for the upper Eel River in 2004 (USEPA 2004) with the primary sources of sediment (94% of the total delivery) being large erosion features (e.g., shallow debris slides, debris flows, gullies, and streambank erosion) unrelated to earthflows.

On December 14, 2004, FERC approved PG&E’s Bathymetric Survey Plan for Lake Pillsbury required under Article 55 in PG&E’s license amendment for the Potter Valley Project (FERC 2004b). The plan specifies that PG&E will conduct bathymetric surveys of Lake Pillsbury every ten years, beginning in 2005. Bathymetric surveys of Lake Pillsbury were conducted again in 2015/2016, and 2023, and survey results were submitted to FERC (PG&E 2016, 2017, and 2024). Table 3-5 shows the change in the total storage capacity (volume) of Lake Pillsbury over time.

Table 3-5. Lake Pillsbury Storage Capacity Over Time

YEAR	GATE STATUS	VOLUME (AF)	% OF ORIGINAL CAPACITY
1921	Closed	94,400	100
1959	Closed	86,780	92
1984	Closed	80,700	85
2005	Closed	74,993	79
2015-2016	Closed	76,876*	81
2023	Open	53,248 [†]	56

Notes:

* The slight increase in capacity shown between 2005 and 2015-2016 may be the result of improvements in equipment and techniques between the surveys, rather than a true change in capacity

[†]Reduction in Lake Pillsbury storage capacity between 2016 and 2023 was caused by sedimentation within the reservoir and the need to leave the spillway gates open permanently. If gates were closed for the 2023 bathymetry survey, storage would have been 69,871 AF, 74% of original capacity.

CDFW describes physical habitat characteristics in stream inventories conducted for Soda Creek (CDFG 1998a), Benmore Creek (CDFG 1998b), Tomki Creek (CDFG 1997), and Outlet Creek (CDFG 1995). Additional information on general geomorphic conditions in tributary channels is included in the 1995 Watershed Analysis Report for the Upper Main Eel River Watershed (USFS-MNF 1995) and instream condition inventories conducted by Mendocino National Forest in Benmore Creek (USFS-MNF 2014 unpublished data) and Soda Creek (USFS-MNF 2015 unpublished data).

3.3.7.2 Environmental Effects

The Proposed Action is limited to flow reductions in the Eel River and EBRR during the summer months and is not expected to impact geomorphology. Reduced summer diversions will preserve Lake Pillsbury storage and reduce the likelihood of bank sloughing in the reservoir. PG&E typically uses 12,000 AF as a minimum storage operating level to avoid the potential for bank sloughing in Lake Pillsbury. Verification of the minimum storage level necessary to protect Project infrastructure and downstream resources was confirmed based on the results of a 2017 evaluation of the Scott Dam low level outlet intake and related infrastructure (Mead and Hunt 2017). PG&E will remain in compliance with License Article 55, which requires PG&E to conduct bathymetric surveys of Lake Pillsbury every ten years, beginning in 2005.

3.3.8 Hydrology and Water Resources

This section describes hydrology and water resources in the vicinity of the Potter Valley Project. This section provides the following information: hydrological overview of Lake Pillsbury, the Eel River between Scott and Cape Horn dams, and the EBRR, including identification of project facilities or operations that are known to impact hydrological functions or water resources.

3.3.8.1 Affected Environment

3.3.8.1.1 Lake Pillsbury

Lake Pillsbury, impounded by Scott Dam, is the Project's storage reservoir, with a current full pool capacity of 53,248 AF based on the 2023 bathymetric survey (PG&E 2024a), calculated as capacity below the spill crest at elevation 1,900.0 feet (PG&E datum). Year-round reduction of the reservoir level is achieved by keeping the spillway gates always open, reducing total reservoir capacity by approximately 20,000 AF. Furthermore, the 2023 bathymetry survey indicated significant sedimentation within Lake Pillsbury, with as much as 9 feet of sediment accumulation compared with the previous survey completed in 2016 (PG&E 2024a). The 2016 total capacity estimate (with the ability to close the radial spillway gate) was 76,876 feet (PG&E 2016b), meaning that the combination of sedimentation and leaving the gates open resulted in a total capacity reduction of 23,628 AF (a 30.7% reduction) between 2016 and 2023.

3.3.8.1.2 Eel River

Implementation of the Proposed Action will reduce flows from Lake Pillsbury to the Eel River between the two dams compared with baseline in most years during the spring and summer through the loss of diversion. The Proposed Action does not change required minimum releases to the Eel River below Cape Horn Dam. Releases from both Lake Pillsbury and Van Arsdale Reservoir support salmon and steelhead populations in the Eel River Watershed. Effects to salmon and steelhead are described in Section 3.3.4 - Aquatic Resources.

3.3.8.1.3 East Branch Russian River

Implementation of the Proposed Action will reduce flows to the EBRR compared with the No Action Alternative in most years during the spring and summer. Releases from the powerhouse are a significant source of water in the EBRR and for local water users.

3.3.8.2 Environmental Effects

The Proposed Action consists of reductions in the minimum flows to the EBRR to better preserve storage in Lake Pillsbury in the summer and late fall. These flow reductions will impact available water in the EBBR and the Eel River between Scott and Cape Horn dams.

3.3.8.2.1 Lake Pillsbury

Reducing required releases from Lake Pillsbury in the spring and summer will better preserve storage in Lake Pillsbury through the summer and early fall. The Mendocino National Forest (MNF) maintains water rights along the shoreline of Lake Pillsbury to provide water to campgrounds and day use areas. By preserving storage, this non-capacity license amendment will benefit MNF water rights. Figure 3-1 shows modeled Lake Pillsbury water storage from 2004 through 2023 under existing RPA-prescribed minimum flows with the current reservoir restriction versus storage under the Proposed Action. In every water year, the proposed amended flows were more protective of modeled storage in Lake Pillsbury compared with modeled storage under the existing RPA flows.

3.3.8.2.2 Eel River

Reduction in the minimum flows to the EBRR will also reduce diversion flows in the reach of the Eel River between Scott Dam and Van Arsdale Reservoir. PG&E is the only water rights holder in this reach except for a pre-1914 right owned by CDFW to supply domestic water for employees at the Van Arsdale Fish Station. Reducing flows to EBRR would limit hydropower production at Potter Valley Powerhouse, but in 2021 PG&E made a decision to discontinue all power production at the Project due to a transformer not meeting operating standards (PG&E 2023a). The Proposed Action will not affect flows in the Eel River downstream of Cape Horn Dam. Therefore, one Eel River water right will potentially be affected by the Proposed Action, but sufficient water will remain in the Eel River to supply this senior (pre-1914) water right diversion.

3.3.8.2.3 East Branch Russian River

Reduction in the minimum flows to the EBRR will negatively affect water users in the EBRR. According to the SWRCB's Electronic Water Rights Information Management System (eWRIMS), there are 55 active water rights on the EBRR (SWRCB 2024a). PG&E recently modeled average EBRR flow deliveries from the Project by applying the proposed minimum flows included in Table 2-1 to actual historic conditions. The results of this modeling efforts are included in Table 3-6 compared with averaged historic flow deliveries by month from 2004 through 2023. From July through September, EBRR flow deliveries will decrease under the Proposed Action by an average of 88% compared with the average EBRR flow deliveries from

2014 – 2023, and an average of 97% compared with the average EBRR flow deliveries from 2004 – 2013 (Table 3-6).

Since 2004, it has become increasingly challenging for PG&E to maintain compliance under Article 52. From 2013 to 2022, PG&E operated under flow variances 7 out of 10 years due to insufficient water supply. In 2023 and 2024, PG&E requested flow variances to support cooler water temperature releases from Lake Pillsbury due to changes in operations (reservoir restriction) resulting in lower water storage in the reservoir. Table 3-6 is thus divided into the “RPA period” (2004 to 2013) and the “RPA with variances period” (2014 to 2023).

Table 3-6. Historic Flow Deliveries to the East Branch Russian River (EBRR) Compared with Modeled Flows Based on Applying the Proposed Action to historic conditions.

MONTH	WY2004-2013 AVERAGE (CFS)		WY2014-2023 AVERAGE (CFS)	
	RPA EBRR	PROPOSED ACTION	RPA w/ VAR. EBRR	PROPOSED ACTION
April	35	26	33	24
May	57	26	39	16
June	72	25	47	12
July	72	5	43	5
August	72	5	35	5
September	53	5	30	5

3.3.8.2.4 Potter Valley Irrigation District

PG&E delivers water to the Potter Valley Irrigation District (PVID) based on allocation requests under a contract between PG&E and PVID. The Proposed Action will not alter the terms of this contract.

3.3.8.3 Agency Coordination

PG&E held a virtual meeting with the California SWRCB, to discuss the Proposed Action. The SWRCB provided technical comments to PG&E on September 19, 2024. A summary of this coordination is included in the Consultation Record table (Appendix E-2).

3.3.8.4 Downstream Water Users Consultation

PG&E held a virtual meeting with the PVID, to discuss the Proposed Action. A summary of this coordination is included in the Consultation Record table (Appendix E-2).

3.3.9 Recreation

This section describes the recreational resources in the vicinity of the Potter Valley Project. Setting information is presented for the following two Project regions: (1) Scott Dam Area, (2) Russian River Watershed (limited to the EBRR upstream of Lake Mendocino). This section provides general information about the recreation resources and opportunities in the vicinity of the Project and specific information about recreation opportunities and facilities associated with the Project.

3.3.9.1 Affected Environment

3.3.9.1.1 Lake Pillsbury and the Eel River

A variety of developed recreation facilities are in the immediate vicinity of the Project. A list of these Project recreation facilities is included in Table 3-7. The locations of these recreation facilities are shown on Maps 3-4 and 4-7 of the PAD (PG&E 2017a). The developed Project recreation facilities include family campgrounds, group campgrounds, and day-use facilities that are open to the public.

Table 3-7. Project Recreation Facilities.

RECREATION FACILITIES	
Family Campgrounds	Day Use Facilities
Fuller Grove Campground	Eel River Visitor Information Kiosk
Navy Campground	Fuller Grove Day Use Area and Boat Launch
Oak Flat Campground	Pillsbury Pines Day Use Area and Boat Launch
Pogie Point Campground	Pogie Point Day Use Area
Sunset Point Campground	Lake Pillsbury Low Level Boat Launch
Trout Creek Campground	
Group Campgrounds	
Fuller Grove Group Campground	
Trout Creek Group Campground	

Five family campgrounds and one group campground are located along the shoreline of Lake Pillsbury (Map 4-7, PG&E 2017a). In addition, one campground with both family and group capacity is located along the Eel River upstream of Van Arsdale Reservoir (Map 3-4, PG&E 2017a). Developed day-use facilities in the vicinity of Lake Pillsbury include a visitor information kiosk, three day-use areas, three boat launches, and associated parking and picnic areas.

A variety of non-Project private recreation facilities, including recreational resorts and private camps, and private residence tracts are also located around Lake Pillsbury and shown on Map 4-7 of the PAD (PG&E 2017a). Apart from Westshore Camp, all of the private recreation facilities in the vicinity of Lake Pillsbury are located on National Forest System Lands and therefore operated under long-term lease agreements with the USFS. The Westshore Camp is located on PG&E land and operated by the Westshore Campers Association under a long-term lease agreement with PG&E. The owners of the private recreation facilities around Lake Pillsbury maintain boat docks and/or launches along the shoreline. These boat docks and launches are located within the FERC Project boundary, on land owned by PG&E, and are therefore operated under long-term agreements with PG&E.

In 2016, PG&E constructed a low level boat ramp pursuant to P-77 License Article 56 with a toe elevation of 1885.9 feet (PG&E datum) following consultation with the USFS and FERC approval of an amendment to the recreation plan (FERC 2016). The low level boat ramp is located within the FERC Project boundary on PG&E land just south of the Lake Pillsbury Resort. A portion of the access road is outside of the FERC Project boundary. This facility is open from

April 1 through mid-September. The boat ramp is operated and maintained by Lake Pillsbury Resort under an agreement with PG&E. The toe elevation was selected to allow boater access down to a reservoir elevation of 1888.9 feet (PG&E datum), which was determined to be the elevation above which Lake Pillsbury remains on Labor Day during 80% of years.

3.3.9.1.2 East Branch Russian River

CDFW stocks hatchery rainbow trout in the EBRR annually to enhance recreation opportunities. CDFW bases its fish stocking schedule on water temperature and volume. In recent years when the Project has operated under a license variance reducing EBRR flows to 5 cfs, CDFW has continued to stock rainbow trout in the EBRR successfully (A. Renger, *pers. comm.*). CDFW has not seen any adverse effects to stocked fish in the lower variance flows in place and CDFW will continue to stock rainbow trout in the EBRR.

3.3.9.2 Environmental Effects

The Proposed Action consists of reductions in the minimum flows to the EBRR to better preserve storage in Lake Pillsbury in the summer and fall. These flow reductions will improve recreation opportunities in the reservoir compared to the No Action Alternative by maintaining reservoir storage in the summer and early fall. Recreation opportunities in the Eel River and EBRR are not expected to be negatively impacted by the Proposed Action.

3.3.9.2.1 Lake Pillsbury

Implementation of the Proposed Action will increase water storage in Lake Pillsbury compared with the No Action Alternative. By increasing storage in summer, water surface elevations will be higher than baseline. Seasonal water level fluctuations in Lake Pillsbury affect the ability of boaters to access the reservoir from boat ramps in late summer. Implementation of Proposed Action will benefit recreation in Lake Pillsbury by extending the season of boat ramp accessibility. Table 3-8 shows the results of comparing 20 years of modeled Lake Pillsbury surface elevations to the elevation of the low-level boat launch elevation, calculating the number of days that the launch would be inaccessible under RPA-prescribed flows with the spillway gates open versus surface elevation under the Proposed Action during the recreation season of May through September. The Proposed Action minimizes the number of days that the ramp will be inaccessible compared with RPA flows in nearly every month of the recreation season (each flow regime resulted in an average of 3 inaccessible days in June).

Table 3-8. Summary of Modeled Average Number of Days per Month Low Level Boat Launch Inaccessible Under RPA Flows with Current Reservoir Restriction Compared with Flows under the Proposed Action.

	RPA	PROPOSED ACTION
May	2	1
June	3	3
July	16	3
August	22	9
September	28	18

3.3.9.2.2 Eel River

Implementation of the Proposed Action will decrease flow in the Eel River between Scott and Cape Horn dams compared with baseline. This reduction in flow is unlikely to significantly affect recreational opportunities at the Trout Creek Campground because the Eel River will remain accessible. The Proposed Action will not affect flows in the Eel River downstream of Cape Horn Dam. Therefore, the proposed flow changes will not impact recreation in the Eel River.

3.3.9.2.3 East Branch Russian River

Since CDFW will continue to stock hatchery rainbow trout in the EBRR, the Proposed Action will not impact recreation in the EBRR (A. Renger, *pers. comm.*). CDFW has not seen any adverse effects to stocked fish in the lower variance flows in place and CDFW will continue to stock rainbow trout in the EBRR.

3.3.9.3 Agency Coordination

PG&E consulted with the MNF during the design and planning for construction of the low level boat launch described above. The final elevation of the boat launch toe was agreed to by MNF (PG&E 2016). PG&E held virtual meetings with MNF on July 1 and August 20, 2024, to discuss the Proposed Action. MNF agreed that the Proposed Action will benefit recreation in Lake Pillsbury compared with baseline (J. Abel, *pers. comm.*).

3.3.10 Land Use

This section provides a description of the land use for the lands surrounding the Potter Valley Project, including a summary description of land uses and pertinent land management plans and policies that govern land uses within and adjacent to the FERC Project Boundary. This section analyzes the Proposed Action's potential effects related to land use. As land uses are unlikely to be affected by the Proposed Action, it is only being analyzed in brief.

3.3.10.1 Affected Environment

The Project is located on the Eel River and EBRR in Mendocino and Lake counties, California. Most of the Project is located on lands owned by PG&E and federal lands administered by the MNF. The FERC Project Boundary encompasses approximately 3,486 acres, and with a surface area of approximately 2,225 acres under normal operating conditions, Lake Pillsbury is the largest lake in the MNF. Land use within the FERC Project Boundary is primarily hydropower generation and recreation, both of which are managed in accordance with the articles and conditions outlined in the Project license, associated management plans, and several Special Use Authorizations and Memoranda of Agreements between PG&E and the MNF. Table 3-9 identifies the ownership acreages within the Project's FERC Project Boundary.

Table 3-9. Land Ownership within the Existing FERC Project Boundary

OWNERSHIP	ACRES
National Forest System Lands	1,143
PG&E-owned	2,307
Privately-owned	36
Total:	3,486

The Eel River between Lake Pillsbury and Van Arsdale Reservoir flows primarily through PG&E owned property and intermittent parcels of public land managed by the MNF. Project facilities are located in a relatively remote area with limited road access; Project facility access roads and recreation facility access roads are identified in the PAD (PG&E 2017a).

3.3.10.2 Environmental Effects

Further information regarding the Specially Designated Areas surrounding the Project can be found in the PAD (PG&E 2017a). The Proposed Action will have no effect on PG&E's ability to remain in compliance with land use management and objectives for lands surrounding the Project, nor its commitment to conservation of lands in California. Therefore, the Proposed Action is unlikely to affect land use.

3.3.11 Socioeconomic

This section describes the socioeconomic resources in the vicinity of the Project, and the environmental effects of those resources by the Proposed Action.

3.3.11.1 Affected Environment

The Project's facilities are located within Mendocino and Lake counties in northwestern California (PG&E 2017a). Despite geographic proximity, Lake, Mendocino, and Sonoma counties (Sonoma being the downstream county on the Russian River) have very different land use patterns, rates of population growth, and employment and income trends, as outlined in the PAD (PG&E 2017a). Lake Pillsbury and Scott Dam are in Lake County. Van Arsdale Reservoir, Project diversion facilities, and Potter Valley Powerhouse are in Mendocino County. The

Russian River flows through Sonoma County, although there are no Project facilities in Sonoma County. All three counties are predominantly rural in nature, with mountainous terrain and numerous valleys where agriculture and urban uses dominate the landscape (PG&E 2017a). A comprehensive review of general land use and population patterns can be review in Section 5.13 of the PAD (PG&E 2017a). Populations trends for all three counties are summarized in Table 3-10.

Table 3-10. Population Patterns for Lake, Mendocino, Sonoma Counties Compared to California as a Whole.

AREA	POPULATION (2000)	POPULATION (2010)	POPULATION CHANGE (2000 TO 2010)	LAND AREA (MI ²)	POPULATION DENSITY (2010)
Lake County	58,309	64,665	10.9%	1,256	51.5
Mendocino County	86,265	87,841	1.8%	3,506	25.1
Sonoma County	458,614	483,878	6.2%	1,576	307.1
California	33,871,648	37,253,956	10.0%	155,959	238.9

Source: PG&E (2017a).

The average per capita income of Lake County was \$37,807, Mendocino County was \$43,845, and Sonoma County was \$53,520. The statewide per capita income in 2015 was \$53,741 (PG&E 2017a). Individuals below poverty line in Lake County was 24.7%, Mendocino County was 20.4%, and Sonoma County was 11.7%, while the state average was 16.3%. Today, the unemployment rate in California is 5.3%. The economic indicators and base of all three counties are available for review in Section 5.13.5 and 5.13.6 of the PAD (PG&E 2017a). Timber and agriculture have been the primary drivers to the local economies of Lake, Mendocino, and Sonoma Counties. Additionally, tourism has emerged as an important, compatible economic contributor. Visitors frequently come to see the extensive forests and vineyards in the region (PG&E 2017a). The top three employment sectors in 2015 were Health Care and Social Assistance (20.9%), Government (17.2%), and Retail Trade (12.2%) (PG&E 2017a). Table 5.13.3 of the PAD (PG&E 2017a) shows all annual employment and earnings by industry. Table 5.13.4 identifies the major employers in Lake County (PG&E 2017a).

3.3.11.2 Environmental Effects

Project maintenance, when necessary, is performed by PG&E employees who work on several PG&E hydroelectric assets located in northern California. Under the Proposed Action, there will be no changes to the existing employment opportunities at the Project (positions will be neither added nor eliminated), and no construction activities are anticipated due to the change in the timing of flows outlined in Table 2-1. The Project proposes to continue all other operational regimes, except for the changes under the Proposed Action. The Proposed Action is unlikely to have any effect on socioeconomic resources.

4.0 Cumulative Effects

4.1 Cumulative Actions

According to the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (40 CFR 1508.7), a cumulative effect is the effect on the environment that results from the incremental effect of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period, including hydropower and other land and water development activities.

Based on information evaluated in this Exhibit E, including previous study reports and comments received, the following resources were identified that may be cumulatively affected:

- Aquatic Resources
- Hydrology and Water Resources

4.1.1.1 Geographic Scope

PG&E has determined that the geographic scope of analysis for cumulatively affected resources is defined by the physical limits or boundaries of 1) the Proposed Action's effect on the resources, and 2) contributing effects from other hydropower and non-hydropower activities within the EBRR basin. The geographic scope of the water resources (quantity and quality) cumulative effects analysis includes the EBRR basin. This geographic scope was chosen because the operation and maintenance of the Project in combination with other hydroelectric and water storage projects in the EBRR basin may affect flow, water quantity, and water quality throughout the EBRR basin system.

4.1.1.2 Temporal Scope

The temporal scope of the cumulative effects analysis will include a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. Given the potential for the Project to be surrendered and decommissioned in the near future, PG&E has concentrated on the potential effects on the resources from reasonably foreseeable future actions, generally in a qualitative analysis.

4.2 Cumulative Effects by Resource

4.2.1 Aquatic Resources

The Proposed Action minimum flows remain within the bounds established by the RPA and will help preserve storage in Lake Pillsbury and better support suitable water temperature conditions for aquatic resources in the Eel River below Scott Dam. There are no known federal, state, or

local actions that would interact with the Proposed Action to cumulatively affect aquatic resources within the scope of this analysis (Section 4.1.1.1 and 4.1.1.2).

4.2.2 Hydrology and Water Resources

This section addresses potential cumulative effects on water rights and water delivery, proposed operations and water quantity, and water quality in the EBRR downstream of the Project.

The Proposed Action is not anticipated to have cumulative effects on or modification to water rights held by PG&E and the other water users in the Eel River Basin.

The range of EBRR flows presented in Table 2-1 are representative of the current affected environment and the anticipated future condition under the Proposed Action. FERC's January 28, 2004, Order Amending License for the Potter Valley Project (2004 Amendment, FERC 2004a) and incorporating the terms of NMFS' RPA significantly reduced the quantity of water diverted to the EBRR that is beneficial to downstream purposes, including contributions to storage in Lake Mendocino (PG&E 2017a) and as a source of irrigation water for EBRR water rights holders (SWRCB 2024a). In 2006, when PG&E further adjusted operations to comply with the terms of the license, diversions to the EBRR were further incrementally reduced, including diversion of available water during periods of spill at Lake Pillsbury. The Proposed Action will reduce diversions to the EBRR further, interacting with the 2004 Amendment to result in a cumulative adverse effect to the quantity of water available to EBRR water rights holders.

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Appendix E-1

2002 National Marine Fisheries Service (NMFS) Reasonable and Prudent Alternative (RPA) (Redline)

APPENDIX A

NOAA FISHERIES' REASONABLE AND PRUDENT ALTERNATIVE

Definitions. The following definitions apply to terms used in this article.

- (1) *MF11* = minimum flow of the Eel River below Cape Horn Dam (cubic feet per second, or cfs).
- (2) *MF02* = minimum flow of the Eel River below Scott Dam (cfs).
- (3) *MF16* = minimum flow of the East Branch Russian River (cfs).
- (4) *Index* = index flow (cfs).
- (5) *Cap* = cap on the index flow (cfs).
- (6) *Floor* = floor on the index flow (cfs).
- (7) *SF* = summer flows.
- (8) *CLP(date)* = cumulative inflow into Lake Pillsbury as of the given date (acre-feet, or ac-ft).
- (9) *EXCL(date)* = exceptionally low inflow into Lake Pillsbury as of the given date (ac-ft).
- (10) *CRIT(date)* = critically dry inflow into Lake Pillsbury as of the given date (ac-ft).
- (11) *DRY(date)* = dry inflow into Lake Pillsbury as of the given date (ac-ft).
- (12) *Bom* = beginning-of-month.
- (13) *Day* = day-of-month.
- (14) *FM* = May floor

A. Minimum Flows of the Eel River Below Cape Horn Dam.

Minimum flows of the Eel River below Cape Horn Dam, MF11, measured at the Licensee's gauge E-11, shall be **calculated as the 24-hour average of the flow (mean daily flows), and** computed as an index flow subject to the floor and cap limitations. If the index flow is between the cap and the floor, the minimum flow is equal to the index flow. If the index flow is less than the floor, the minimum flow is equal to the floor. If the index flow is greater than the cap, the minimum flow is equal to the cap. Mathematically, this can be expressed as: $MF11 = \min(\max(Index, Floor), Cap)$. The cap and the floor are specified in sections (A.1) through (A.8) below.

A.1. October 1 – October 15

$$Cap = SF + (140 - SF) * Day / 15$$

If $SF < 25$ cfs, $Floor = SF + (25 - SF) * Day / 15$. Otherwise, $Floor = SF$.

A.2. October 16 – November 30

$Cap = 140$ cfs
If $SF < 25$ cfs, $Floor = 25$ cfs. Otherwise, $Floor = SF$

A.3. December 1 – March 31

$Cap = 140$ cfs
 $Floor = 100$ cfs, but if $CLP(Bom)$ is less than $EXCL(Bom)$ and if the previous month's $Floor$ was not equal to 100 cfs, $Floor = 25$ cfs.

A.4. April 1 – May 15

$Cap = 200$ cfs
 $Floor = 100$ cfs, but if $CLP(Bom)$ is less than $EXCL(Bom)$ and if the previous month's $Floor$ was not equal to 100 cfs, $Floor = 25$ cfs.

A.5. May 16 – May 31

$Cap = 200$ cfs
 $Floor = SF + (FM - SF) * \exp(-(Day - 15)/7)$, where FM is the May 1-15 floor defined in paragraph A.4.

A.6. June 1 – June 30

$Cap = SF + (200 - SF) * \exp(-Day/7)$
 $Floor = SF + (FM - SF) * \exp(-(Day + 15)/7)$, where FM is the May 1 floor defined in paragraph A.4.

A.7. July 1 – July 30

$Cap = SF + (200 - SF) * \exp(-(Day + 30)/7)$
 $Floor = SF + (FM - SF) * \exp(-(Day + 45)/7)$, where FM is the May floor defined in paragraph A.4.

A.8. August 1 – September 30

Cap and Floor are both equal to the summer flow SF.

Summer flow value depends on the classification of both current and previous water years based on the cumulative inflow into Lake Pillsbury as of May 15. If the previous water year was not classified as "very wet," summer flow shall be equal to the singular summer flow. If the previous water year was classified as "very wet," summer flow shall be equal to the serial summer flow. Values of singular and serial summer flows are selected according to the classification of the current water year.

Water year classification criteria and values of singular and serial summer flows are shown in the following table:

Classification			Summer Flow <i>SF</i>	
Water Year Classification	Probability Range	CLP as of May 15 (ac-ft)	Singular	Serial
Very Dry	0-20%	Less than 171,600	3 cfs	5 cfs
Dry	21-50%	171,600 to 309,400	9 cfs	20 cfs
Wet	51-80%	309,400 to 598,400	15 cfs	25 cfs
Very Wet	81-100%	More than 598,400	30 cfs	35 cfs

A.9. *CLP* computation.

CLP on a given day is defined as the cumulative unimpaired inflow into Lake Pillsbury from the beginning of the current water year to the end of the previous day, ignoring the net evaporation. *CLP* shall be computed as:

$$CLP = \Delta(E01) + cfs2af * \text{sum}(E02),$$

Where *E01* is the Lake Pillsbury storage in ac-ft, *delta* indicates the change from the beginning of the current water year to the end of the previous day, $cfs2af = 1.98347$, *E02* is the measured flow of the Eel River below Scott Dam in cfs, and sum indicate the summation of all daily flows from the beginning of the current water year to the end of the previous day.

A.10. Exceptionally low inflows.

Exceptionally low inflows into Lake Pillsbury, EXCL, are defined in the following table:

Date	Dec 1	Jan 1	Feb 1	Mar 1	Apr 1	May 1
EXCL (ac-ft)	2,000	4,000	7,000	12,000	25,000	40,000

A.11. Index flow computation.

The following index flow equation defines the distribution of the overall water supply between the downstream Eel River and the Potter Valley Project Diversion:

$$\text{Index} = 0.7 * \text{Eel},$$

where Eel is the unimpaired flow of the Eel River below Cape Horn Dam.

The index flow variable Eel is estimated as:

$$Eel = \text{avg}[af2cfs * \text{delta}(E01) + E11 + E16],$$

where avg indicates the average over the last seven days, $af2cfs=0.50417$, $\text{delta}(E01)$ is the daily change in storage of Lake Pillsbury in ac-ft, $E11$ is the measured release below Cape Horn Dam in cfs, and $E16$ is the measured Potter Valley Project diversion in cfs.

B. Minimum flows of the Eel River below Scott Dam

B.1. Minimum **mean daily** flows of the Eel River below Scott Dam, $MF02$, measured at the PG&E gauge E-02, shall be computed as shown in the following table:

Minimum Flow of the Eel River below Scott Dam $MF02$

Period		Classification-Flow		
From	Through	Normal	Dry	Critical
Dec 1	May 31	100 cfs	40 cfs	20 cfs
Jun 1	Nov 30	60 cfs	40 cfs	20 cfs

~~B.2. Classification~~

- ~~• January through June are classified as normal if $CLP(Bom) > DRY(Bom)$~~
- ~~• January through June are classified as dry if $CRIT(Bom) < CLP(Bom) < DRY(Bom)$~~
- ~~• January through June are classified as critical if $CLP(Bom) < CRIT(Bom)$~~
- ~~• July through December are classified based on the classification of the previous June~~
- ~~• $DRY(Bom)$ and $CRIT(Bom)$ are shown in the following table:~~

Date	Jan-1	Feb-1	Mar-1	Apr-1	May-1	Jun-1
DRY (ac-ft)	19,975	39,200	65,700	114,500	145,600	160,000
$CRIT$ (ac-ft)	3,400	19,500	40,000	45,000	50,000	55,000

B.32. PG&E shall continue to cooperate in releasing warm water from the spillway of Scott Dam in the later winter/early spring period to promote the timely downstream migration of juvenile Chinook salmon from the Eel River between Scott and Cape Horn Dams.

C. Minimum Flows to the East Branch of the Russian River

C.1. Minimum **mean daily** flows of the East Branch of the Russian River, *MF16*, measured at the PG&E gauge E-16, but excluding flows released for the Potter Valley Irrigation District, shall be computed as shown in the following table:

~~Minimum Flow of the East Branch Russian River MF16~~

Period		Classification		
From	Through	Normal	Dry	Critical
Sep-16	Apr-14	35-cfs	35-cfs	5-cfs
Apr-15	May-14	35-cfs	25-cfs	5-cfs
May-15	Sep-15	75-cfs	25-cfs	5-cfs

Minimum Flow of the East Branch Russian River MF16

Period		Classification		
From	Through	Normal	Dry	Critical
Oct 1	Apr 14	35 cfs	35 cfs	5 cfs
Apr 15	May 14	Scott Dam in Spill Condition ¹ :		
		35 cfs	25 cfs	5 cfs
May 15	Jun 30	Scott Dam not in Spill Condition ¹ :		
		5 cfs	5 cfs	5 cfs
May 15	Jun 30	Scott Dam in Spill Condition ¹ :		
		75 cfs	25 cfs	5 cfs
May 15	Jun 30	Scott Dam not in Spill Condition ¹ :		
		5 cfs	5 cfs	5 cfs
Jul 1	Sep 30	5 cfs	5 cfs	5 cfs

¹ Scott Dam spills when Lake Pillsbury water surface elevation is above an elevation of 1,900.0 feet, based on the PG&E datum.

C.2. Classification

- ~~• Classification is the same as described in Section B.2.~~
- January through June are classified as normal if $CLP(Bom) > DRY(Bom)$
- January through June are classified as dry if $CRIT(Bom) < CLP(Bom) < DRY(Bom)$
- January through June are classified as critical if $CLP(Bom) < CRIT(Bom)$
- July through December are classified based on the classification of the previous June

- *DRY(Bom)* and *CRIT(Bom)* are shown in the following table:

Date	Jan 1	Feb 1	Mar 1	Apr 1	May 1	Jun 1
<i>DRY</i> (ac-ft)	19,975	39,200	65,700	114,500	145,600	160,000
<i>CRIT</i> (ac-ft)	3,400	19,500	40,000	45,000	50,000	55,000

~~C.3.—Dry spring exclusion~~

- ~~From June 1 through September 15, if the month is classified as normal and the inflow into Lake Pillsbury during the preceding April and May is less than 20,000 ac-ft, MF16 = 40 cfs.~~

D. Block Water

D.1. 2,500 ac-ft are reserved for release at the discretion of resource agencies each ~~water~~ calendar year.

E. Operating Rules

E.1. Release to the Eel River below Cape Horn Dam shall be greater than or equal to the minimum flow MF11 specified in Section A.

E.2. Release to the Eel River below Scott Dam shall be greater than or equal to the minimum flow MF02 specified in Section B.

E.3. Release to the East Branch Russian River shall be greater than or equal to the minimum flow MF16 specified in Section C plus the release for the Potter Valley Irrigation District.

E.4. Release for the Potter Valley Irrigation District shall not exceed 5 cfs from October 16-April 14 and 50 cfs from April 15 to October 15. If CLP (April 1) is less than 25,000 ac-ft, this release shall not exceed 25 cfs during the following period from April 15 through October 15.

E.5. Diversions in excess of the sum of the minimum flow MF16 specified in Section C and the release to the Potter Valley Irrigation District specified in Section E.4 can only be made when the Lake Pillsbury Storage is above the Target Storage Curve. Exceptions to the rule can occur only due to rare and brief emergency power and water demands.

E.6. Different Target Storage Curves shall be used depending on the water year classification as of May 15 for the purpose of the summer flow specification.

- If a water year is classified as “Very Wet,” i.e., if the CLP on May 15 is more than 598,000 ac-ft, the Target Storage Curve during the following 12-month period starting on August 1 shall be Target Storage Curve A defined in the following table:

Target Storage Curve A

(PG&E “3%” “Low Envelope”)

If a water year is classified as “Very Wet” on May 15 for the purpose of the summer flow specification, Target Storage Curve A shall be used in the following 12-month period starting on August 1.

Day	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
1	69184	55901	41089	28997	23363	22758	30383	49507	70555	80640	82313	78353
2	68806	55431	40574	28709	23263	22805	30793	50400	71058	80830	82255	78157
3	68429	54960	40060	28422	23163	22852	31203	51292	71561	81020	82197	77960
4	68052	54490	39546	28134	23063	22899	31613	52184	72065	81210	82139	77763
5	67674	54019	39032	27846	22962	22946	32023	53077	72568	81400	82081	77567
6	67297	53549	38518	27558	22862	22993	32433	53969	73071	81590	82023	77370
7	66919	53078	38004	27270	22762	23040	32943	54861	73574	81780	81965	77173
8	66542	52608	37490	26982	22662	23087	33253	55754	74077	81970	81908	76977
9	66165	52137	36976	26694	22562	23133	33663	56646	74581	82160	81848	76780
10	65787	51667	36462	26406	22461	23180	34073	57538	75084	82350	81790	76583
11	65410	51196	35948	26119	22361	23227	34482	58431	75587	82540	81732	76387
12	65032	50726	35433	25831	22261	23274	34892	59323	76090	82730	81674	76190
13	64655	50255	34919	25543	22161	23321	35302	60215	76594	82920	81616	75933
14	64277	49785	34405	25255	22060	23368	35712	61108	77097	83110	81558	75797
15	63900	49314	33891	24967	21960	23415	36122	62000	77600	83300	81500	75600
16	63429	48800	33603	24867	22007	23825	37014	62503	77790	83242	81303	75223
17	62959	48286	33315	24767	22054	24235	37907	63006	77980	83184	81107	74845
18	62488	47772	33027	24666	22101	24645	38799	63510	78170	83126	80910	74468
19	62018	47258	32740	24566	22148	25055	39691	64013	78360	83068	80713	74090
20	61547	46744	32452	24466	22195	25465	40584	64516	78550	83010	80517	73713
21	61077	46230	32164	24366	22242	25875	41476	65019	78740	82952	80320	73335
22	60606	45715	31876	24265	22289	26284	42368	65523	78930	82894	80123	72958
23	60136	45201	31588	24165	22336	26694	43261	66026	79120	82835	79927	72581
24	59665	44687	31300	24065	22383	27104	44153	66529	79310	82777	79730	72203
25	59195	44173	31012	23965	22429	27514	45046	67032	79500	82719	79533	71826
26	58724	43659	30725	23865	22476	27924	45938	67535	79690	82661	79337	71448
27	58254	43145	30437	23764	22523	28334	46830	68039	79880	82603	79140	71071
28	57783	42631	30149	23664	22570	28744	47723	68542	80070	82545	78943	70694
29	57313	42117	29861	23564	22617	29154	47723	69045	80260	82487	78747	70316
30	56842	41603	29573	23464	22664	29564		69548	80450	82429	78550	69939
31	56372		29285		22711	29974		70052		82371		69561

- If a water year is classified as either “Wet” or “Dry,” i.e., if the *CLP* on May 15 is between 171,600 ac-ft and 598,400 ac-ft, the Target Storage Curve during the following 12-month period starting on August 1 shall be Target Storage Curve B defined in the following table:

Target Storage Curve B (PG&E “15%” “Low Envelope”)

If a water year is classified as either “Wet” or “Dry” on May 15 for the purpose of the summer flow specification,

Target Storage Curve B shall be used in the following 12-month period starting on August 1.

Day	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
1	69184	56590	43363	32767	27830	27300	33982	50902	70555	80640	82313	78353
2	68806	56160	42912	32515	27742	27341	34341	51694	71058	80830	82255	78157
3	68429	55730	42462	32263	27655	27382	34700	52487	71561	81020	82197	77960
4	68052	55300	42011	32010	27567	27423	35059	53280	72065	81210	82139	77763
5	67674	54870	41561	31758	27479	27464	35419	54073	72568	81400	82081	77567
6	67297	54440	41110	31506	27391	27505	35778	54865	73071	81590	82023	77370
7	66919	54010	40660	31254	27303	27546	36137	55658	73574	81780	81965	77173
8	66542	53580	40209	31001	27215	27588	36496	56451	74077	81970	81906	76977
9	66165	53150	39759	30749	27128	27629	36855	57244	74581	82160	81848	76780
10	65787	52720	39308	30497	27040	27670	37215	58036	75084	82350	81790	76583
11	65410	52290	38858	30245	26952	27711	37574	58829	75587	82540	81732	76387
12	65032	51860	38407	29992	26864	27752	37933	59622	76090	82730	81674	76190
13	64655	51430	37957	29740	26776	27793	38292	60415	76594	82920	81616	75993
14	64277	51000	37506	29488	26688	27834	38651	61207	77097	83110	81558	75797
15	63900	50571	37056	29236	26601	27876	39011	62000	77600	83300	81500	75600
16	63470	50120	36803	29148	26642	28235	39803	62503	77790	83242	81303	75223
17	63040	49670	36551	29060	26683	28594	40596	63006	77980	83184	81107	74845
18	62610	49219	36299	28972	26724	28953	41389	63510	78170	83126	80910	74468
19	62180	48769	36046	28884	26765	29312	42181	64013	78360	83068	80713	74090
20	61750	48318	35794	28796	26806	29671	42974	64516	78550	83010	80517	73713
21	61320	47868	35542	28709	26847	30031	43767	65019	78740	82952	80320	73335
22	60890	47417	35290	28621	26888	30390	44560	65523	78930	82894	80123	72958
23	60460	46967	35037	28533	26930	30749	45352	66026	79120	82835	79927	72581
24	60030	46516	34785	28445	26971	31108	46145	66529	79310	82777	79730	72203
25	59600	46066	34533	28357	27012	31467	46938	67032	79500	82719	79533	71826
26	59170	45615	34281	28269	27053	31827	47731	67535	79690	82661	79337	71448
27	58740	45165	34028	28182	27094	32186	48523	68039	79880	82603	79140	71071
28	58310	44714	33776	28094	27135	32545	49316	68542	80070	82545	78943	70694
29	57880	44264	33524	28006	27176	32904	49316	69045	80260	82487	78747	70316
30	57450	43813	33272	27918	27217	33263		69548	80450	82429	78550	69939
31	57020		33019		27259	33623		70052		82371		69561

- If a water year is classified as “very Dry,” i.e., if the *CLP* on May 15 is less than 171,6000 ac-ft, the Target Storage Curve during the following 12-month period starting on August 1 shall be Target Storage Curve C defined in the following table:

Target Storage Curve C (PG&E “25%” “Low Envelope”)

If a water year is classified as “Very Dry” on May 15 for the purpose of the summer flow specification,

Target Storage Curve C shall be used in the following 12-month period starting on August 1.

Day	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
1	69184	57164	45258	35909	31553	31084	36980	52064	70555	80640	82313	78353
2	68806	56768	44860	35686	31475	31121	37297	52773	71058	80830	82255	78157
3	68429	56372	44463	35463	31398	31157	37614	53483	71561	81020	82197	77960
4	68052	55976	44065	35241	31320	31193	37931	54193	72065	81210	82139	77763
5	67674	55580	43668	35018	31243	31230	38248	54903	72568	81400	82081	77567
6	67297	55183	43270	34796	31165	31266	38565	55612	73071	81590	82023	77370
7	66919	54787	42783	34573	31088	31302	38882	56322	73574	81780	81965	77173
8	66542	54391	42475	34351	31010	31338	39199	57032	74077	81970	81906	76977
9	66165	53995	42078	34128	30933	31375	39516	57742	74581	82160	81848	76780
10	65787	53599	41680	33905	30885	31411	39833	58451	75084	82350	81790	76583
11	65410	53202	41283	33683	30778	31447	40150	59161	75587	82540	81732	76387
12	65032	52806	40885	33460	30700	31484	40467	59871	76090	82730	81674	76190
13	64655	52410	40488	33238	30623	31520	40784	60581	76594	82920	81616	75993
14	64277	52014	40090	33015	30545	31556	41101	61290	77097	83110	81558	75797
15	63900	51618	39693	32793	30468	31593	41418	62000	77600	83300	81500	75600
16	63504	51220	39470	32715	30504	31909	42127	62503	77790	83242	81303	75223
17	63108	50823	39247	32638	30540	32226	42837	63006	77980	83184	81107	74845
18	62711	50425	39025	32560	30576	32543	43547	63510	78170	83126	80910	74468
19	62315	50028	38802	32483	30613	32860	44256	64013	78360	83068	80713	74090
20	61919	49630	38580	32405	30649	33177	44966	64516	78550	83010	80517	73713
21	61523	49233	38357	32328	30685	33494	45676	65019	78740	82952	80320	73335
22	61127	48835	38134	32250	30722	33811	46386	65523	78930	82894	80123	72958
23	60730	48438	37912	32173	30758	34128	47095	66026	79120	82835	79927	72581
24	60334	48040	37689	32095	30794	34445	47805	66529	79310	82777	79730	72203
25	59938	47643	37467	32018	30830	34762	48515	67032	79500	82719	79533	71826
26	59542	47245	37244	31940	30867	35079	49225	67535	79690	82661	79337	71448
27	59145	46848	37022	31863	30903	35396	49934	68039	79880	82603	79140	71071
28	58749	46450	36799	31785	30939	35713	50644	68542	80070	82545	78943	70694
29	58353	46053	36576	31708	30976	36060	50644	69045	80260	82487	78747	70316
30	57957	45655	36354	31630	31012	36347		69548	80450	82429	78550	69939
31	57561		36131		31048	36663		70052		82371		69561

F. Non-Flow Provisions

- In addition to flow provisions, this proposal also calls for the following non-flow measures:

F.1. Cape Horn Dam will be modified to allow accurate regulation of the required minimum flows.

F.2. PG&E shall provide \$60,000 annually in order to fund the costs of implementing the pikeminnow suppression program and monitoring requirements of this RPA and Incidental Take Statement. PG&E shall credit an annual additional \$60,000 to the Fund on January 1 of each year after the first year for the remaining term of the license, including any annual licenses which may be issued after license expiration. The unspent balance of the Fund shall accrue interest at the 90-day commercial paper rate as determined by the Federal Reserve Bank of New York, credited on a quarterly basis. The account can be used for the evaluation of the impacts of higher summer flows on salmonid and pikeminnow abundance and related predation impacts, pikeminnow suppression efforts, Chinook salmon hatchery supplementation, or funding for a scientific aide at Van Arsdale Fishery Station. Decisions on the expenditures to be charged to the Fund will be made by National Marine Fisheries Service (NMFS) in consultation with PG&E, the resource agencies, and RVIT. PG&E shall distribute an accounting statement to NMFS within 30 days after January 1 of each year after the fund is established, summarizing the Fund balance, accrued interest, and previously charged accounts.

G. Implementation and Compliance Issues

G.1. PG&E shall develop and maintain a publicly accessible Internet site on which the relevant flow measurements and the calculated minimum flow requirements can be reviewed by the fisheries resource agencies and general public.

G.2. PG&E shall, in coordination with the resource agencies, develop a five year adaptive management plan for the suppression of Sacramento pikeminnow. The plan should concentrate on efforts to suppress pikeminnow in the reach of the Eel River between Scott Dam and Van Arsdale Reservoir, in Van Arsdale Reservoir and around and below both dams. The adaptive management plan should accomplish the following objectives:

- Quantify pikeminnow and steelhead distribution, abundance, and size-class structure in the Eel River between Scott and Cape Horn Dams.
- Employ and evaluate various techniques for pikeminnow suppression.
- Monitor immediate effects of suppression efforts on rearing steelhead,

pikeminnow, and other species.

- Monitor the response of pikeminnow and rearing juvenile steelhead at the end of the summer following suppression efforts.

Appendix E-2
Consultation Record

This table contains records of stakeholder consultation meetings held during development of the Potter Valley (FERC P-77) License Amendment Application in summer and fall of 2024.

DATE	TITLE	PURPOSE	AGENDA SUMMARY	PARTICIPANTS	SUMMARY
6/13/2024	PV Amendment Consultation with Fish Agencies	Introduce amendment to NMFS, CDFW, RVIT, and USFWS.	<ul style="list-style-type: none"> - Introductions - Purpose - Changes to RPA Attachment A - Water Temperature Model & letters of support of variance - Next steps and action items 	<p>Camas: Matt Robart, Diane Barr</p> <p>PG&E: Chadwick McCreedy, Andrew Anderson, Ed Cheslak, Sky Ramirez-Doble, Anna Urias</p> <p>NMFS: Josh Fuller, Nick Easterbrook</p> <p>CDFW: Allan Renger, Chris Ramsey</p> <p>RVIT: Scott McBain</p> <p>USFWS: Josh Boyce</p>	<p>Josh Fuller and Scott McBain were initially in favor of keeping the amendment consistent with the annual variance requests (adaptive to water year) rather than abandoning water year types. Chadwick explained that setting date-based flows will streamline FERC's process since decisions will not need to be made in real time.</p> <p>Discussion of RPA Attachment A E.4 - potentially need to update but need Michelle's input.</p> <p>Scott expressed concern regarding getting assurance from PG&E that they will not supply PVID with more water than the FERC license allows (since PG&E has discretion to manage flow).</p> <p>Biological impacts: agreement among agencies that amendment implementation will improve habitat. Better to have "optimal" temperature for a short time period rather than "marginal" temperature for a long time period.</p> <p>Trout stocking in the East Branch Russian River can continue with only 5 cfs flow (track record of this), so no impact to recreational fishery.</p> <p>Agencies agreed to submit letters of support for 2024 variance request.</p> <p>Scott agreed to run the spreadsheet model for amendment conditions, meet again on 6/27 at 9am.</p>
7/1/2024	PV Amendment Consultation with US Forest Service	Introduce amendment to USFS.	<ul style="list-style-type: none"> - Introductions - Purpose - Changes to RPA Attachment A - Next steps and action items 	<p>Camas: Matt Robart, Diane Barr</p> <p>PG&E: Chadwick McCreedy, Andrew Anderson, Mike Evans, Michelle Lent, Sky Ramirez-Doble</p> <p>USFS: Dawn Alvarez, Frank Aebly, Josh Abel, Japhia Huhndorf</p>	<p>USFS expressed that the amendment analysis should include radial gates being left open. Concerns about invasive species and OHV use in the exposed lakebed.</p> <p>Discussion centered around clarification on why the amendment is needed and what it will include. There was some confusion over water temperatures in wet vs. dry years, how the RPA addresses water year type, and why variances have been needed even in normal and wet years.</p> <p>PG&E will conduct more modeling and conversations with fishery agencies, decide on the amendment flow regime, and set another consultation call to discuss with USFS in the next month or so.</p>

DATE	TITLE	PURPOSE	AGENDA SUMMARY	PARTICIPANTS	SUMMARY
7/2/2024	PV Amendment Follow-up with Fish Agencies	Discuss additional modeling to show effects of amendment flows.	- No formal agenda	Camas: Matt Robart, Diane Barr PG&E: Chadwick McCreedy, Andrew Anderson, Tony Gigliotti, Michelle Lent, Sky Ramirez-Doble, Anna Urias Kleinschmidt: Craig Addley, Vanessa Martinez NMFS: Nick Easterbrook CDFW: Matt Myers, Allan Renger, Chris Ramsey, Ashley Worth RVIT: Scott McBain USFWS: Reuben Smit	Discussion of FERC's approval of the 2024 variance request, and reduction of EBRR flow to 5 cfs. Agencies to meet independently and make a decision. Discussion of water temperature modeling results using proposed amendment flows, and agreement to add 2023 to the model and to look at Lake Pillsbury storage under the Proposed Amendment flow regime.
7/30/2024	PV Amendment Follow-up with Fish Agencies	Discuss additional modeling to show effects of amendment flows.	- No formal agenda	Camas: Matt Robart PG&E: Chadwick McCreedy, Andrew Anderson, Ed Cheslak, Trevor Moore, Michelle Lent, Mike Evans, Matthew Colwell NMFS: Josh Fuller, Nick Easterbrook CDFW: Allan Renger, Chris Ramsey, Matt Myers, Matthew Meyers RVIT: Scott McBain USFWS: Josh Boyce	Agency buy-in on updated amendment flows. Keep E-2 minimum flow = 20 cfs. Presentation of effects on storage and water temperature. Agreement to set SWB consultation, invite fish agency staff.

DATE	TITLE	PURPOSE	AGENDA SUMMARY	PARTICIPANTS	SUMMARY
8/16/2024	PV Amendment SWRCB Coordination	Present amendment details to SWRCB staff, discuss need for 401 Certification.	Introductions Purpose/History Agency Coordination To-Date Proposed Amendment Flows Effects on Lake Pillsbury Storage Water Temperature Model Results Open Discussion Next Steps	Camas: Matt Robart, Diane Barr PG&E: Chadwick McCready, Andrew Anderson, Ed Cheslak, Trevor Moore, Michelle Lent, Kim Ognisty, Janet Walther, Matt Joseph SWRCB: Parker Thaler, Derek Wadsworth, Nathan Fisch, Dana Heinrich, Allison Rabe, Erin Ragazzi NMFS: Josh Fuller, Nick Easterbrook CDFW: Chris Ramsey, Matt Myers	PG&E team presented the slide deck, detailing specific RPA elements to be modified in the Proposed Amendment, effects on storage in Lake Pillsbury, and results of Eel River temperature modeling. Discussion included clarification of conservation of water in Lake Pillsbury, discretionary releases to the EBRR during spill, and temperature in the EBRR. SWRCB indicated that a 401 Certification is needed for a license amendment with the potential to affect water quality. The certification process could be as long as one year but could be less than one month. SWRCB can not make a time estimate until they see an application.
8/20/2024	PV Amendment USFS Follow-up	Present amendment details to USFS staff.	Introductions Purpose/History Agency Coordination To-Date Proposed Amendment Flows Effects on Lake Pillsbury Storage Water Temperature Model Results Open Discussion Next Steps	Camas: Matt Robart, Diane Barr PG&E: Chadwick McCready, Andrew Anderson, Michelle Lent, Ed Cheslak USFS: Josh Abel, Frank Aebly (but only for first 20 minutes)	PG&E team presented the slide deck, detailing specific RPA elements to be modified in the Proposed Amendment, effects on storage in Lake Pillsbury, and results of Eel River temperature modeling. Discussion included conservation of cold water in Lake Pillsbury, positive effects on fire management ability, recreation, and fisheries. Josh Abel indicated that USFS is on board with the amendment.
9/3/2024	PVID Amendment Coordination Meeting	Present amendment details to PVID.	Introductions Purpose/History Agency Coordination To-Date Proposed Amendment Flows Effects on Lake Pillsbury Storage Water Temperature Model Results Open Discussion Next Steps	Camas: Matt Robart, Diane Barr PG&E: Chadwick McCready, Andrew Anderson, Michelle Lent, Ed Cheslak, Mike Evans, Trevor Moore, Tony Gigliotti, Janet Walther PVID: Janet Pauli, Steve Elliot, Clifford Paulin	PG&E team presented the slide deck and answered questions regarding justification for curtailing EBRR flows early in the summer. PG&E presented Lake Pillsbury storage modeling and Eel River temperature modeling results and agreed to supply the slide deck for PVID's further review. PVID indicated that they have a board meeting on 9/18 and will follow up with PG&E after that with additional questions and comments on the proposed amendment. On 10/29/2024, an email was sent to PVID requesting comments. No response was received.

DATE	TITLE	PURPOSE	AGENDA SUMMARY	PARTICIPANTS	SUMMARY
9/19/2024	SWRCB Comments	Provide comments on the slide deck from 8/16/2024 and the draft amendment application documents provided to SWRCB on 8/16/2024.	NA	NA	SWRCB requests an application for a Clean Water Act Section 401 Water Quality Certification for the non-capacity license amendment. The SWRCB requests information regarding environmental and water quality effects of the amendment, water balance operations analysis, PVID deliveries sensitivity analysis, temperature model analysis, critical water year return interval analysis, spawning habitat analysis, characterization of EBRR fish and wildlife populations, and an assessment of wetland resources in the EBRR, Eel River, and Lake Pillsbury.
11/14/2024	Documents provided for review	Draft application package sent to CDFW, NMFS, USFWS, and RVIT.	NA	NA	PG&E provided draft documents to the agencies by email. Comments and questions were requested by 12/15/2024.
11/15/2024	Potter Valley Amendment Review	Provide a walkthrough of the Amendment with NMFS, CDFW, and RVIT	NA	Camas: Matt Robart PG&E: Chadwick McCready, Andrew Anderson, Tony Gigliotti, Brian Williamshen NMFS: Josh Fuller, Nick Easterbrook CDFW: Allan Renger, Chris Ramsey, Matt Myers, Matthew Meyers RVIT: Scott McBain USFWS: Josh Boyce	<p>PG&E team presented the application package documents to the agencies to provide an introduction to the documents prior to full review by the agencies.</p> <p>Discussion consisted of review process timelines and procedures and establishing consistent use of language throughout the documents to align with other documents in the record.</p>

DATE	TITLE	PURPOSE	AGENDA SUMMARY	PARTICIPANTS	SUMMARY
11/26/2024	Potter Valley Amendment Review	Provide a walkthrough of the Amendment with USFS	NA	Camas: Matt Robart, Diane Barr PG&E: Chadwick McCready, Andrew Anderson, Trevor Moore, Tony Gigliotti, Michelle Lent, Ed Cheslak USFS: Josh Abel, Frank Aebly, Dawn Alvarez	PG&E team presented the slide deck, detailing specific RPA elements to be modified in the Proposed Amendment, effects on storage in Lake Pillsbury, and results of Eel River temperature modeling. Discussion included conservation of cold water in Lake Pillsbury, positive effects on fire management ability, recreation, and fisheries. USFS staff indicated support for the amendment as presented. Following the call, PG&E distributed the draft application package for USFS review.
12/4/2024	NMFS Comments Received	NMFS provided comments on the draft application package.	NA	NA	NMFS provided comments on the draft application package by email.
12/5/2024	CDFW Comments Received	CDFW provided comments on the draft application package.	NA	NA	CDFW provided comments on the draft application package by email.
12/14/2024	RVIT Comments Received	RVIT provided comments on the draft application package.	NA	NA	RVIT provided comments on the draft application package by email.
12/5/2024	SWRCB WQC Application Meeting	PG&E holds pre-filing meeting with SWRCB	NA	PG&E: Chadwick McCready, Janet Walther, Kim Ognisty, Tony Gigliotti SWRCB: Derek Wadsworth, Erin Ragazzi, Parker Thaler, Erik Ekdahl, Jonathan Bishop	

DATE	TITLE	PURPOSE	AGENDA SUMMARY	PARTICIPANTS	SUMMARY
12/31/2024	Amendment Package Comments Addressed	PG&E provides response to NMFS, CDFW, RVIT comments	NA	NA	Red-lined documents addressing comments provided to NMFS, CDFW, RVIT, USFWS.

ENCLOSURE 4

From: [Joshua Fuller - NOAA Federal](#)
To: [McCready, Chadwick](#)
Cc: [Scott McBain](#); [Matt Myers](#); [Renger, Allan@Wildlife](#); [Chris Ramsey](#); [Boyce, Josh](#); [nicholas.easterbrook@noaa.gov](#); [Moore, Trevor](#); [Matt Robart](#); [Anderson, Andrew](#); [Lent, Michelle](#); [Diane Barr](#); [Joseph, Matthew](#); [Gigliotti, Tony](#); [Cheslak, Edward](#); [Steve Edmondson](#); [Jeffrey Jahn](#); [Kormos, Brett@Wildlife](#)
Subject: Re: Potter Valley Flow Amendment: Red-lined and Clean Final Drafts
Date: Tuesday, January 21, 2025 11:10:24 AM

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Hello Chadwick,

Thank you for the opportunity to review and comment on PG&E's Potter Valley Hydroelectric Project (FERC No. 77-CA) *Application for Non-Capacity License Amendment*, received via email on December 31, 2024. The National Marine Fisheries Service (NMFS) has provided technical assistance to PG&E on annual variances for more than a decade to ensure suitable environmental flows for salmonids in the Eel River while balancing the water supply demands of the Russian River.

With a reduction of approximately 20,000 acre-feet in water storage due to seismic risks associated with Scott Dam, longer-term solutions for reservoir management and instream flows have become increasingly critical to conserve water in Lake Pillsbury during this interim period leading up to project decommissioning and license surrender. The proposed measures in this license amendment are essential for managing suitable instream flows and water temperature conditions for federally ESA-listed salmonids inhabiting the Eel River downstream of Scott Dam. The implementation of annual variances has demonstrated that appropriate adjustments to reservoir operations can significantly extend the longevity of cold-water storage in Lake Pillsbury and substantially reduce the duration of salmonid exposure to unsuitable water temperatures downstream of Scott Dam.

NMFS believes that the reservoir management and flow components of this license amendment application, specifically regarding Eel River instream flows, align with the intent of NMFS' 2002 Biological Opinion, including the summer flow component of the Reasonable and Prudent Alternative and Reasonable and Prudent Measure 8, Element 13. Furthermore, as outlined in NMFS' March 16, 2022, letter and reiterated in our October 13, 2022, letter to FERC, we believe this license amendment application satisfies the *Interim Protective Measures* as previously requested.

NMFS will continue to provide technical assistance to PG&E and FERC on Potter Valley Project operations to support the conservation and protection of ESA-listed salmonids as PG&E advances through the FERC License Surrender and Decommissioning proceedings.

Please let me know if you have any questions or comments regarding NMFS' technical assistance and support for this license amendment.

Thank you,
Joshua Fuller

On Tue, Dec 31, 2024 at 1:49 PM McCready, Chadwick <COMM@pge.com> wrote:

Sorry for the double email. Clean versions of the final documents can be found attached to this email.



Chadwick McCready

Senior Hydro License Coordinator | Power Generation

Pacific Gas & Electric Company

C: (530) 685-5710 | e: Chadwick.McCready@pge.com

From: McCready, Chadwick

Sent: Tuesday, December 31, 2024 1:35 PM

To: Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Scott McBain <scott@mcbainassociates.com>; Matt Myers <Matt.Myers@wildlife.ca.gov>; Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Chris Ramsey <chris.ramsey@wildlife.ca.gov>; Boyce, Josh <josh_boyce@fws.gov>; nicholas.easterbrook@noaa.gov

Cc: Moore, Trevor <TQMI@pge.com>; Matt Robart <Matt@camasllc.com>; Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Diane Barr <Diane@camasllc.com>; Joseph, Matthew <MWJA@pge.com>; Gigliotti, Tony <T1GF@pge.com>; Cheslak, Edward <EFC3@pge.com>

Subject: Potter Valley Flow Amendment: Red-lined and Clean Final Drafts

Happy New Year's Eve folks,

Thanks for your support on reviewing the Potter Valley License Amendment Application. We have completed addressing your comments and edits and have attached both red-lined and clean final documents. Additionally, we have included the comment response matrix RVIT provided, along with PG&E's responses. We will be preparing to submit to FERC in the very near future. We would appreciate email concurrence/support for the proposed amendment so that we can include a complete consultation record with the application, as

well as formal letters to FERC following the submission of the application.

Thanks for your help and please let me know if you have any questions. We will be in discussion soon.

Thanks,



Chadwick McCreedy

Senior Hydro License Coordinator | Power Generation

Pacific Gas & Electric Company

C: (530) 685-5710 | e: Chadwick.McCreedy@pge.com

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*Joshua Fuller*  
*North Coast Branch Supervisor*  
*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*  
*Cell: 707-531-0711*  
[Joshua.Fuller@noaa.gov](mailto:Joshua.Fuller@noaa.gov)

**From:** [Boyce, Josh](#)  
**To:** [McCready, Chadwick](#)  
**Subject:** Re: [EXTERNAL] RE: Potter Valley Flow Amendment: Red-lined and Clean Final Drafts  
**Date:** Thursday, January 16, 2025 6:03:33 AM

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Mr. McCready,

The Arcata Fish and Wildlife Office (AFWO/USFWS) has reviewed PG&E's final package for an Application for Non-Capacity License Amendment for the Potter Valley Project (P-77). AFWO/USFWS does not have any comments at this time and we concur/support PGE filing the completed package with FERC.

Josh Boyce, Ph.D.  
Supervisory Fish Biologist, USFWS  
Arcata, CA  
707-825-5193 (office)  
707-353-0631 (cell)

---

**From:** Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>  
**Sent:** Monday, January 6, 2025 11:58 AM  
**To:** McCready, Chadwick <COMM@pge.com>; Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Scott McBain <scott@mcbainassociates.com>; Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Ramsey, Chris@Wildlife <Chris.Ramsey@wildlife.ca.gov>; Boyce, Josh <josh\_boyce@fws.gov>; nicholas.easterbrook@noaa.gov <nicholas.easterbrook@noaa.gov>  
**Cc:** Moore, Trevor <TQMI@pge.com>; Matt Robart <Matt@camasllc.com>; Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Diane Barr <Diane@camasllc.com>; Joseph, Matthew <MWJA@pge.com>; Gigliotti, Tony <T1GF@pge.com>; Cheslak, Edward <EFC3@pge.com>  
**Subject:** [EXTERNAL] RE: Potter Valley Flow Amendment: Red-lined and Clean Final Drafts

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Mr. McCready,

The California Department of Fish and Wildlife (CDFW) has reviewed PG&E's final package for an Application for Non-Capacity License Amendment for the Potter Valley Project (P-77). CDFW appreciates PG&E addressing and including our comments provided on December 5, 2024. CDFW

does not have any additional comments at this time and we concur/support PGE filing the completed package with FERC. CDFW will file an additional support letter to FERC once FERC has received the package and solicits intervenors and comments.

Matt Myers  
Senior Environmental Scientist  
California Department of Fish and Wildlife  
530-638-6027 (cell)

---

**From:** McCready, Chadwick <COMM@pge.com>

**Sent:** Tuesday, December 31, 2024 1:35 PM

**To:** Joshua Fuller - NOAA Federal <joshua.fuller@noaa.gov>; Scott McBain <scott@mcbainassociates.com>; Myers, Matt@Wildlife <Matt.Myers@wildlife.ca.gov>; Renger, Allan@Wildlife <Allan.Renger@wildlife.ca.gov>; Ramsey, Chris@Wildlife <Chris.Ramsey@wildlife.ca.gov>; Boyce, Josh <josh\_boyce@fws.gov>; nicholas.easterbrook@noaa.gov

**Cc:** Moore, Trevor <TQMI@pge.com>; Matt Robart <Matt@camasllc.com>; Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Diane Barr <Diane@camasllc.com>; Joseph, Matthew <MWJA@pge.com>; Gigliotti, Tony <T1GF@pge.com>; Cheslak, Edward <EFC3@pge.com>

**Subject:** Potter Valley Flow Amendment: Red-lined and Clean Final Drafts

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Happy New Year's Eve folks,

Thanks for your support on reviewing the Potter Valley License Amendment Application. We have completed addressing your comments and edits and have attached both red-lined and clean final documents. Additionally, we have included the comment response matrix RVIT provided, along with PG&E's responses. We will be preparing to submit to FERC in the very near future. We would appreciate email concurrence/support for the proposed amendment so that we can include a complete consultation record with the application, as well as formal letters to FERC following the submission of the application.

Thanks for your help and please let me know if you have any questions. We will be in discussion soon.

Thanks,



**Chadwick McCready**

*Senior Hydro License Coordinator | Power Generation*  
Pacific Gas & Electric Company

C: (530) 685-5710 | e: [Chadwick.Mccready@pge.com](mailto:Chadwick.Mccready@pge.com)

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**From:** [Scott McBain](#)  
**To:** [McCready, Chadwick](#); [Matt Myers](#); [nicholas.easterbrook@noaa.gov](mailto:nicholas.easterbrook@noaa.gov); [Joshua Fuller - NOAA Federal](#); [Renger, Allan@Wildlife](#); [Chris Ramsey](#); [Boyce, Josh](#)  
**Cc:** [Moore, Trevor](#); [Anderson, Andrew](#); [Lent, Michelle](#); [Matt Robart](#); [Diane Barr](#); [Erica Costa](#); [jruss@rvit.org](mailto:jruss@rvit.org); [Lewis Whipple](#)  
**Subject:** RE: For Review- Draft Potter Valley RPA Flow Amendment Package  
**Date:** Tuesday, December 31, 2024 12:35:25 PM

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Mr. McCready,

As a technical consultant to the Round Valley Indian Tribes (RVIT), I have carefully reviewed the draft License Amendment Application (LAA) and provided comments to you earlier this month. As you know, I have been participating in annual flow variances for many years, and with the reduced storage capacity and associated cold water pool in Lake Pillsbury, it is very important to develop a longer-term solution to flow management on the Potter Valley Project as PG&E progresses through the License Surrender Application and Decommissioning process. In the meantime, the flow management proposed in the LAA will best achieve the intended benefits of the 2003 NMFS Reasonable and Prudent Actions (RPA) to listed salmonids in the Eel River basin by helping retain the remaining cold-water pool in Lake Pillsbury under the gates-open management (20,000 ac-ft loss of storage) that will occur until the PVP is decommissioned. As we have seen in recent years, flow management that mimics that proposed in the LAA have been shown to reduce end-of-summer water temperatures immediately downstream of Scott Dam by 1-2 degrees Celsius, as well as reducing the duration of elevated release water temperatures, both of which improve juvenile salmonid survival and reduce predation by non-native Sacramento pikeminnow. Based on my technical review of the LAA, and my understanding of the collaborative analyses that PG&E and the agencies/tribes have performed together over the years, the RVIT supports the technical merits of the proposed LAA flows to best support the native aquatic and terrestrial organisms that inhabit the Eel River downstream of Scott Dam. Please contact me if you have any technical questions,

Scott McBain  
Consultant to the Round Valley Indian Tribes

---

**From:** McCready, Chadwick <COMM@pge.com>  
**Sent:** Thursday, November 14, 2024 7:28 PM  
**To:** Matt Myers <Matt.Myers@wildlife.ca.gov>; [nicholas.easterbrook@noaa.gov](mailto:nicholas.easterbrook@noaa.gov); Joshua Fuller - NOAA Federal <[joshua.fuller@noaa.gov](mailto:joshua.fuller@noaa.gov)>; Renger, Allan@Wildlife <[Allan.Renger@wildlife.ca.gov](mailto:Allan.Renger@wildlife.ca.gov)>;

Chris Ramsey <chris.ramsey@wildlife.ca.gov>; Bob Coey - NMFS <bob.coey@noaa.gov>; Scott McBain <scott@mcbainassociates.com>; Boyce, Josh <josh\_boyce@fws.gov>

**Cc:** Moore, Trevor <TQMI@pge.com>; Anderson, Andrew <A5AK@pge.com>; Lent, Michelle <M4LQ@pge.com>; Matt Robart <Matt@camasllc.com>; Diane Barr <Diane@camasllc.com>

**Subject:** For Review- Draft Potter Valley RPA Flow Amendment Package

Good evening folks,

Attached for your review is the draft Potter Valley RPA flow amendment package. The package consists of the following documents:

FERC Cover Letter

Volume I - AIR Comment Responses

Volume II – Amendment Application

Volume III – Exhibit E

Red-lined RPA Appendix A

Comment Response Matrix

Please review the application package and provide any edits or comments (using the attached matrix) by **Monday, December 16, 2024** as PG&E is targeting a submittal by the end of the year. We are also hoping to receive letter's of support from your respective agencies within or shortly following the review period so we can include those in our FERC filing.

We can discuss details and answer any questions you have at our meeting tomorrow.

Thank you,



**Chadwick McCready**

*Hydro License Coordinator | Power Generation*

Pacific Gas & Electric Company

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