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BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

UNITED STATES OF AMERICA

In re. Notice of Intent to File License
Application for a New License and
Commencing Pre-filing Process; Request for
Comments and Study Requests

Project No. 77-285 – California Potter Valley
Project, Pacific Gas & Electric Company,
Applicant

CONSERVATION GROUP’S COMMENTS ON PROPOSED STUDY PLAN

INTRODUCTION

The following comments on PG&E's final draft Proposed Study Plan are offered on behalf of American Whitewater, California Sportfishing Protection Alliance, California Trout, Friends of the Eel River, Friends of the River, Native Fish Society, and Trout Unlimited (collectively, "Conservation Groups"). The Proposed Study Plan was filed by PG&E on September 14, 2017 as part of the new license application process for the Potter Valley Hydroelectric Project, P-77 (hereafter, the "Project").

The Conservation Groups seek to restore and conserve the Wild and Scenic Eel River's outstanding resource values, particularly the steelhead, chinook and coho salmon runs. These species are listed as "threatened" under the federal Endangered Species Act and are especially affected by the operation of the Project. The Conservation Groups believe the existing license has not achieved a proper balance between power and non-power uses. Our goal is to ensure any new license better protects the beneficial uses of the Eel River and is in the public interest. These comments are offered for several purposes. First, the Conservation Groups seek to assist in improving both the proposed Study Plans and the studies to be conducted under those plans. This will ensure that reliable data that is relevant to the proposed relicensing of the Project is produced in a timely manner. It will also inform the relicensing process, including the development of license conditions which may be necessary to mitigate the environmental impacts of the Project.

Second, the Conservation Groups seek to assist FERC staff in its environmental review and ensure that all relevant and potentially significant environmental issues are identified and analyzed in an adequate Environmental Impact Statement (EIS), including the careful consideration of an adequately broad range of alternatives.

Third, the Conservation Groups encourage PG&E and FERC to reconsider their refusal to develop, and to require, Study Plans which would, in whole or in part, produce data and information necessary to analyze the potential costs and benefits of dam decommissioning and removal, including information needed to assess the logistics and associated costs of dam removal.

1 The Conservation Groups believe that dam removal and decommissioning of the Project
2 is a possible, indeed likely outcome of the FERC relicensing process. This conclusion is only
3 strengthened by the Project's repeated inability to meet the terms of the Reasonable and Prudent
4 Alternative – a condition of the current license imposed to protect salmonids listed under the
5 Endangered Species Act. By not requiring a study now, PG&E and FERC are limiting the
6 potential outcomes of the relicensing effort.

7 Finally, the Conservation Groups would like to thank PG&E for their commitment to the
8 Study Plan process and for convening Technical Working Group Discussions with stakeholders.
9 The Conservation Groups understand that this process can be adversarial and appreciate
10 PG&E's willingness to hold these meetings in an effort to reach consensus on the proposed
11 Study Plans. The following comments are meant to address the Conservation Group's greatest
12 concerns over the Proposed Study Plans, but should not be read as a complete and final list of
13 concerns voiced by the Conservation groups.

14 **I. Study Plans and Relicensing Process**

15 **A. The Relicensing Process does not Adequately Address the Project's Impacts.**

16 The Conservation Groups appreciate that PG&E has undertaken the Study Plan
17 development process in a way that includes stakeholders and seeks to come to a meaningful
18 consensus on key issues prior to draft Study Plan submission. Both the license holder, PG&E,
19 and its contractors, Cardno, have gone to considerable lengths to engage with stakeholders and
20 our various concerns.

21 However, FERC's organization and direction of the relicensing process raises additional
22 concerns, including its constraints on the development of Study Plans that are necessary to
23 address central questions presented by the proposed relicensing of the Project. These study plans
24 include: a comprehensive assessment of Project impacts on critically imperiled salmon and
25 steelhead listed under the federal and state Endangered Species Acts, and an assessment of the
26 seismic and geotechnical integrity especially of Scott Dam—an inquiry that has been hampered
27 by the inaccessibility of key documents relating to dam safety under an improperly broad
28 application of the Critical Energy Infrastructure Information classification.

1 As well, FERC should consider integrating the Study Plan development process into the
2 NEPA analysis already required in the relicensing process. Because Study Plan development is
3 not part of the formal FERC process, no provision has been made for preserving a record of the
4 discussions that took place around Study Plan development. The Conservation Groups are thus
5 providing these comments in part because FERC must ultimately address a number of issues
6 which have not, in our view, been adequately incorporated into the proposed Study Plans that
7 have emerged from the process to date.

8 The overall process is lacking in opportunities for effective public engagement. As well,
9 this particular process has been shaped by the fact that all meetings held to date have been in
10 Ukiah, outside the Eel River watershed and hours south of population centers in the lower Eel.
11 The Conservation Groups encourage FERC to provide additional opportunities for public
12 engagement in communities with a more direct connection to the Eel River.

13 **B. FERC Should Not Defer Decommissioning Studies Necessary to Inform the**
14 **Licensing Decision to the NEPA process.**

15 While it is appropriate and necessary that FERC address project decommissioning in its
16 EIS, it is not clear that the Study Plans will produce information FERC needs to adequately
17 address the questions surrounding decommissioning and dam removal. To fully analyze the
18 impacts of the Project on listed salmon and steelhead, on fisheries habitat, and on water quality,
19 FERC will need a more complete documentation of the direct, indirect, and cumulative effects
20 of the Project on these public trust resources than the Study Plans, as written, will provide.

21 FERC has made it clear that it will only require Study Plans which would produce
22 specific results useful in developing new conditions for a new license – not information that may
23 be needed to determine whether, and under what circumstances, the project should or could
24 legally be relicensed. But the process which the Study Plans are meant to inform is not simply
25 one of determining what conditions should be applied to a new license: FERC must consider
26 whether a new license should be issued at all.

27 To inform this decision, Study Plans must address whether the project can be cost-
28 effectively run without causing harm to public trust values including imperiled fisheries and

1 impaired water quality. Study Plans should gather information needed to address
2 decommissioning.

3 **C. Confidential Energy Infrastructure Information (CEII)**

4 In order to assess the safety risks associated with the Project, the Conservation Groups
5 request access to Critical Energy Infrastructure Information. Currently, this information is being
6 withheld as confidential, but unless this information is made public, there is no way of knowing
7 the true safety concerns surrounding the Project. For example, in assessing the integrity of Scott
8 Dam, it would be essential to be able to examine the original plans as well as geologic and
9 geotechnical engineering for the dam as designed and as it was actually built.

10 The Conservation Groups believe that this is a flaw in the relicensing system and that
11 until key pieces of information are released there can be no true determination of the long-term
12 safety concerns surrounding the Project.

13 **II. General Comments on Proposed Study Plans**

14 **A. Requested Studies not adopted in PSP**

15 The Conservation Groups are disappointed to note that PG&E did not adopt any of the
16 studies they requested. The TWG discussion process was constructed around the plans presented
17 by PG&E, so assembled stakeholders never discussed requested studies.

18 **1. Decommissioning Alternatives Decision Support Tools**

19 The Conservation Groups Study Request 1, titled *Development of Decision Support Tools*
20 *to Evaluate Potter Valley Project Decommissioning Alternatives*, proposed a suite of studies
21 needed to address the Conservation Groups' core question in the proposed relicensing of the
22 Project: does relicensing the Project for another thirty to fifty years make sense in view of the
23 Project's impacts on listed salmon and steelhead and clean water, given modern requirements
24 for fish passage? This study would have addressed these questions by presenting PG&E, FERC,
25 and the public with a clear analysis of the relative costs and benefits of alternative means of
26 adapting the Project to provide volitional fish passage to the upper basin and otherwise reducing
27 Project impacts on imperiled salmon and steelhead.

28 PG&E and FERC have not addressed the question of whether the Project should continue

1 to be licensed in this relicensing process. Table C-1 of the PSP’s Appendix explains that “PG&E
2 is not proposing decommissioning of the Project, and therefore, any studies related to
3 decommissioning are beyond the scope of the relicensing. Decommissioning is a separate
4 process governed under Title 18, Part 6.” This approach avoids what may be the central question
5 of this proceeding. We urge PG&E to include a Study Plan that looks at dam removal
6 alternatives.

7 **2. Life Cycle Model**

8 As the federal agency with trust responsibility for sea-run fisheries including salmon and
9 steelhead listed under the federal Endangered Species Act, and as the fisheries agency with
10 mandatory license conditioning authority under the Federal Power Act, the National Marine
11 Fisheries Service has a particularly indispensable role in the proposed relicensing of this Project.

12 The Conservation Groups are concerned that PG&E and FERC are not working with
13 NMFS to address Project impacts on fisheries, the need for fish passage into the upper Eel River
14 basin, and the potential for fisheries recovery. NMFS requested multiple studies, but none were
15 accepted by PG&E.

16 NMFS has strongly suggested PG&E create full life cycle models for salmonid
17 populations in the Eel River in order to fully assess the direct, indirect, and cumulative impacts
18 of the Project. NMFS has explained that such modeling, by incorporating “all potentially
19 constraining parameters, including flow ... has the capacity to identify the most limiting
20 constraints on a particular salmonid life stage. This type of tool will also provide NMFS and
21 other Project authorizing entities with information to properly evaluate alternative Project
22 scenarios (most notably passage scenarios) with defensible scientific merit.” (NMFS comments
23 on Proposed Study Plan, Dec 8 2017, p. 8)

24 The Conservation Groups strongly support NMFS’ request that PG&E prepare full life
25 cycle models for each relevant Eel River salmonid population. While the data PG&E proposes
26 to collect on specific life stages will be useful, the analytic tool that Conservation Groups need
27 to understand what the key limiting factors in fisheries recovery are in the Eel River is full life
28 cycle modeling.

3. Anadromous Salmonid Reintroduction Plan

NMFS requested preparation of an Anadromous Salmonid Reintroduction Plan. PG&E responded that the requested plan is beyond the scope required for relicensing, because such a plan is “only relevant if fish passage over Scott Dam is required in the new license.”

However, NMFS, which is the agency that can require fish passage at Scott Dam, has clearly stated that “NMFS anticipates that it may prescribe fish passage in this relicensing proceeding.” (NMFS comment on PSP, 12/8/17, p. 2) Moreover, the dams licensed under this Project have caused and continue to cause harms to fish listed under the Endangered Species Act. NMFS’s request indicates that relicensing will require fish passage and an acknowledgment that there are significant opportunities for fisheries recovery in the Eel River. Therefore, a salmonid reintroduction plan will be required before relicensing can proceed. It makes no sense to delay preparation of this plan now.

4. Dam Safety

In response to a study proposed by the Institute for Fisheries Resources, Table C-1 states that studies of Dam Safety are “Beyond the Scope Necessary for Relicensing/Unnecessary for Development of Future License Conditions.” It further explains:

“FERC relicensing which typically occurs every 30-50 years includes identifying potential Project-related impacts and new license conditions associated with routine operations and maintenance of the Project. Dam safety is an on-going process, addressed outside the relicensing process. The Project dams are subject to regular inspections and safety reviews by PG&E, state and federal agencies, and independent consultants. Engineers from PG&E, FERC, and the State of California Department of Water Resources Division of Dam Safety perform annual safety inspections on both Project dams. Additionally, every five years, PG&E retains a team of qualified, independent experts to perform a comprehensive engineering review and assessment to confirm that the dams are safe for continued operations.”

The Conservation Groups again request that relevant safety information on the dams associated with the Project, especially Scott Dam, be released so that stakeholders can be assured that the Project meets safety standards associated with the FERC process. In light of

1 events at Oroville Dam, now more than ever it is important to scrutinize dam safety operations.
2 Moreover, such an analysis is necessary to assess whether the Project is feasible.

3 PG&E, with the support by FERC and consulting staff, have identified key priority
4 benefits related to relicensing and operation of the Project:

- 5 • Water transfers, releases and supplies to agricultural and municipal users, storage
6 in Lake Mendocino, and to fisheries in the Russian River watershed. This includes
7 contracted deliveries to the Potter Valley Irrigation District
- 8 • Water releases, flows and passage necessary for Eel River salmonid fisheries
- 9 • Hydro-power generation
- 10 • Recreational uses at Lake Pillsbury, Lake Mendocino and on the Eel River

11 Each of these benefits relies on the reliable and predictable operation of the Project over
12 the next 30-50 years. Yet, Scott Dam is a 98 year-old structure of flawed and questionable
13 geotechnical design, construction and stability. Ensuring that the Project is feasible into the
14 future requires an assessment of:

- 15 • The reasonable lifespan of the Project, taking into account dam alignment and
16 design, slope and foundation stability, leaks, gate operations, parapet wing walls,
17 grizzly intake design and needle valve operations, low lake storage levels and
18 sediment stability, debris management, and absence of fish passage.
- 19 • The risks and costs from landslides, seismic instability, and possible dam failure.
20 *See* PG&E's Scott Dam Engineering Geologic Map (2010) (showing continued
21 slippage and movement of the landslide at the dam's left abutment); PG&E's
22 Emergency Action Plan (1994) (Inundation Maps of Scott Dam failure (1993 and
23 1981), predicting massive and catastrophic results of flooding in both wet and dry
24 conditions). The predictive mapping shows deadly impacts to all of the Eel River's
25 downstream residents, businesses and property owners, both public and private, as
26 well as risks of losses of entire instream habitats and salmonid populations.
27 Questions about seismic stability, sediment loading on the upstream face of the
28 dam, lateral deformation of the dam itself and gate operation reliability remain
unanswered. *See* Scott Stephens RPE, Miller Pacific Engineering Group, letters,
March 9, 2017 and July 31, 2017.

22 The proposed Study Plans omit all discussion of dam safety, stability and reliability and
23 will do nothing to help the regulators, agencies and public understand what the nature and costs
24 of the Project's safety risks are or who will bear them. Instead, FERC and PG&E claim that their
25 existing safety review processes are sufficient, and also that the technical and historic
26 information is rightfully kept secret under CEII rules. (FERC Scoping Document 2, September
27 2017, p. 9).

28 The recent failures at Oroville Dam demonstrate that the process proposed here cannot be

1 relied on to ensure dam safety. Oroville Dam underwent a similar program of supervision,
2 oversight and engineering reviews from FERC, FERC's consultants, California Department of
3 Water Resources, California Division of Safety of Dams, US Army Corps of Engineers and
4 others, and failed miserably.

5 FERC has failed to provide an adequate explanation for not addressing dam safety in
6 relicensing. Its position is inconsistent with the Administrative Procedures Act, which requires a
7 rational connection between facts found and policies adopted (*Greenbaum v. U.S. E.P.A.* 370
8 F.3d 527, 542 (6th Cir. 2004)), and with the National Environmental Policy Act, which requires
9 FERC take a 'hard look' at alternatives in view of all of the possible impacts of a proposed
10 project, not just those FERC wishes to consider. *Marble Mountain Audubon Society v. Rice*, 914
11 F.2d. 179 (9th Cir. 1990).

12 A public analysis of dam safety, stability, and reliability is critical to an assessment of the
13 risks, benefits, and feasibility of the PVP, particularly Scott Dam, and to a determination
14 whether the PVP should be relicensed or whether PVP should instead be decommissioned as the
15 least damaging and most cost effective means of reducing risks to the public, to the
16 environment, and to PG&E's ratepayers and shareholders.

17 **5. Effects of Reduced Diversions on Electrical Supply and Downstream** 18 **Water Supply**

19 The Conservation Groups seek an accounting of reduced diversions through Project
20 facilities, and of electric power generation by the Project, as well as of actual volumes of water
21 diverted. PGE did not provide an explanation why this Proposed Study was not accepted.

22 Project licensing conditions, e.g. those imposed by the Biological Opinion Reasonable
23 and Prudent Alternative, have reduced the volume of water diverted through Project facilities
24 since 2002. However, energy production has fallen even more sharply than the volumes of water
25 diverted. Understanding the relationship between energy production and diversion rates at lower
26 volumes will assist in evaluating the value of the Project as an energy facility and potential
27 alternatives to it. Given that actual power production is already far below the rated capacity of
28 the Project, it may be that the Project is not economically feasible and decommissioning would

1 be the most viable alternative.

2 The public interest would be better served by a process that transparently analyzes how
3 water diversions and energy production have been reduced by license conditions in order to
4 better understand the economic conditions under which the Project operates. The analysis of
5 future Project power production must be made in the context of alternative sources of electric
6 generation which are now or can reasonably be projected to be available in the near future.

7 **6. Effects of Climate Change on Hydrology and Stream Temperatures in**
8 **the Mainstem Eel River Basin**

9 The Conservation Groups addressed climate change issues in two study plan requests.
10 Study Request 1, *Development of Decision Support Tools to Evaluate Potter Valley Project*
11 *Decommissioning Alternatives*, sought development of a climate change component to project
12 potential and probable changes in regional precipitation and temperature over any potential
13 relicensing period, in order to assess the impacts of project operations in a hydrologic regime
14 substantially outside the historic range of variation.
15 In addition, the Conservation Groups requested an overarching study of hydrology and stream
16 temperatures in the mainstem of the Eel River basin in view of probable climate change impacts.
17 While PG&E declined to adopt our proposed methodology, the Conservation Groups are pleased
18 that the essential questions of climate change impacts on precipitation, temperature, and
19 hydrology are being addressed to some degree in aspects of some proposed studies.

20 The Conservation Groups maintain that the question of climate change effects would be
21 still better addressed by considering a range of potential impacts. Such analysis should consider
22 effects over the life of the Project license—a much longer time horizon than the 2030 date
23 adopted by PG&E for the purpose of these analyses. In view of the strong evidence that the
24 climate models which best fit present climatological phenomena predict the most extreme ranges
25 of future temperature and precipitation changes, the Conservation Groups strongly encourage
26 FERC and PG&E to consider using a range of projections which would allow examination of
27 ‘worst case’ scenarios, however implausible those may seem today.

7. Investigation of Sediment Contamination and Bioaccumulation of Hazardous and Toxic Constituents in Aquatic Organisms

While the Proposed Study Plans include a component to test fish in the Lake Pillsbury reservoir for methylmercury, the Conservation Groups requested a more comprehensive suite of study components to assess both the ecological effects of methylmercury accumulation on freshwater and terrestrial ecosystems around the Project as well as the potential variations in, and volumes of, potentially contaminated sediment throughout the Project Area.

Table C-1 states that “Sediment contamination in Project reservoirs and affected river reaches has limited applicability to the development of new license conditions and is primarily applicable to dam removal. PG&E is not proposing to decommission the Project.” However, as long as it remains, the Project will continue to contribute to methylmercury formation. In addition, there are numerous ways methylmercury formed as a result of Project operations may be affecting fish and wildlife in the area. Thus, license conditions could be developed to limit the formation and dispersal of methylmercury in the Project area.

The Project’s contribution of this hazardous material must be considered in weighing whether the benefits of a new license are worth the costs. But entirely aside from the implications for dam removal, methylmercury formation and bioaccumulation are impacts of the Project that need to be assessed for direct, indirect, and cumulative effects on humans and on fish and wildlife.

B. Specific Comments on Proposed Studies

1. Comments do not constitute consensus or endorsement.

As noted above, the Conservation Groups are broadly of the view that the Proposed Study Plans fail to address the scope and depth of the impacts the Project has caused and is causing. Our support of specific study elements should not be taken as a broad endorsement or suggestion that the Conservation Groups are content with the direction of the process.

2. AQ-1 Hydrology

In the Conservation Groups’ Study Request 1, *Development of Decision Support Tools to Evaluate Potter Valley Project Decommissioning Alternatives*, the groups proposed

1 development of a Water Operations Model, which would include:

- 2 1. Unimpaired Hydrology Data Set
- 3 2. Modeling Parameters and Locations
- 4 3. Climate Change

5 Study Plan AQ-1 addresses most of these elements.

6 The Conservation Groups encourage PG&E to commit to installing stage recorders in
7 suitable locations above the Lake Pillsbury reservoir in the Rice Fork and Eel River channels.
8 The Conservation Groups also support the proposed installation of a stream gage in Tomki
9 Creek, and any and all work necessary to reveal why salmon production in Tomki Creek has
10 been so dramatically reduced.

11 As is the case throughout the proposed Study Plans, the Operations Model should be
12 extended down to the mouth of the Eel River, especially during low flow periods. Project
13 operations affect critical flows even at the mouth of the river during low flow periods. Also
14 throughout the Study Plans, it is important to analyze the unimpaired hydrology using the best
15 available information.

16 NMFS notes that assessing ramping rates from Scott Dam spillovers will require hourly
17 data. The Conservation Groups have requested similar hourly data be developed for diversion
18 rates and energy production.

19 **3. AQ-2 Water Temperature**

20 The Conservation Groups believe that PG&E should install temperature gages in the
21 upper Eel and Rice Fork above the Lake Pillsbury reservoir and commit to collecting continuous
22 water temperature data in those tributaries. This is a relatively small addition to the Proposed
23 Study Plan activities, which should already include installation of stage recorders in those areas.
24 Water temperatures in these tributary areas are essential baseline data necessary to analyze the
25 effects of the Project on temperatures throughout the Project area and below.

26 **4. AQ-3 Water Quality**

27 PG&E proposes to collect grab samples and some fish samples to assess water quality,
28 including methylmercury contamination. As NMFS notes, grab sampling techniques are

1 incapable of accurately reflecting water quality issues which fluctuate dramatically, e.g.
2 turbidity. This study should be improved to include more accurate sampling techniques.

3 In addition, as noted above, the Conservation Groups requested PG&E study
4 methylmercury more thoroughly. The Conservation Groups' study request included aquatic
5 surveys for mollusks and juvenile lamprey (ammocoetes). Both are filter-feeding organisms
6 which the literature suggests bioaccumulate methylmercury at different rates. The Conservation
7 Groups also requested studies that would test for possible bioaccumulation of methylmercury in
8 terrestrial foodwebs associated with the Lake Pillsbury reservoir. Including these studies will
9 provide a more accurate picture of the extent and causes of methylmercury contamination.

10 PG&E has taken the position that that methylmercury contamination is a problem
11 relevant to dam decommissioning and therefore unnecessary for study in an analysis of the
12 impacts of the Project. However, as noted above, mercury bioaccumulation in aquatic and
13 terrestrial ecologies is a potentially significant impact of Project operations. As such, before the
14 Project can be relicensed, the study plans should be revised to include a more comprehensive
15 and effective assessment of methylmercury contamination.

16 **5. Study AQ-4 Geomorphology**

17 The proposed study does not provide a suitable study methodology capable of identifying
18 the impacts, including cumulative impacts, of the Project and its operations on fluvial processes
19 and geomorphology in the Project Area. The Conservation Groups support NMFS' request that
20 PG&E adopt the methodologies the agency suggests in its study request. The Conservation
21 Groups support the proposed use of LIDAR to characterize physical habitat conditions.
22 Especially if LIDAR is not employed, the Conservation Groups encourage PG&E to consider
23 increasing the number of study sites from the eight proposed.

24 Study AQ 4 should also be expanded to acknowledge and address the geologic stability
25 of the Project, including impacts of the large historic landslide at Scott Dam's left abutment
26 ("Landslide"). *See* PG&E, Hydro Generation Department. Scott Dam Left Abutment,
27 Geotechnical Instrumentation Additions. Revised September 8, 2011 (identifying "large
28 landslide complex immediately upstream of the left abutment which was activated during dam

1 construction . . . [that] *continues movement to this day.*”) (emphasis added). Such an analysis
2 should characterize the full depth and extent of the Landslide. It should be noted that the
3 geologic map (PG&E, Scott Dam Engineering Geologic Map, Plate 5.1-1, March 2010) only
4 maps recent (i.e., post-dam construction) landslide movement as landslide material. However,
5 topographic features indicate that older landslide materials extend farther to the west and are
6 currently mapped as colluvium and bedrock areas.” Scott Stephens RPE, Miller Pacific
7 Engineering Group, letter report, July 31, 2017.

8 Understanding the history and the projected contribution of this Landslide in rock, gravel,
9 sediments, silts and debris over the next 30-50 years is critical to:

10 (a) bed load, rock, spawning gravels and geomorphological changes to the Eel
11 River from Scott Dam downstream;

12 (b) changes in bathymetry and reservoir storage, accumulation of rock, silts
13 and sediments accumulated behind Scott Dam, and impacts to the needle valve functioning,
14 potential sedimentation or blockage of the “grizzly” intake structure, and to the operations and
15 maintenance functions regarding the controlled release of water through the dam; and

16 (c) the ability of PG&E to provide RPA required and controlled flows to the
17 mainstem Eel River in the event that a major landslide interferes with proper functioning of the
18 grizzly intake structure or the needle valve, including releases from Lake Pillsbury were this to
19 occur during storm events or during dry season and low flows.

20 None of these issues or data are discussed in existing cited documents. The following
21 clarification to proposed Studies would help to correct these significant information gaps:

- 22 • Studies near Scott Dam should include evaluations and characterizations of the
23 sediments contributed by the Landslide. Study Site B covers the reach described as
24 “Benmore Creek to Scott Dam” (Table AQ 4-1) Clarify that Study Area B should
25 also include the historic Landslide which exists at, upstream and downstream of
26 the Dam’s left abutment, to avoid the omission of critical data collection, analysis
27 and longer-term modeling.
- 28 • Provide analysis and modeling of the history and the projected contribution of the
Landslide over the next 30-50 years (proposed relicensing period) to:
 - a. bed load, rock, spawning gravels and geomorphological changes to
the Eel River downstream of Scott Dam;

- 1 b. changes in bathymetry and reservoir storage, and sediment loading
2 behind Scott Dam;
- 3 c. operation of or blockage of the needle valve, sedimentation or
4 obstruction of the “grizzly” intake structure, and to the predictability
5 of operations and maintenance functions regarding the controlled
6 release of water through the dam. This must address the ability of
7 PG&E to provide RPA required and controlled flows to the main
8 stem Eel River below Scott Dam in the event that a major landslide
9 interferes with proper functioning of the grizzly intake structure or
10 the needle valve. Analyze potential interference with the ability of
11 PG&E to control releases from Lake Pillsbury were this to occur
 during storm events or during dry season and low flows;
- d. the sediment loading on the upstream face of the dam, including the
 modeling of potential future impairment of operations of the grizzly
 intake structure and the needle valve. Include options for repair or
 maintenance processes to unblock impairment and restore Project
 regimes for controlled discharge flows through Scott Dam to meet
 RPA or other necessary flows and maintain water quality, both at
 high (storm) and at low flow regimes.

12 Finally, the following references should be added to this Study Plan:

- 13 • PG&E, Hydro Generation Department. Scott Dam Left Abutment, Geotechnical
14 Instrumentation Additions. Revised September 8, 2011 p. 2
- 15 • PG&E, Scott Dam Engineering Geologic Map, Plate 5.1-1, March 2010
- 16 • PG&E, Emergency Action Plan, Potter Valley Project FERC Project No. 77, Scott
17 Dam: 97-10, April 21, 1994, including:
- 18 • Downstream Flooding Due to the Hypothetical Failure of Scott Dam [Dam-Failure
19 Report], PG&E Civil Engineering Department, C.B. Cecilio and J.A. Batina,
20 September 1981
- 21 • Addendum to “Downstream Flooding Due to the Hypothetical Failure of Scott
22 Dam”, PG&E Hydro Generation Department, Prepared by Sherman C. Lau, C.E.,
23 March 1994
- 24 • Civil-Hydrologic Engineering Index of Inundation Maps of Scott Dam (Lake
25 Pillsbury), PG&E Hydro Generation Department, Patrick J. Regan, RPE, Dec. 1,
26 1993

27 **6. Study AQ-5 Instream Flow**

28 The Conservation Groups again support NMFS’s expert opinion that “flow prescriptions
should not be assessed independently from other physical and biological parameters (e.g.,
summer and fall rearing temperatures, passage, predation, and whatnot),” but would better be
incorporated into an integrative modeling process, i.e. life cycle modelling.

7. Study AQ 6 – Lake Pillsbury Fish Habitat

The study of fisheries habitat in the Lake Pillsbury reservoir is clearly an important
element of analyzing the impacts of the Project. This study must incorporate possible fish

1 passage scenarios at Scott Dam and salmonid recovery strategies. Thus, it will be essential to
2 evaluate habitat conditions relevant to salmonid migration and critical life history stages (e.g.
3 freshwater rearing habitat especially for steelhead).

4 Given the importance of the upper basin as potential recovery habitat for critically
5 imperiled summer steelhead, it is imperative that PG&E develop as comprehensive a picture as
6 possible of rainbow trout stocking in the Lake Pillsbury reservoir, including both current and
7 historical practices. This information will be indispensable in evaluating the potential for
8 steelhead recovery in the area, as well as to assess our ability to distinguish stocked rainbows
9 from wild rainbows in the upper basin.

10 The Conservation Groups also encourage PG&E to fully investigate the predatory warm
11 water species in the Lake Pillsbury reservoir, including bass as well as pikeminnow.

12 **8. Study AQ 7 – Fish Passage**

13 The Conservation Groups Study Plan Request presented a proposal for fish passage as
14 one part of a package of analyses which the Conservation Groups suggested be analyzed
15 together, in our Study Request 1, titled *Development of Decision Support Tools to Evaluate*
16 *Potter Valley Project Decommissioning Alternatives*. The Conservation Groups identified a
17 number of discrete issues which need to be addressed by studies of fish passage barriers. These
18 include:

- 19 • Fish Passage Upstream to Cape Horn Dam
- 20 • Fish Passage Over Cape Horn Dam
- 21 • Diversion Fish Screen
- Fish Passage Over Scott Dam to Upper Eel River Watershed
- Fish Passage Over Scott Dam

22 Study Plan proposal AQ-7 addresses many of these issues and acknowledges a clear
23 nexus between the Project and its operations and the need to assess fish passage in order to
24 develop license conditions adequate to protect fisheries. However, AG-7 still lacks critical
25 components.

26 First, while it includes a critical riffle analysis between Scott Dam and the Middle Fork
27 Eel River, the study does not include critical riffles downstream to the river mouth. As noted in
28 Study Plan discussions and with regard to AQ-1 above, in low-flow seasons Project operations

1 can have significant influences on these potential barriers to fish passage.

2 AQ-7 also does not provide for any studies of passage barriers above the Lake Pillsbury
3 reservoir. This information is needed to provide an analysis of salmonid recovery potential in
4 the Project Area. As NMFS notes, “existing information already indicates that the Project
5 significantly impacts upstream and downstream fish passage, particularly for the NC steelhead
6 Upper Mainstem Eel River population, which includes summer and winter run life history
7 expressions, and the CC Chinook Upper Eel River population, as stated in the NMFS
8 Multispecies Recovery Plan.” (NMFS comment on PSP, p. 11).

9 The Conservation Groups strongly concur with NMFS’ recommendation that PG&E
10 proceed directly to assessment of fish passage alternatives at Scott Dam in the first year of
11 studies. There can be no dispute that the salmonid habitat above the Lake Pillsbury reservoir is
12 significant enough to merit such analysis. Well-documented evidence demonstrates there is in
13 excess of a hundred stream miles of chinook habitat and well over two hundred stream miles of
14 steelhead habitat. The presence of native rainbow trout in the upper basin provides
15 incontrovertible evidence that this habitat is sufficient to support *O. mykiss*, and thus, its chinook
16 cousins (which, because they are not obligated to spend their first year in freshwater, are less
17 constrained by dry-season conditions).

18 Thus, analysis of means by which fish passage at Scott Dam could be achieved should be
19 the subject of study without further delay. The Conservation Groups agree with NMFS that it
20 would be appropriate for FERC to require PG&E to convene a technical advisory committee to
21 assist in the preparation of fish passage alternatives. It is essential, as the agency points out, that
22 such a committee include NMFS personnel with comprehensive knowledge of the agency’s
23 recovery framework and salmonid population management goals.

24 The Conservation Groups strongly concur with NMFS’s proposal for a radio and/or
25 acoustic tagging study, and encourage PG&E to explore using stocked rainbow trout for such a
26 study of up and downstream passage issues. While PG&E has increased the number of juveniles
27 proposed to be tagged from 30 to 50 in its study of downstream passage of juveniles at Cape
28 Horn dam, it is not clear why or how this number of tagged fish will provide statically

1 meaningful results from three different passage areas on the dam.

2 The Conservation Groups also concur with NMFS that PG&E should provide an updated
3 analysis of the formation of “thermal barriers” in the mainstem Eel during the declining limb of
4 the hydrograph. Understanding these barriers is critical to assessing the current ‘blockwater’
5 strategy for mitigating some of the Project’s impacts on river conditions and fisheries.

6 When analyzing fish passage, it is essential to properly identify the species and life
7 histories at issue. While chinook salmon are generally better recognized for their upstream
8 passage at the Van Arsdale fish ladder, the Conservation Groups are even more concerned for
9 the winter and summer steelhead and still more critically imperiled coho salmon. Both upstream
10 and downstream passage studies must reflect the need to provide the best possible passage
11 conditions for the recovery of these species, including the adult steelhead which have survived
12 spawning (kelts) and are important for the long-term productivity of the species.

13 The Conservation Groups strongly concur that assessing fish passage impacts of the
14 Project will require analysis of the ways Project operations affect environmental cues (i.e.,
15 flows, water temperature) which appear to affect migration behaviors.

16 **9. Study AQ 8 – Fish Entrainment**

17 The Proposed Study is meant to determine if the fish screens meet fish screen design
18 criteria set by NMFS and CDFW. However, the existing screen mesh does not meet current fish
19 screen design criteria. NMFS notes a number of additional issues which do not appear to be
20 addressed by the proposed study, including limitations on the rate of diversion which suggest
21 that the maximum diversion the facility can support is only 400 cfs, well below high flows at the
22 Cape Horn dam.

23 As suggested by NMFS, PG&E should carefully review these issues and provide
24 corrections to ensure that the fish screening mechanisms prevent entrainment in as wide a range
25 of conditions as possible.

26 **10. Study AQ 9 – Fish Populations**

27 As noted above and in previous comments, it is vitally important that the analysis of
28 Project impacts on Eel River fisheries proceed from an accurate and up to date understanding of

1 the specific species, populations, and life histories affected by the Project. As NMFS notes, “the
2 essential recovery populations for CC Chinook salmon and NC steelhead most directly impacted
3 by the Project are the Upper Eel River Chinook salmon and the Upper Mainstem Eel River
4 steelhead populations, including winter and summer life history expressions for steelhead.”
5 (Comments on PSP, p. 14).

6 Since their introduction to the Eel River via the Project’s Lake Pillsbury reservoir,
7 pikeminnow have been identified as a significant impact to salmonids throughout the Eel River
8 watershed. The Conservation Groups strongly support the proposed implementation of
9 pikeminnow suppression and eradication techniques beyond the ineffective strategies employed
10 to date. The adoption of “Trojan Y” strategies appears particularly promising. In order to assess
11 the impacts of pikeminnow and the prospects for mitigating or eliminating their impacts on Eel
12 River salmonids, PG&E should characterize pikeminnow populations throughout the Eel River
13 watershed.

14 As noted above, fish population studies should extend to the entire Eel River watershed,
15 including areas above the Lake Pillsbury reservoir. The legacy native rainbow trout in the upper
16 Eel River watershed above the Lake Pillsbury reservoir should be the subject of careful and
17 detailed investigation to determine their potential value in providing for the recovery of winter
18 and summer run steelhead.

19 The Conservation Groups support the proposal to monitor summer rearing steelhead to
20 assess the impacts of Project operations on this life stage. There is real concern that the Project’s
21 ordinary operation can create an ‘ecological trap’ in the Project Area by maintaining cold water
22 flows between Scott dam and the diversion at Cape Horn dam that override the environmental
23 cues young steelhead would otherwise take to migrate downstream before mainstem
24 temperatures become lethal in summer.

25 The Conservation Groups strongly support the proposed deployment of a sonar unit (aka
26 DIDSON) to survey fisheries in the Eel River, and support NMFS’ suggestion that it be installed
27 immediately above the South Fork Eel River confluence. There are few steps that would be
28 more productive in assessing the size and condition of Eel River fish populations, including

1 listed salmonids, than implementing a comprehensive sonar survey of the mainstem. Without
2 such data, it is very difficult to provide an accurate and meaningful analysis of the impacts of the
3 Project and its operations on Eel River fish populations.

4 As discussed above, the Conservation Groups support NMFS' request that PG&E
5 develop full life cycle models or equivalent production capacity models to assess the impacts of
6 the Project on each species, population, and life history of Eel River fisheries affected by the
7 Project. Such models are in fact "essential tools for evaluating various future Project alternatives
8 and scenarios, while having the capacity to identify life stage bottlenecks to inform future
9 mitigation measures." If PG&E continues to decline to develop such models, FERC must
10 explain how the resulting analysis is adequate in view of the Endangered Species Act's
11 requirement that the best available science be employed to assess the threats to and recovery
12 needs of species listed under that Act.

13 The Conservation Groups concur with NMFS that the proposed study of fish populations
14 in the East Branch Russian River will not contribute in any way to the meaningful assessment of
15 Project operations on native fisheries.

16 **11. Study AQ 11 – Macroinvertebrates and Special-Status Mollusks**

17 The Conservation Groups request that a portion of all samples of macroinvertebrates and
18 mollusks taken in the course of these studies be retained for methylmercury assays.

19 **CONCLUSION**

20 For the foregoing reasons, the Conservation Groups respectfully request that the
21 Commission consider their comments and require amendments to the Plan Study Proposal as set
22 forth above.

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1 DATED: December 18, 2017

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Derek Campbell
Board Chair

CERTIFICATE OF SERVICE

I hereby certify that I will on this day serve a copy of the foregoing document, via electronic or first class mail, to each person designated on the official service list compiled by the Secretary in this proceeding.

Executed in San Francisco, California on December 18, 2017.

/s/ Patricia Larkin
PATRICIA LARKIN

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