FEDERAL ENERGY REGULATORY COMMISSION
Washington, DC 20426
April 30, 2018

OFFICE OF ENERGY PROJECTS

Project No. 96-045 – California
Kerckhoff Hydroelectric Project
Pacific Gas & Electric Company

Subject: Scoping Document 2 for the Kerckhoff Hydroelectric Project

To the Party Addressed:

The Federal Energy Regulatory Commission (Commission) is currently reviewing the Pre-Application Document submitted by Pacific Gas & Electric Company (PG&E) for relicensing the 162.72-megawatt (MW) Kerckhoff Hydroelectric Project (FERC No. 96). The proposed project is located on the San Joaquin River, in Fresno and Madera Counties, California. The project occupies lands owned by PG&E and National Forest System Lands administered by the U.S. Forest Service, Sierra National Forest, and on lands managed by the U.S. Bureau of Land Management.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Commission staff intends to prepare an environmental assessment (EA), which will be used by the Commission to determine whether, and under what conditions, to issue a new license for the project. To support and assist our environmental review, we are beginning the public scoping process to ensure that all pertinent issues are identified and analyzed and that the EA is thorough and balanced.

Our preliminary review of the environmental issues to be addressed in our EA was contained in Scoping Document 1 (SD1), which was issued on January 16, 2018. We requested comments on SD1 and held scoping meetings on February 13, 2017, to hear the views of all interested entities on the scope of issues to be included in the EA. We revised SD1 based on the oral comments we received at the scoping meetings, and written comments we received throughout the scoping process. The enclosed Scoping Document 2 (SD2) describes the proposed action and alternatives, the environmental analysis process we will follow to prepare the EA, and a revised list of issues to be addressed in the EA.

We appreciate the participation of governmental agencies, non-governmental organizations, and the general public in the scoping process. ***Key changes from SD1 to SD2 are identified in bold, italicized type.*** SD2 is being distributed to all entities on the Commission's mailing list for this project. SD2 can also be accessed online at: http://www.ferc.gov/docs-filing/elibrary.

The enclosed SD2 supersedes the January 16, 2017, SD1. SD2 is issued for informational use by all interested entities; no response is required. Please direct any questions about the scoping process to Evan Williams at (202) 502-8462 or evan.williams@ferc.gov. Additional information about the Commission's licensing process and the Kerckhoff Hydroelectric Project may be obtained from our website, www.ferc.gov.

Enclosure: Scoping Document 2

SCOPING DOCUMENT 2

KERCKHOFF HYDROELECTRIC PROJECT

CALIFORNIA

PROJECT NO. 96-045

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
Washington, DC

April 2018

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1.0 INTRODUCTION

The Federal Energy Regulatory Commission (Commission or FERC), under the authority of the Federal Power Act (FPA),[1] may issue licenses for terms ranging from 30 to 50 years for the construction, operation, and maintenance of non-federal hydroelectric projects. On November 16, 2017, Pacific Gas & Electric Company (PG&E) filed a Pre-Application Document (PAD) and Notice of Intent to seek a new license for the Kerckhoff Hydroelectric Project (FERC Project No. 96).[2]

The Kerckhoff Hydroelectric Project (project) is located about 25 miles northeast of the city of Fresno, on the San Joaquin River, in Fresno and Madera Counties, California. The project consists of Kerckhoff Reservoir, formed by Kerckhoff Dam, two powerhouses referred to as the Kerckhoff No. 1 ("K1") Powerhouse and the Kerckhoff No. 2 ("K2") Powerhouse, a tunnel and two penstocks that convey water from the reservoir to the K1 Powerhouse, a tunnel and penstock that convey water from the reservoir to the K2 Powerhouse, and appurtenant facilities and access roads. The project has a total installed capacity of 162.72 megawatts (MW), and an estimated average annual generation of 213,631 megawatt-hours (MWh).

Section 3.0 provides a detailed description of the project, and figure 1 shows the project location within the Upper San Joaquin River Basin. The project occupies lands owned by PG&E and National Forest System Lands administered by the U.S. Forest Service, Sierra National Forest, and on lands managed by the U.S. Bureau of Land Management (BLM).

The National Environmental Policy Act (NEPA) of 1969,[3] the Commission's regulations, and other applicable laws require that we independently evaluate the environmental effects of relicensing the Kerckhoff Hydroelectric Project as proposed, and also consider reasonable alternatives to the licensee's proposed action. At this time, we intend to prepare an environmental assessment (EA) that describes and evaluates the probable effects, including an assessment of the site-specific and cumulative effects, if

[1] 16 U.S.C. § 791(a)-825(r) (2012).

[2] The current license for the Kerckhoff Hydroelectric Project was issued with an effective date of November 8, 1979 and expires on November 30, 2022.

[3] National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4370(f) (2012).

any, of the proposed action and alternatives. The EA preparation will be supported by a scoping process to ensure identification and analysis of all pertinent issues.

Although our current intent is to prepare an EA, there is a possibility that an environmental impact statement (EIS) will be required. The scoping process will satisfy the NEPA scoping requirements, irrespective of whether the Commission issues an EA or an EIS.

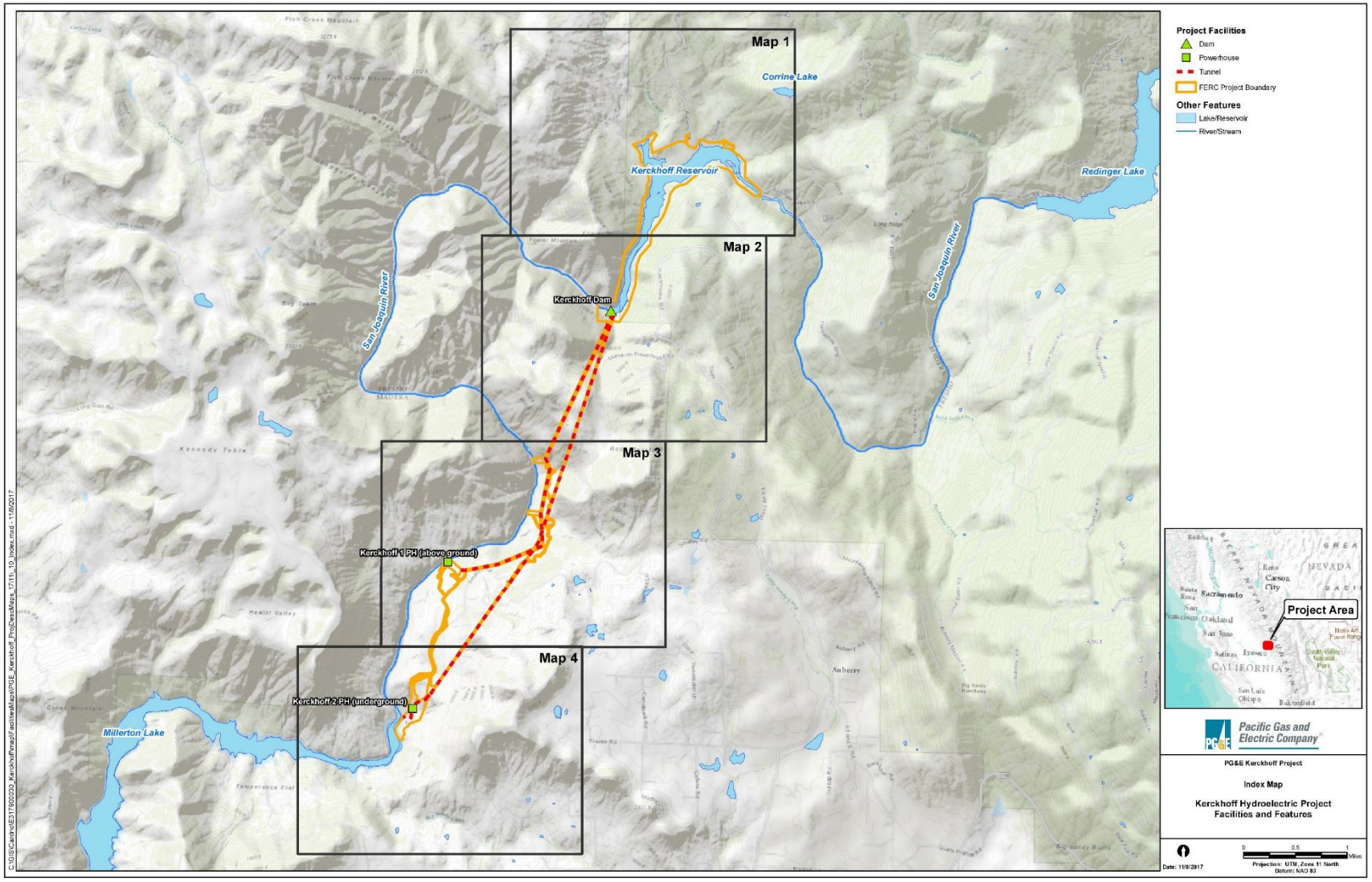

Figure 1. Location of the project (Source: PG&E).

2.0 SCOPING

This Scoping Document 2 (SD2) is intended to advise all participants as to the proposed scope of the EA and to seek additional information pertinent to this analysis. This document contains: (1) a description of the scoping process and schedule for the development of the EA; (2) a description of the proposed action and alternatives; (3) a preliminary identification of environmental issues and proposed studies; (4) a request for comments and information; (5) a proposed EA outline; and (6) a preliminary list of comprehensive plans that are applicable to the project.

2.1 PURPOSES OF SCOPING

Scoping is the process used to identify issues, concerns, and opportunities for enhancement or mitigation associated with a proposed action. In general, scoping should be conducted during the early planning stages of a project. The purposes of the scoping process are as follows:

- invite participation of federal, state, and local resource agencies; Indian tribes; non-governmental organizations (NGOs); and the public to identify significant environmental and socioeconomic issues related to the proposed project;
- determine the resource issues, depth of analysis, and significance of issues to be addressed in the EA;
- identify how the project would or would not contribute to cumulative effects in the project area;
- identify reasonable alternatives to the proposed action that should be evaluated in the EA;
- solicit from participants available information on the resources at issue, including existing information and study needs; and
- determine the resource areas and potential issues that do not require detailed analysis during review of the project.

2.2 COMMENTS, SCOPING MEETINGS, AND ENVIRONMENTAL SITE REVIEW

Commission staff issued SD1 on January 16, 2018. On February 13, 2018, staff conducted morning and evening scoping meetings in Fresno, California. On February 14, 2018, staff conducted an environmental site review. Public notice of the meetings was published in the Federal Register and in the *Fresno Bee*. A court reporter recorded and transcribed both of the scoping meetings.

The following individuals provided verbal comments at the scoping meetings.

Speaker	Organization
Theresa Simsiman	American Whitewater
Somer Shaw	Bureau of Land Management

In addition to the oral comments received during the scoping meetings, written comments were received from the following agencies and entities:

Commenting Entity	Filing Date
American Whitewater	March 16, 2018
Bureau of Land Management	March 16, 2018
California Department of Water Resources	March 16, 2018
Environmental Protection Agency	March 16, 2018
Forest Service	March 16, 2018
National Park Service	March 19, 2018
Pacific Gas & Electric	March 19, 2018

Key changes from SD1 are identified in ***bold, italic type***. Note that the primary purpose of SD2 is to identify issues to be analyzed in the EA, not to identify all recommended and/or potential protection, mitigation, and enhancement (PM&E) measures. All proposed and recommended PM&E measures will be analyzed in the EA.

2.2.1 Issues Raised During Scoping

The issues raised by participants in the scoping process are summarized and addressed below. The summaries do not include every verbal and written comment made during the scoping process. For instance, we do not address comments that are recommendations for license conditions, including PM&E measures such as installation of stream gages. Such comments will be addressed in the EA or any license order that is issued for this project. We will request final terms, conditions, recommendations, and comments when we issue our Ready for Environmental Analysis (REA) notice, following the filing of the license application. We also do not address comments or recommendations that are administrative in nature, such as requests for changes to the mailing lists. Those items will be addressed separately.

General Comments

Comment: PG&E states that no text is provided under the "Developmental Resources" header in SD1, and requests clarification if text should be included.

Response: We have not identified any developmental resource to be addressed in

our EA. We have revised section 4.2 of the scoping document accordingly by removing the "Developmental Resources" header.

Comment: PG&E states that SD1 did not include two comprehensive plans that were included in the PAD that may be applicable to the project.

Response: We have revised section 8.0 to include the two additional comprehensive plans.

Comment: PG&E clarifies that no new environmental measures are proposed by PG&E at this time, prior to studies being performed, but that new environmental measures may be proposed as a result of the relicensing process.

Response: We have revised section 3.2.2 to clarify that PG&E proposes no new environmental measures at this time; however, new environmental measures may be proposed as a result of the relicensing process.

Comment: PG&E clarifies that Table 1 in SD1 does not present a list of their proposed study plans, but rather a list of resource issues that they identified in the PAD. PG&E filed a letter on February 6, 2018, clarifying their proposed studies, which allowed them to be referenced and reviewed during the project scoping meetings. PG&E requests that Section 5.0, Table 1, in the SD2, be modified to match the proposed studies provided in Appendix D of the PAD.

Response: We have revised Section 5.0, Table 1 to match the information provided by PG&E in Appendix D of the PAD.

Existing Project Facilities and Operations

Comment: PG&E clarifies that the project is operated to generate power, and that PG&E has no water delivery requirements associated with the project. Water diverted through, or bypassed by, the project flows into Millerton Lake where the Bureau of Reclamation (BOR) delivers water for agricultural, municipal, and industrial use.

Response: We have revised Section 3.1.2 to clarify that there are no water delivery requirements associated with the project.

Comment: PG&E states that Kerckhoff Reservoir has very limited storage ability, and almost no ability to increase peak river flows below Kerckhoff Dam, above those flows that would happen in the absence of the project. PG&E agrees that a number of uncontrollable factors including inflows into Kerckhoff Reservoir and those related to potential operations events and/ or related to grid conditions could result in a sudden increase in flows downstream of Kerckhoff Dam but that such increases may be beyond

PG&E's ability to control.

Response: We have revised Section 3.1.2 to indicate PG&E's inability to increase peak river flows below Kerckhoff Dam.

Comment: BLM states that they are required to issue a right-of-way for all PG&E facilities and features not included within the project boundary. They also state that the current right-of-way agreements for the Kerckhoff Project transmission lines will expire on November 30, 2022, and that BLM will consider all features and facilities not included within the project boundary, or a BLM authorization, to be trespassing on BLM land.

Response: We appreciate being notified of BLM's requirements regarding right-of-way issuance for Kerckhoff project facilities, and will keep them in consideration during the relicensing process.

Comment: The California State Water Resources Control Board (Water Board) comments that PG&E owns and maintains the following stream gage stations: J1 (Kerckhoff Reservoir); J2 (San Joaquin R Nr Auberry); J3 (Kerckhoff Powerhouse #1); and J6 (Kerckhoff Powerhouse #2). Water Board staff recommends that the Commission include these stream gages as existing project facilities.

Response: We appreciate the Water Board identifying the stream gages as PG&E-owned facilities, and we acknowledge PG&E identified these gages as project gaging stations in their PAD. We have revised Section 3.1.1 to include the stream gages as project facilities.

Proposed Project Facilities and Operations

Comment: PG&E states that no changes to the existing project boundary are proposed at this time. PG&E anticipates that they, or other stakeholders, may propose adjustments to the boundary during the course of the relicensing process.

Response: We have revised Section 3.2.1 to indicate that PG&E does not propose changes to the existing project boundary at this time.

Comment: BLM requests current GIS layers associated with the Kerckhoff Project boundary, and any updates or modifications that may occur to those layers throughout the relicensing process, in order to analyze resources within, and adjacent to, the project when considering project rights-of-way. BLM further states that a request for this GIS information has been made to PG&E, and PG&E has not been able to provide them with that information.

Response: We acknowledge BLM's request for current GIS layers associated with the project boundary. Currently, we do not have project GIS layers. As a requirement of the relicensing process, PG&E will prepare and submit detailed Exhibit G drawings in their license application, illustrating project facilities and boundaries in relation to non-project lands. We acknowledge that PG&E may share current GIS layers with BLM at any time during the relicensing process, and request that those GIS layers also be shared with the Commission.

Cumulative Effects Geographic Scope

Comment: PG&E states that the current license does not require a sediment management program, and that the project has limited ability to alter the transport of sediments downstream of Kerckhoff Dam due to the minimal storage capacity in the project reservoir. PG&E also explains that low level outlets on the dam are not used for sluicing sediment trapped behind the dam because that practice has not proven to be an effective way of moving the sediment. Additionally, PG&E states that dredging has been conducted only when necessary due to maintenance projects, and has no plans to dredge the reservoir in the future for the purpose of sediment management. However, PG&E has proposed draft study plans GEO 1 and GEO 2 to gather additional information on sediments, and to evaluate potential future sediment management practices.

Response: We appreciate PG&E's comments regarding sediment transport downstream of Kerckhoff Dam and sediment management within the Kerckhoff Reservoir, and will keep them in consideration during the relicensing process.

Comment: The Environmental Protection Agency comments that the U.S. Bureau of Reclamation (BOR) published a draft environmental impact statement for the Upper San Joaquin River Basin Storage Investigation in 2014, in which BOR proposed a new dam and reservoir between Millerton Lake and Kerckhoff Dam. EPA recommends that, in addition to evaluating cumulative environmental impacts associated with the Kerckhoff Project, that the EA include a discussion of the status of the Upper San Joaquin River Basin Storage Investigation, and how implementation of the proposed new project would impact the Kerckhoff Project. EPA recommends that the Commission discuss, in particular, whether the Kerckhoff Project license would be reopened or amended to address flow regimes, sediment sluicing, and the operation or decommissioning of the Kerckhoff Project's powerhouses should BOR's proposed new project be constructed.

Response: We appreciate EPA's recommendation to evaluate the status of the Upper San Joaquin River Basin Storage Investigation, and how the potential new dam and reservoir would impact the Kerckhoff Project. We will consider these two topics during the Commission's relicensing proceeding.

Water Resources

Comment: PG&E acknowledges Section 4.2.2 of SD1 lists the effects of continued project operation and maintenance on dissolved oxygen and water temperature in Kerckhoff Reservoir and the bypassed reach as an issue that will be addressed in the EA. PG&E states that dissolved oxygen (DO) levels are compliant with the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, and are sufficient to support aquatic life. PG&E notes that DO will be measured in Kerckhoff Reservoir, and in up to three additional locations in the project bypassed reach as part of Study WQ2; however, no separate DO study is proposed.

Response: PG&E's comments are noted and will be considered in the Commission's relicensing proceeding.

Comment: The Water Board staff recommends that the Commission include analysis of additional in situ water quality parameters (specific conductance, pH, turbidity), general water quality parameters (dissolved organic carbon, solids, inorganic ions, nutrients, metals), bioaccumulation (metals), and recreation-related (bacteria) parameters, and states that these parameters are necessary to fully assess water quality in the project area.

Response: Water Board's comments are noted and will be considered in the Commission's relicensing proceeding.

Fishery Resources

Comment: PG&E states that aquatic macroinvertebrates (benthic macroinvertebrates [BMI]), in the Kerckhoff Reservoir or the bypassed reach, were not a resource issue identified in Section 6 of the PAD. PG&E explains that BMI sampling was not proposed because there is no point source of pollutants associated with the project that would indicated a BMI study would be useful or necessary. PG&E proposes to sample and evaluate the fish community in both Kerckhoff Reservoir and the bypassed reach to examine species composition, abundance, recruitment, and condition, and notes a separate BMI study would only be needed if results from that sampling indicate an inadequate food supply.

Response: Although BMI sampling was not proposed in the PAD, we acknowledge that project operations and maintenance could have effects on the BMI populations in Kerckhoff Reservoir and the bypassed reach, and will continue to include analysis of those potential effects in our EA.

Comment: PG&E states that aquatic invasive species were not a resource issue identified in Section 6 of the PAD. In addition, PG&E states that no aspect of project

operations or maintenance would involve introduction of aquatic invasive species, and indicates that only small motorized and non-motorized personal watercraft utilize the reservoir due to the lack of a developed boat launch/ramp. PG&E states that water quality data collected in Kerckhoff Reservoir (CDEN 2017), and by Southern California Edison (2003) upstream of the project, suggest that calcium and pH levels are not suitable to support invasive quagga or zebra mussels; although, studies proposed as part of the relicensing process may provide additional information indicating whether or not the reservoir provides suitable habitat for aquatic invasive species.

Response: We appreciate PG&E's comment; however, we acknowledge that even if aspects of project operations, maintenance, and project-related recreational use would not purposefully introduce aquatic invasive species, there is always the potential for aquatic invasive species to be unknowingly introduced as a result of project-related activities. We also acknowledge, as PG&E has indicated, that proposed studies may provide information indicating whether or not the reservoir provides suitable habitat for aquatic invasive species.

Terrestrial Resources

Comment: PG&E states that the PAD did not identify effects of recreational use on plants or wildlife. However, the study areas for BOT 1 and WILD 1 include Smalley Cove Recreation Area, which is the only project recreational area.

Response: We appreciate the clarification regarding the study areas for BOT 1 and WILD 1. We acknowledge recreational use of project lands also occurs outside of the formal project recreational area, and may have effects on plants or wildlife that may occur outside of the formal project recreational area.

Comment: PG&E comments that the American bullfrog is widespread throughout California, and is well established in the San Joaquin River above, within, and below the project area, as well as in tributaries to the San Joaquin River and in nearby ponds. PG&E recommends that because of its widespread distribution in the project area, that it be considered differently than the more recent and less established invasive species, which resource agencies are actively working to control.

Response: We appreciate PG&E's recommendation and will examine whether to consider the American bullfrog differently than other aquatic invasive species during the Commission's relicensing proceeding.

Comment: The Water Board staff recommends the Commission include amphibians and turtles in its environmental analysis, because these species are present in the project-affected area, and could be affected by the project.

Response: We have revised Section 4.2.4 to include amphibians and turtles as species that could be affected by project operations and maintenance.

Comment: BLM states that it anticipates changes to protection mitigation and enhancement measures in any new license that may be issued for the project, and that any license issued should outline PG&E's responsibility for its wildlife watering sites.

Response: BLM's comments are noted and will be considered in the Commission's relicensing proceeding.

Comment: Forest Service provided additional comments detailing the Sierra National Forest Objectives for the protection and maintenance of Threatened, Endangered and Sensitive Species and habitats relative to hydropower facilities operations and maintenance.

Response: We appreciate being notified of the Forest Service's objectives, and will keep them in consideration during the relicensing process.

Recreational Resources

Comment: The Water Board states that an informal recreational area is located within the project boundary, on the north bank of Kerckhoff Reservoir, approximately a quarter mile upstream of Smalley Cove Recreation Area, and that Water Board staff visited this site and identified significant public use, and potential use by PG&E for operations and maintenance activities associated with project facilities. The Water Board recommends that the Commission include this informal recreational area as an existing project recreational facility.

Response: We appreciate Water Board identifying the potential area of operations, maintenance, and informal recreational use within the project boundary, and we will keep this site in consideration during the relicensing process.

Comment: BLM comments that effects of project operation and maintenance on recreational access and use in lands and waters adjacent to the project area should be addressed, including the bypassed reach. BLM further states that recreational resources within BLM's San Joaquin River Gorge should be included in the evaluation of impacts to recreation from project operation and maintenance. BLM is particularly interested in adequacy of access to recreational opportunities to meet current and future demand, and potential impacts to visitors recreating in the bypassed reach, including but not limited to fishing, swimming, whitewater boating, bouldering, and recreational gold panning. Additionally, BLM is concerned with project effects on public safety.

Response: We appreciate BLM's comments regarding the potential for project

effects on a variety of public recreational uses, and access, within the bypassed reach, and we will consider these potential effects during the relicensing process. We also acknowledge BLM's comment regarding the San Joaquin River Gorge, and we will consider potential project effects in this area as long as the potential effects have a clear nexus to the Kerckhoff Project.

3.0 PROPOSED ACTION AND ALTERNATIVES

In accordance with NEPA, the environmental analysis will consider the following alternatives, at a minimum: (1) the no-action alternative; (2) PG&E's proposed action; and (3) alternatives to the proposed action.

3.1 NO-ACTION ALTERNATIVE

Under the no-action alternative, the Kerckhoff Hydroelectric Project would continue to operate as required by the current project license (i.e., there would be no change to the existing environment). No new environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with other alternatives.

3.1.1 Existing Project Facilities

Dams

Kerckhoff Dam

Kerckhoff Dam is a concrete arch dam with a crest length of 507 feet and a maximum height of 114.5 feet as measured from the base of the dam located at 880.0 feet above mean sea level (msl) to the top of the dam located at an elevation of 994.5 feet above msl. The height of the dam from the base to the top of the spillway crest is 91 feet Locked gates located at each end of the dam prevent the general public from accessing or crossing the dam.

Fourteen radial gates control spill from the dam. These gates are 14.34 feet high and 20 feet wide, as measured from the top of the dam crest at 971.34 feet above msl to the top of the gates located at 985.68 feet above msl. Spill gates 1 through 8 are manually operated and gates 9 through 14 are automatically operated. Three stationary and two movable gate hoists located on a track above the gates are used to control the gates. The six automatic gates have a maximum discharge capacity of 2,800 cubic feet per second (cfs) each, and the eight manual gates have a discharge capacity of 3,300 cfs each. Accordingly, when all of the gates are fully open, they have a combined spill capacity of approximately 43,700 cfs. The dam is equipped with three 72-inch-diameter low-level outlet sluice pipes located at an invert elevation 897.0 feet above msl, with a

maximum combined discharge capacity of 3,900 cfs. The gates are covered with a Grizzly-type trash rack.

The current license requires PG&E to maintain a minimum instream flow below the dam of 25 cfs during Normal water years, and 15 cfs during Dry water years. Minimum instream flows are provided through an approximate 75-foot-long, 18-inch-diameter instream flow pipe connected to the North Adit, which originates from the Kerckhoff No. 1 Tunnel. Water from the instream flow pipe is released into the San Joaquin River approximately 150 feet downstream of the dam.

Reservoirs

Kerckhoff Reservoir

Kerckhoff Reservoir is formed by Kerckhoff Dam. At an elevation of 985.7 feet above msl (the top of the gates), the reservoir originally had a gross storage capacity of 4,252 acre-feet and a surface area of 160 acres. However, due to sedimentation, the lake currently has an estimated usable capacity of 1,084 acre-feet. At a water surface elevation of 985.7 feet, the lake is approximately 3.7 kilometers (2.3 miles) long and has a shoreline length of approximately 10.3 kilometers (6.4 miles).

Diversion System

Kerckhoff No. 1

Intake Structure

The Kerckhoff No. 1 Intake Structure is located within Kerckhoff Reservoir, near the south shore, about 200 feet east of Kerckhoff Dam. The intake structure is constructed of reinforced concrete and is about 29.5 feet by 26 feet wide in plan view, and 74.33 feet in height. The invert elevation of the intake is 942.0 feet above msl.

The intake structure houses two steel slide gates, each approximately 8.5 feet wide and 21.4 feet high. These gates are operated with electric hoists located on a platform above the gates. The gate operation platform is accessible via a concrete walkway that extends from the bedrock that forms the south shore of the reservoir to the top of the intake structure. A 3-foot-by-3-foot bypass gate is located below the main gates just above the tunnel intake. This bypass gate is operated using a manual control located at the top of the intake structure, at the base of the electric gate hoist platform. A trash rack located on the upstream side of the intake structure spans the gate openings and prevents debris from entering the tunnel through the gates.

Kerckhoff No. 2

Intake Structure

The Kerckhoff No. 2 Intake Structure is located within Kerckhoff Reservoir, at the south shore, about 100 feet upstream of the Kerckhoff No. 1 Intake Structure. The Kerckhoff No. 2 Intake Structure is constructed of reinforced concrete that measures about 43 feet by 52 feet in plan view and 63 feet in height. The bottom of the structure is located at an elevation of 934 feet above msl, and the top of the structure is located at 997 feet above msl, so at the normal operating water surface elevation, all but the top 12 feet of the structure is submerged. The intake structure is equipped with two fixed-wheeled steel gates, both 10.6 feet wide by 24.6 inches high, that are designed to close under flowing conditions and open under a balanced head. The gates are operated with a hydraulic cylinder operator located within a gatehouse on top of the intake structure, immediately above the gates. A slanted steel trash rack located on the upstream side of the intake structure spans the gate openings and prevents debris from entering the tunnel through the gates.

Tunnels/Conduits

Kerckhoff No. 1

Water passing through the gates enters a tunnel, which is approximately 16,913 feet long, as measured from the gatehouse to the surge chamber above the K1 Powerhouse. The tunnel cross section is square in shape with an arched top. The typical tunnel cross section has a bottom width and wall height of 17 feet, with an arch top with a 19.25-foot radius. The tunnel is unlined except for short sections at the intake and at the downstream portals. The tunnel has the capacity to convey 1,700 cfs of water.

Three adits intersect the Kerckhoff No. 1 Tunnel and are located within the FERC Project Boundary. Adit 1 is located approximately 8,164 feet downstream of the intake, and Adit 2 is located approximately 11,097 feet downstream of the intake. Both adits are approximately 120 feet long and measure approximately 20 feet in cross section. The adits have been sealed with concrete walls about 200 feet from the entrance of the adits, so the adits and the access to the tunnel via the adits is no longer accessible. A 20-inch-diameter steel pipe exits Adit 2 through the concrete seal and is used for personnel access.

The North Adit intersects the Kerckhoff No. 1 Tunnel approximately 366 feet downstream of the intake structure. The adit is 16 to 18 feet in cross section and is approximately 507.5 feet long with an 18-inch concrete shaft that connects to the instream flow release pipe.

A surge chamber is located near the downstream tunnel portal. It is an unlined vertical shaft consisting of two sections. The lower section has a maximum diameter of 40 feet at the bottom (elevation of 930 feet). The upper section is approximately 17 feet

in diameter from an elevation of 980 feet above msl to the surface at an elevation of 1,005 feet above msl. The top of the surge chamber is covered by a chain-link mesh and is enclosed by an 8-foot-high chain-link fence to prevent public access.

Kerckhoff No. 2

A 25-foot-long reinforced transition connects the intake structure to the Kerckhoff No. 2 Tunnel. The main tunnel has a circular, machine-excavated cross section, which is 24 feet in diameter. The main tunnel is unlined and is approximately 21,632 feet long as measured from the end of the transition to the center line of the surge tank located near the top of the penstocks. A rock trap is located in the main tunnel, just upstream of the surge tank. An 8-foot-diameter adit tunnel intersects the main tunnel just upstream of the rock trap. The adit is closed with a plug with a steel gate.

The surge tank is a 216.8-feet-high vertical shaft that extends from the main tunnel to the ground surface. The surge tank includes three sections. The lowest elevation section is 20 feet in diameter where it intersects the tunnel. The middle section is 71 feet in diameter, and the upper section is 110 feet in diameter. The surge tank is capped at the surface by a 34-foot-high by 111.5-foot-diameter, above ground, steel surge tank. A 9.5-foot-diameter orifice located just above the tunnel intersection is used to control flow into the surge tank.

Penstocks and Penstock Bypass

Kerckhoff No. 1 Penstocks

The Kerckhoff No. 1 Tunnel connects to three 96-inch-diameter steel pipes at a bulkhead located at the top of the Kerckhoff No. 1 penstocks. Below the bulkhead, all three penstocks are buried and constructed of riveted steel pipe that varies in diameter from 96 to 84 inches, with a plate thickness that varies from 5/16 inch to 11/16 inch. Water entering the three penstocks can be controlled by three rising stem, electric motor-powered, 96-inch-diameter valves located on a platform structure above the steel pipes. Penstock No. 1 is 913 feet long, Penstock No. 2 is 926 feet long, and Penstock No. 3 is 946 feet long.

On March 8 and 29, 2013, PG&E filed an application to amend its license to decommission Kerckhoff Generating Unit No. 2, because it was inoperable and uneconomical to repair. Among other things, PG&E proposed to permanently close and seal the main shut-off and bypass valves at the Kerckhoff Generating Unit No. 2 penstock, remove an approximately 12-foot-long section of the penstock immediately downstream of the shutoff valve, and remove exposed air valves and cap, and permanently close the turbine shut-off valve. FERC issued an order amending the license

as proposed by PG&E on April 16, 2013.[4] Accordingly, Penstock No. 2 is no longer operational and is no longer a part of the project license, although most of it remains buried in place.

Kerckhoff No. 2 Penstock

The tunnel connects to a buried penstock, which is approximately 1,013 feet long. The penstock includes three sections. The upper section is 20 feet in diameter, 481 feet long, and concrete-lined. The middle section is 18 feet in diameter, 338 feet long, and concrete-lined. The lower section is 15 feet in diameter, 194 feet long, and consists of a steel-lined section that enters the powerhouse chamber. A penstock construction access tunnel intersects the penstock. This access tunnel is no longer in use and has therefore been plugged.

Powerhouse, Switchyard, and Tailrace

Kerckhoff No. 1 Powerhouse and Tailrace

The K1 Powerhouse went into operation on August 15, 1920. The powerhouse is a reinforced concrete structure and is approximately 45 feet by 99 feet in plan view. The turbine floor is below the surface of the ground and has rock walls. The powerhouse is operated semi-automatically with supervisory control from PG&E's Fresno Operating Center.

The powerhouse contains three 15,000-horsepower, vertical reaction-type Francis turbines built by Allis-Chalmers. However, Unit No. 2 is no longer operational and is no longer part of the project license. Generating Units Nos. 1 and 3 are both operational and are rated at 11,360 kilowatts (kW) each, for an authorized installed capacity of 22,720 kW. Total maximum flow through the powerhouse is 1,500 cfs. After passing through the powerhouse, water is discharged directly to the San Joaquin River.

Kerckhoff No. 1 Switchyard

The switchyard is located on a steep hillside immediately behind the powerhouse. The transformers are located on a concrete-floored bench carved into the hillside on the south rear exterior of the building. The system has two outdoor transformer banks consisting of one three-phase and seven single-phase 6.6/115-kilovolt (kV) transformers (one spare, three in-place spares from retired Unit No. 2, and three in-service for Unit No. 3). Three 115-kV circuit breakers are provided for outgoing transmission circuits. Three sets of 115-kV transmission lines exit the switchyard, but these transmission lines are not part of the project license, Pacific Gas and Electric Company, 85 FERC ¶ 61,411 (1998).

[4] 143 FERC ¶ 62,034 (2013).

Kerckhoff No. 2 Powerhouse and Tailrace

The K2 Powerhouse is an underground circular chamber approximately 85 feet in diameter by 124 feet high. The powerhouse has three floors: a basement floor, a turbine floor, and a generator floor. The powerhouse contains one 190,000-horsepower, vertical Francis-type turbine with a generator unit rated at 140,000 kW. An underground chamber housing transformers and switching gear connects to the powerhouse.

Total maximum flow through the powerhouse is 5,100 cfs. After passing through the powerhouse, water is discharged to the San Joaquin River via a concrete lined discharge tunnel and tailrace channel. The discharge tunnel is 25 feet in diameter and approximately 531 feet long. It connects to an open tailrace channel, with a base width of 40 feet and 4 to 1 side slopes. Flow from the discharge tunnel into the tailrace channel is controlled by two hydraulically operated, 19-foot-high by 13-foot-wide gates housed in a discharge structure located near the east bank of the San Joaquin River.

Kerckhoff No. 2 Switchyard

The switchyard is located at ground level immediately above the underground powerhouse near the east bank of the San Joaquin River, occupying an area that measures approximately 152 feet by 177 feet. The switchyard contains the main transformer and four 115-kV circuit breakers. Two sets of 115-kV transmission lines exit the switchyard, but these transmission lines are not part of the current project license.[5]

Stream and Reservoir Gages

PG&E currently maintains a network of stream, powerhouse, and reservoir gaging stations in the watershed, to monitor and record the storage and flow of water throughout the project. This network consists of two stations that measure diversion flows (J3, J6), one station that measures water surface elevation in Kerckhoff Reservoir (J1), and one gage that measures river flows in the San Joaquin River below Kerckhoff Dam (J2).

Communication and Distribution Lines

The project includes the following 12-kV distribution lines, fiber optic lines, and telephone lines:

- 12kV (Fresno County)
- 12kV & Telephone Line (Madera County)

[5] 85 FERC ¶ 61,411 (1998).

- Fiber Optics & 12-kV Pole Line between Kerckhoff No. 1 Switchyard and Kerckhoff No. 2 Switchyard

Project Recreation Facilities

The project includes one recreation development, Smalley Cove Recreation Area. This facility was constructed in 1983 and consists of a campground with five campsites and five day-use sites, a parking area, and a launch area for small trailered or car-top watercraft. In addition, potable water is available. In 2002, PG&E added a host site with a pad for a recreation vehicle and utilities to provide on-site management of this facility to deter vandalism.

Other than near the Smalley Cove Recreation Area, the Kerckhoff Reservoir shoreline is only accessible to the public via watercraft or lengthy cross-country travel by foot because of steep terrain and privately owned land. The primary recreation activities at Kerckhoff Reservoir include swimming, boating, fishing, camping, picnicking, hiking, and horseback riding (PG&E 2016a). The reservoir is open all year for fishing.

3.1.2 Existing Project Operation

The project is operated in compliance with existing regulatory requirements, agreements, and water rights to generate power. ***PG&E does not have water delivery requirements associated with the project.*** The following sections summarize water management, regulatory requirements, water rights, and water supply agreements associated with the project.

Water Management

The operations of the project are governed by its existing FERC license, issued in 1979, and subsequent FERC orders and amendments. PG&E operates the project for power generation and to make maximum use of available flow (PG&E 1977). The system is normally operated remotely from the Fresno Operating Switching Center. Powerhouse operations and reservoir levels are monitored and controlled 24 hours a day, 7 days a week at the switching center. Flows beyond the capacity of the automatic gates are operated manually. Minimum instream flows are also continuously monitored, and are adjusted manually on-site.

The project is operated to meet minimum instream flow requirements, flows required to protect the American shad, and water temperatures for the protection of smallmouth bass, as described in Article 45 of the project license, as amended by the April 22, 1993 Order Establishing Permanent Flow Release Regime:

> [T]he Licensee shall discharge a minimum flow of 25 cfs downstream of Kerckhoff Dam during normal years and a minimum flow of 15 cfs during dry

years, with additional releases as determined necessary in consultation with the California Department of Fish and Wildlife (formerly California Department of Fish and Game [CDFW]) to: (1) maintain stream temperatures at or below 27°C upstream of Kerckhoff No. 2 powerhouse, and (2) flush sediments that may accumulate in the streambed below Kerckhoff Dam. Based on an agreement between CDFW and PG&E (PG&E 1980), up to a total of 50 cfs may be released downstream of Kerckhoff Dam, to hold stream temperatures to 27°C or less between Kerckhoff No. 2 and Kerckhoff Dam. The additional releases will be made when the water temperature exceeds 27°C for a minimum of four hours per day for five consecutive days.

A 'dry year' shall be defined as any twelve-month period beginning May 1 in which the unimpaired runoff of the San Joaquin River at Millerton Lake from April 1 to July 31, as forecast by the California Department of Water Resources on April 1 and as may be adjusted by the State on May 1 or June 1, will be 45 percent or less of the average April- July period. The average April-July period will be computed by the California Department of Water Resources for the 50-year period used at the time.

If during a designated dry year, the February 1 or later water prediction indicates that dry year conditions no longer prevail, normal year flow releases will resume immediately.

The minimum flow may be modified temporarily: (a) to the extent required by operating emergencies beyond the control of the Licensee; and (b) for fishery management purposes, upon mutual agreement between the Licensee and CDFW.

The permanent spawning season flow release regime shall be implemented each year from May 15 through June 30, as follows. The licensee shall release from the K2 powerhouse 775 cfs from 2200 to 0200 hours, and 400 cfs during the remaining hours, or 400 cfs from the K1 powerhouse, when the reservoir elevation is below 545 feet msl. When the reservoir elevation is at or above 545 feet msl, the licensee shall release from the K2 powerhouse 1,200 cfs from 2200 to 0200 hours and 775 cfs during the remaining hours, or 400 cfs from the K1 powerhouse.

These flows may be temporarily modified due to lack of sufficient inflows or operating emergencies beyond the control of the licensee, and for short periods upon agreement among the licensee, CDFW, and the U.S. Fish and Wildlife Service.

Kerckhoff Reservoir has very limited storage capacity, therefore PG&E has almost no ability to increase peak flows below Kerckhoff Dam, ***above those flows that would happen in the absence of the project***. Although, a number of factors, ***beyond PG&E's control***, could cause sudden high flows in the San Joaquin River downstream of

Kerckhoff Dam, including inflows into Kerckhoff Reservoir and those related to potential operations events and/or related to grid-conditions.

Water Rights

PG&E holds water rights for both power and incidental domestic uses. Water is diverted from the San Joaquin River for generation at K1 and K2 powerhouses. PG&E has three licensed water rights for project diversions and two pre-1914 water rights.

License 340, with a priority date of September 25, 1919, PG&E has the right to divert 900 cfs and store 3,200 acre-feet in Kerckhoff Reservoir for the purpose of generating hydroelectric energy at K1 and K2 powerhouses. License 341, with a priority date of April 11, 1922, PG&E has the right to divert 175 cfs from January 1 to August 15 for the purpose of generating hydroelectric energy at K1 and K2 powerhouses. License 339, with a priority date of November 14, 1970, PG&E has the right to divert to storage 700 acre-feet in Kerckhoff Reservoir for the purpose of generating hydroelectric energy at K1 and K2 powerhouses. License 13352, with a priority date of September 28, 1977, PG&E has the right to divert 4,600 cfs in Kerckhoff Reservoir for the purpose of generating hydroelectric energy and for incidental domestic use at K2 Powerhouse.

3.2 APPLICANT'S PROPOSAL

3.2.1 Proposed Project Facilities and Operations

PG&E proposes to continue to operate and maintain the Kerckhoff Hydroelectric Project as required by its existing license. PG&E does not propose any new development or changes in project operation at this time.

The PAD states that PG&E proposes to modify the existing project boundary to: (1) include all facilities necessary for operation and maintenance of the project, and (2) exclude lands within the current FERC Project Boundary that are not necessary for the operation and maintenance of the project. ***PG&E proposes no changes to the existing project boundary at this time; however, PG&E and other stakeholders may propose boundary adjustments during the course of the relicensing process.***

3.2.2 Proposed Environmental Measures

PG&E does not propose ***new environmental measures at this time, prior to studies being performed. New environmental measures may be proposed as a result of the relicensing process.***

3.3 DAM SAFETY

It is important to note that dam safety constraints may exist and should be taken into consideration in the development of proposals and alternatives considered in the pending proceeding. For example, proposed modifications to the dam structure, such as the addition of flashboards or fish passage facilities, could impact the integrity of the dam structure. As the proposal and alternatives are developed, the applicant must evaluate the effects and ensure that the project would meet the Commission's dam safety criteria found in Part 12 of the Commission's regulations and the engineering guidelines (http://www.ferc.gov/industries/hydropower/safety/guidelines/eng-guide.asp).

3.4 ALTERNATIVES TO THE PROPOSED ACTION

Commission staff will consider and assess all alternative recommendations for operational or facility modifications, as well as protection, mitigation, and enhancement measures identified by the Commission, the agencies, Indian tribes, NGOs, and the public.

3.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

At present, we propose to eliminate the following alternatives from detailed study in the EA.

3.5.1 Federal Government Takeover

In accordance with § 16.14 of the Commission's regulations, a federal department or agency may file a recommendation that the United States exercise its right to take over a hydroelectric power project with a license that is subject to sections 14 and 15 of the FPA.[6] We do not consider federal takeover to be a reasonable alternative. Federal takeover of the project would require congressional approval. While that fact alone would not preclude further consideration of this alternative, there is currently no evidence showing that federal takeover should be recommended to Congress. No party has suggested that federal takeover would be appropriate, and no federal agency has expressed interest in operating the project.

3.5.2 Non-power License

A non-power license is a temporary license the Commission would terminate whenever it determines that another governmental agency is authorized and willing to

[6] 16 U.S.C. §§ 791(a)-825(r).

assume regulatory authority and supervision over the lands and facilities covered by the non-power license. At this time, no governmental agency has suggested a willingness or ability to take over the project. No party has sought a non-power license, and we have no basis for concluding that the Kerckhoff Hydroelectric Project should no longer be used to produce power. Thus, we do not consider a non-power license a reasonable alternative to relicensing the project.

3.5.2 Project Decommissioning

Decommissioning of the project could be accomplished with or without dam removal. Either alternative would require denying the relicense application and surrender or termination of the existing license with appropriate conditions. There would be significant costs involved with decommissioning the project and/or removing any project facilities. The project provides a viable, safe, and clean renewable source of power and consumptive water to the region. With decommissioning, the project would no longer be authorized to generate power.

No party has suggested project decommissioning would be appropriate in this case, and we have no basis for recommending it. Thus, we do not consider project decommissioning a reasonable alternative to relicensing the project with appropriate environmental measures.

4.0 SCOPE OF CUMULATIVE EFFECTS AND SITE-SPECIFIC RESOURCE ISSUES

4.1 CUMULATIVE EFFECTS

According to the Council on Environmental Quality's regulations for implementing NEPA (40 C.F.R. 1508.7), a cumulative effect is the effect on the environment that results from the incremental effect of the 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 of time, including hydropower and other land and water development activities.

4.1.1 Resources that could be Cumulatively Affected

Based on information in the PAD for the Kerckhoff Hydroelectric Project, and preliminary staff analysis, we identified sediment transport as a resource that could be cumulatively affected by the proposed continued operation and maintenance of the Kerckhoff Hydroelectric Project in combination with other activities in the Upper San Joaquin River Basin.

Additionally, the EPA identified the Bureau of Reclamation proposed new dam and reservoir project, analyzed in the Upper San Joaquin River Basin Storage Investigation, as an action that would affect the Kerckhoff project. EPA recommends that the Commission evaluate how the potential implementation of the proposed new dam and reservoir project would impact the Kerckhoff project, and in particular if the Kerckhoff license would be reopened or amended to address flow regimes, sediment sluicing, and the operation or decommissioning of the project's powerhouses.

4.1.2 Geographic Scope

Our 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 Upper San Joaquin River Basin. We identified the geographic scope for sediment transport to include the San Joaquin River from the Kerckhoff Reservoir to its confluence with Millerton Lake. We chose this geographic scope because the operation and maintenance of the Kerckhoff Hydroelectric Project, in combination with other water development activities in the immediate surrounding drainages, may cumulatively affect sediment transport through the geographic reach identified. This geographic scope is also pertinent to the Bureau of Reclamation proposed new dam and reservoir project because the proposed reservoir would inundate the confluence of the San Joaquin River and Millerton Lake and extend to Kerckhoff Dam.

4.1.3 Temporal Scope

The temporal scope of our cumulative effects analysis in the EA will include a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. Based on the potential term of a new license, the temporal scope will look 30 to 50 years into the future, concentrating on the effect on the resources from reasonably foreseeable future actions. The historical discussion will, by necessity, be limited to the amount of available information for each resource. The quality and quantity of information, however, diminishes as we analyze resources further away in time from the present.

4.2 RESOURCE ISSUES

In this section, we present a preliminary list of environmental issues to be addressed in the EA. We identified these issues, which are listed by resource area, by reviewing the PAD and the Commission's record for the Kerckhoff Hydroelectric Project. This list is not intended to be exhaustive or final, but contains the issues raised to date. After the scoping process is complete, we will review the list and determine the appropriate level of analysis needed to address each issue in the EA. Those issues identified by an asterisk (*) will be analyzed for both cumulative and site-specific effects.

4.2.1 Geologic and Soils Resources

- Effects of continued project operation and maintenance on sediment transport in Kerckhoff Reservoir and the project's bypassed reach.*

4.2.2 *Water Resources*

- Effects of continued project operation and maintenance on ***water quality, including, but not limited to,*** dissolved oxygen and water temperature in Kerckhoff Reservoir and the project's bypassed reach.

4.2.3 *Fishery* Resources

- Effects of continued project operation and maintenance on aquatic habitat in Kerckhoff Reservoir and the project's bypassed reach.

- Effects of continued project operation and maintenance on fish and aquatic macroinvertebrate populations in Kerckhoff Reservoir and the project's bypassed reach.

- Effects of continued project operation, ***maintenance,*** and related recreational use on the introduction and spread of aquatic invasive species.

4.2.4 Terrestrial Resources

- Effects of project operation and maintenance activities on riparian habitat.

- ***Effects of continued project operation and maintenance on amphibians and turtles in Kerckhoff Reservoir and the project's bypassed reach.***

- Effects of project ***operation,*** maintenance activities, and recreational use on the spread of non-native invasive plant species.

- Effects of project operation, maintenance activities, and recreational use on special-status and culturally important plant species.

- Effects of project operation, maintenance activities, and recreational use on special-status wildlife species, including the bald eagle and bat species.

4.2.5 Threatened and Endangered Species

- Effects of continued project operation, maintenance, and recreational use on federally listed and proposed endangered, threatened, and candidate species.

4.2.6 Recreation Resources

- Effects of project operation and maintenance on recreational access and use in the project area.

- Adequacy of existing recreational access and facilities to meet current and future recreational demand.

- Effects of project operation and maintenance on recreational whitewater boating use on the San Joaquin River, within the project area.

4.2.7 Cultural Resources

- Effects of continued project operation and maintenance on historic or archeological resources, or traditional cultural properties that may be eligible for inclusion in the National Register of Historic Places.

5.0 PROPOSED STUDIES

Section 6.2 of PG&E's PAD identifies a number of potential studies and analyses that could be used to address data gaps identified by the review of existing information. Each identified potential study includes the following subsections: (1) Potential Resource Issue; (2) Project Nexus; (3) Relevant Information; (4) Potential Information Gaps; and (5) Potential Studies to Address Identified Significant Information Gaps. Table 1 identifies PG&E's draft proposed studies by resource area; the PAD contains detailed information on the study proposals. Further studies may be needed based on comments provided to the Commission and PG&E from interested participants, including Indian tribes.

Table 1. PG&E's draft proposed studies for the Kerckhoff Hydroelectric Project. (Source: Kerckhoff Hydroelectric Project PAD)

Resource Area	Draft Proposed Studies
Water Use and Hydrology Resources	
	Study HYD 1 – Operations Simulation Model
	Study HYD 2 – Hydrology with and without the Project
Geology and Soils Resources	
	Study GEO 1 – Channel Form and Fluvial Processes
	Study GEO 2 – Project-related Sediment Management Practices in Kerckhoff Reservoir

Resource Area	Draft Proposed Studies
	Study GEO 3 – Project-related Erosion
Water Quality Resources	
	Study WQ 1 – Water Temperature in Kerckhoff Reservoir and ***San Joaquin River Bypass Reach***
	Study WQ 2 – Water Quality Sampling in ***Project*** Bypass Reach and Kerckhoff Reservoir
Fish and Aquatic Resources	
	Study AQ 1 – Aquatic Habitat Mapping
	Study AQ 2 – Fish Populations
	Study AQ 3 – Mussels and Aquatic Mollusks
	Study AQ 4 – Entrainment
	Study AQ 5 – Western Pond Turtles
Terrestrial Resources	
	Study BOT 1 – ***Plant*** Communities, ***Special-Status Plants***, ***Invasive Weeds***
	Study BOT 2 – Riparian and Wetland Resources
	Study WILD 1 – Special-Status Wildlife Species
Recreation, Land Use, and Aesthetics	
	Study REC 1 – Whitewater Boating ***Flow*** Assessment
	Study REC 2 – Recreation Facility Assessment
	Study REC 3 – Recreation Visitor Use
	Study REC 4 – Recreation Visitor Use Surveys
	Study LAND 1 – Project Roads and Trails Assessment
Cultural and Tribal Resources	
	Study CUL 1 – Cultural Resources
	Study CUL 2 – Tribal Resources

6.0 EA PREPARATION

At this time, we anticipate the need to prepare a draft and final EA. The EA will be sent to all persons and entities on the Commission's service and mailing lists for the Kerckhoff Hydroelectric Project. The EA will include our recommendations for operating procedures, as well as environmental protection and enhancement measures that should be part of any license issued by the Commission. All recipients will then have 30 days to review the EA and file written comments with the Commission.

The major milestones, with pre-filing target dates, are as follows:

Major Milestone	Target Date
Scoping Meetings	February 2018
Applicant files Final License Application	November 2020
Ready for Environmental Analysis Notice Issued	-
Deadline for Filing Comments, Recommendations, and-Agency Terms and Conditions/Prescriptions	-
Draft EA Issued	-
Comments on draft EA Due	-
Deadline for Filing Modified Agency Recommendations	-
Final EA Issued	-
Order Issued	-

Post-filing milestones will be established following the applicant's filing of the final license application. A copy of the applicant's process plan and schedule, which has a complete list of pre-filing relicensing milestones for the Kerckhoff Hydroelectric Project, including those for developing the license application, is attached as appendix B to this SD2.

7.0 PROPOSED EA OUTLINE

The preliminary outline for the Kerckhoff Hydroelectric Project EA is as follows:

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8.0 COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA, 16 U.S.C. section 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by a project. PG&E has preliminarily identified and reviewed the plans listed below that may be relevant to the Kerckhoff Hydroelectric Project. Agencies are requested to review this list and inform the Commission staff of any changes. If there are other comprehensive plans that should be considered for this list that are not on file with the Commission, or if there are more recent versions of the plans already listed, they can be filed for consideration with the Commission according to 18 CFR 2.19 of the

Commission's regulations. Please follow the instructions for filing a plan at http://www.ferc.gov/industries/hydropower/gen-info/licensing/complan.pdf.

The following is a list of comprehensive plans currently on file with the Commission that may be relevant to the Kerckhoff Hydroelectric Project.

California Department of Fish and Game. 2007. California Wildlife: Conservation Challenges, California's Wildlife Action Plan. Sacramento, California. 2007.

California Department of Fish and Game. 1993. Restoring Central Valley Streams: A Plan for Action. Sacramento, California. November 1993.

California Department of Fish and Game. 2003. Strategic Plan for Trout Management: A Plan for 2004 and Beyond. Sacramento, California. November 2003.

California Department of Fish and Game. U.S. Fish and Wildlife Service. 2010. Final Hatchery and Stocking Program Environmental Impact Report/Environmental Impact Statement. Sacramento, California. January 2010.

California Department of Fish and Wildlife. 2008. California Aquatic Invasive Species Management Plan. Sacramento, California. January 18, 2008.

California Department of Parks and Recreation. 1998. Public Opinions and Attitudes on Outdoor Recreation in California. Sacramento, California. March 1998.

California Department of Parks and Recreation. 1980. Recreation Outlook in Planning District 2. Sacramento, California. April 1980.

California Department of Parks and Recreation. California Outdoor Recreation Plan (SCORP). Sacramento, California. April 1994.

California Department of Water Resources. 1994. California Water Plan Update. Bulletin 160-93. Sacramento, California. October 1994. Two volumes and executive summary.

California State Water Resources Control Board. 1995. Water Quality Control Plan Report. Sacramento, California. Nine volumes.

California State Water Resources Control Board. 2011. Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. Sacramento, California. December 13, 2006.

Forest Service. 2004. Sierra Nevada National Forest Land and Resource Management Plan, Amendment. Department of Agriculture, Vallejo, California. January 2004.

National Marine Fisheries Service. 2014. Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook salmon and Central Valley Spring-run Chinook salmon and the Distinct Population Segment of California Central Valley Steelhead. Sacramento, California. July 2014.

National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.

State Water Resources Control Board. 1999. Water Quality Control Plans and Policies Adopted as Part of the State Comprehensive Plan. April 1999.

U.S. Fish and Wildlife Service. 1990. Central Valley Habitat Joint Venture Implementation Plan: A Component of the North American Waterfowl Management Plan. February 1990.

U.S. Fish and Wildlife Service. 2001. Final Restoration Plan for the Anadromous Fish Restoration Program. Department of the Interior, Sacramento, California. January 9, 2001.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American Waterfowl Management Plan. Department of the Interior. Environment Canada. May 1986.

U.S. Fish and Wildlife Service. n.d. Fisheries USA: The Recreational Fisheries Policy of the U.S. Fish and Wildlife Service. Washington, D.C.

9.0 MAILING LIST

The list below is the Commission's official mailing list for the Kerckhoff Hydroelectric Project (FERC No. 96). If you want to receive future mailings for the Kerckhoff Hydroelectric Project, and are not included in the list below, please send your request by email to efiling@ferc.gov or by mail to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, DC 20426. All written and emailed requests to be added to the mailing list must clearly identify the following on the first page: Kerckhoff Hydroelectric Project No. 96-045. You may use the same method if requesting removal from the mailing list below.

Register online at http://www.ferc.gov/esubscribenow.htm to be notified via email of new filings and issuances related to this or other pending projects. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll free at 1-866-208-3676, or for TTY, (202) 502-8659.

Official Mailing List for the Kerckhoff Hydroelectric Project

Amador Water Agency c/o Joshua Horowitz Attorney Bartkiewicz, Kronick & Shanahan 1011 22nd Street Sacramento, CA 95816-4907	Kevin Richard Colburn National Stewardship Director American Whitewater 1035 Van Buren Street Missoula, MT 59802
Calif. Sportfishing Protection Alliance c/o Stephan Volker Law Offices of Stephan C. Volker 1633 University Avenue Berkeley, CA 94703	California Generation Coalition and Individual Members c/o Norman A. Pederson, Esq. Attorney, Hanna and Morton LLP 444 South Flower Street, Suite 1500 Los Angeles, CA 90071-2916
California Hydro. Reform Coalition c/o Richard Roos-Collins Director, Legal Services Natural Heritage Institute 2140 Shattuck Avenue, Ste. 801 Berkeley, CA 94704-1229	California Public Utilities Commission California State Building 505 Van Ness Ave. San Francisco, CA 94102-3214
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Steven G. Lins Assistant City Attorney Glendale, City of 613 E Broadway, Ste. 220 Glendale, CA 91206-4308	Kerckhoff 1 and 2 Project LLC c/o John Whittaker Winston & Strawn LLP 1700 K St. N.W. Washington, District of Columbia 20006-3817
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Les Nicholson Hydro Manager Nevada Irrigation District 28311 Secret Town Rd. Colfax, CA 95713-9473	Northern California Power Agency c/o Robert McDiarmid Spiegel & McDiarmid LLP 1875 Eye Street, N.W., Ste. 700 Washington, District of Columbia 20006
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APPENDIX A
STUDY PLAN CRITERIA
18 CFR Section 5.9(b)

Any information or study request must contain the following:

1. Describe the goals and objectives of each study proposal and the information to be obtained;

2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;

3. If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;

4. Describe existing information concerning the subject of the study proposal, and the need for additional information;

5. Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;

6. Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and

7. Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

APPENDIX B
KERCKHOFF HYDROELECTRIC PROJECT PROCESS PLAN AND SCHEDULE

Shaded milestones are unnecessary if there are no study disputes. If the due date falls on a weekend or holiday, the due date is the following business day. Early filings or issuances will not result in changes to these deadlines.

Responsible Party	Pre-Filing Milestone[a]	Date[b]	FERC Regulation
Applicant	Issue Public Notice for NOI/PAD	11/16/17	5.3(d)(2)
Applicant	File NOI/PAD	11/16/17	5.5, 5.6
FERC	Issue Notice of Commencement of Proceeding and Scoping Document 1	1/16/18	5.8
FERC	Scoping Meetings and Project Site Visit	2/13/18 2/14/18	5.8(b)(viii)
All Stakeholders	File Comments on PAD/Scoping Document 1 and Study Requests	3/17/18	5.9
FERC	Issue Scoping Document 2 (if necessary)	4/30/18	5.10
Applicant	File Proposed Study Plan	4/30/18	5.11(a)
All Stakeholders	Proposed Study Plan Meeting	5/30/18	5.11(e)
All Stakeholders	File Comments on Proposed Study Plan	7/29/18	5.12
Applicant	File Revised Study Plan	8/28/18	5.13(a)
All Stakeholders	File Comments on Revised Study Plan	9/12/18	5.13(b)
FERC	Issue Director's Study Plan Determination	9/27/18	5.13(c)
Mandatory Conditioning Agencies	File Any Study Disputes	10/17/18	5.14(a)
Dispute Panel	Select Third Dispute Resolution Panel Member	11/1/18	5.14(d)
Dispute Panel	Convene Dispute Resolution Panel	11/6/18	5.14(d)(3)
Applicant	File Comments on Study Disputes	11/11/18	5.14(i)

Responsible Party	Pre-Filing Milestone[a]	Date[b]	FERC Regulation
Dispute Panel	Dispute Resolution Panel Technical Conference	11/16/2018	5.14(j)
Dispute Panel	Issue Dispute Resolution Panel Findings	12/6/18	5.14(k)
FERC	Issue Director's Study Dispute Determination	12/26/18	5.14(l)
Applicant	First Study Season	2019	5.15(a)
Applicant	File Initial Study Report	9/27/19	5.15(c)(1)
All Stakeholders	Initial Study Report Meeting	10/12/19	5.15(c)(2)
Applicant	File Initial Study Report Meeting Summary	10/27/19	5.15(c)(3)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	11/26/19	5.15(c)(4)
All Stakeholders	File Responses to Disagreements/Amendment Requests	12/26/19	5.15(c)(5)
FERC	Issue Director's Determination on Disagreements/Amendments	1/25/20	5.15(c)(6)
Applicant	Second Study Season	2020	5.15(a)
Applicant	File Updated Study Report	9/26/20	5.15(f)
All Stakeholders	Updated Study Report Meeting	10/11/20	5.15(f)
Applicant	File Updated Study Report Meeting Summary	10/26/20	5.15(f)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	11/25/20	5.15(f)
All Stakeholders	File Responses to Disagreements/Amendment Requests	12/25/20	5.15(f)
FERC	Issue Director's Determination on Disagreements/Amendments	1/24/21	5.15(f)
Applicant	File Preliminary Licensing Proposal (or Draft License Application)[c]	7/3/20	5.16(a)-(c)
All Stakeholders	File Comments on Preliminary Licensing Proposal (or Draft License Application)	10/1/20	5.16(e)

Responsible Party	Pre-Filing Milestone[a]	Date[b]	FERC Regulation
Applicant	File Final License Application	11/30/20	5.17
Applicant	Issue Public Notice of Final License Application Filing	12/14/20	5.17(d)(2)

[a] The activity description is a good faith effort to summarize the pertinent regulation. The reader is encouraged to read the specific regulation.

[b] When an activity is contingent on completion of a previous activity, the schedule assumes the previous activity is completed the latest date possible for that previous activity, unless otherwise indicated.

[c] This ILP schedule assumes that studies begin when FERC issues its Study Determination and may continue for two years or more.

Document Content(s)