

120 FERC ¶ 62,001
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Pacific Gas and Electric Company
Shasta County, California

Project No. 233-081

ORDER ISSUING NEW LICENSE

(July 2, 2007)

INTRODUCTION

1. On October 19, 2001, Pacific Gas and Electric Company (PG&E) filed an application for a new major license pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ to continue operation and maintenance of the Pit 3, 4, 5 Hydroelectric Project No. 233. The 312.33-megawatt (MW) project is located on the Pit River in Shasta County, California, and partly occupies a total of approximately 750 acres of federal lands administered by the U.S. Forest Service. As discussed below, I am issuing a new license for the project.

BACKGROUND

2. The Commission issued original licenses to Mount Shasta Power Corporation for the Pit Nos. 3 and 4 developments on October 23, 1923, and August 3, 1926, respectively. Those licenses were subsequently transferred to PG&E. On July 15, 1942, the Commission consolidated the licenses and included in the consolidated license the additional Pit No. 5 development then under construction. That license expired in 1973, and the project was operated under annual licenses until a new license was issued to PG&E on February 26, 1981, with a termination date of October 31, 2003.² Since the expiration of that license, PG&E has operated the project under annual license pending disposition of its license application.

3. Notice of the acceptance of the application was issued on April 9, 2002. Timely motions to intervene were filed by the California State Water Resources Control Board

¹ 16 U.S.C. §§ 797(e) and 808 (2000).

² *Pacific Gas & Electric Company*, 14 FERC ¶ 61,179 (1981). That order contains the project history described above.

(Water Board), Pit River Tribe (Tribe), Northern California Council of the Federation of Fly Fishers, U.S. Department of Agriculture's National Forest Service (Forest Service), California Trout and Trout Unlimited, California Department of Fish & Game (Cal Fish and Game), the U.S. Department of the Interior (Interior), South Fork Irrigation District and the County of Modoc, and American Whitewater Affiliation (American Whitewater) and Shasta Paddlers. Late-filed motions to intervene were filed by Anglers Committee Against Artificial Flows, Chico Paddleheads, Northeastern California Water Association, California Farm Bureau Federation, and Association for Safe Access to the Pit River. These interventions were granted by notice issued January 26, 2007. None of the intervenors oppose the project.

4. On August 12, 2002, the Commission issued public notice that the application was ready for environmental analysis and solicited comments, recommendations, terms and conditions, and prescriptions. In response, comments and recommendations were filed by: Water Board; Cal Fish and Game; Anglers Committee Against Artificial Whitewater Flows; Northern California Council of the Federation of Fly Fishers; Interior; California Department of Parks and Recreation (Parks and Recreation); American Whitewater, Shasta Paddlers, and Chico Paddleheads; Forest Service; the U.S. Department of Commerce's National Marine Fisheries Service; the Tribe; PG&E, Trout Unlimited and California Trout; California Wild Trout Preservation Society; and Denny Land & Cattle Company, LLC.

5. Commission staff issued a draft environmental impact statement (EIS) for the project on March 19, 2003, and a final EIS on June 8, 2004. Numerous comments were filed on the draft EIS, as listed in Appendix A of the final EIS. Staff considered all of the comments on the draft EIS in preparing the final EIS. Comments on the final EIS were filed by Interior's U.S. Fish and Wildlife Service (FWS). Subsequent references to EIS in this order are to the final EIS unless otherwise specified.

6. At the time it filed its license application, PG&E was engaged in negotiations with other stakeholders to reach mutually acceptable protection, mitigation, and enhancement measures for the new license. This group of stakeholders, known as the Pit River Collaborative Team (PRCT) was formed in November 1998 and met on a regular basis. On October 31, 2003, PG&E filed a collaborative agreement (PRCT agreement) on proposed protection, mitigation, and enhancement measures pertaining to several areas of project operation. In the EIS, staff considered those measures as superceding previous recommendations by the members of the collaborative team. On December 31, 2003, PG&E also filed a proposal, developed in collaboration with Cal Fish and Game, Water Board, and California Trout, relating to the Hat Creek fish barrier dam and Hat Creek Wild Trout Management Area. Staff considered this proposal in the EIS as well.

7. The motions to intervene, comments, and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

8. The Pit 3, 4, 5 Project occupies 4,330 acres, of which 3,259 acres are owned by PG&E, 746 acres are part of the Shasta National Forest, and 325 are privately owned.³ The project consists of three hydraulically connected developments, with a total of four dams, four reservoirs, three powerhouses, and associated tunnels, surge chambers, and penstocks. The developments extend along the Pit River, with Pit 3 the furthest upstream and Pit 5 the furthest downstream. The project has an authorized installed capacity of 317.25 MW and an average annual generation of about 1,913.7 gigawatt-hours (GWh). The developments are described generally below; a more detailed description of the project is set forth in ordering paragraph (B)(2) and in the EIS.⁴

Pit 3 Development

9. The Pit 3 development includes the 1,293-acre Pit 3 reservoir, known as Lake Britton, with a gross storage capacity of 41,877 acre-feet at elevation 2,737.5 feet National Geodetic Vertical Datum (NGVD) and a usable capacity of 14,443 acre-feet. Lake Britton is impounded by the Pit 3 dam, having a maximum height of 130 feet, a crest length of 494 feet, and a 254-foot-wide spillway with three bays and three gated outlets. Water from Lake Britton passes into either the Pit 3 powerhouse intake or the Pit 3 bypassed reach, which is about six miles long. The powerhouse intake is connected to a concrete tunnel with two sections, having a total length of four miles. Water passing through the tunnel enters a surge chamber and three penstocks en route to the Pit 3 powerhouse, which contains three generating units driven by three vertical Francis turbines, with a total normal operating capacity of 69.9 MW. The Hat Creek fish barrier dam is located on Hat Creek, just upstream of its confluence with Lake Britton.

³ Application at p. A-12. These figures do not reflect removal of non-jurisdictional transmission lines, inclusion of additional facilities to the project boundary in this license, and an inconsistency with the federal lands acreage for which the project is being charged, as discussed later in this order.

⁴ EIS at pp. 8-12.

Pit 4 Development

10. Water that passes through the Pit 3 powerhouse and Pit 3 bypassed reach converges at the upper end of the 105-acre Pit 4 reservoir, having a usable storage capacity of 1,970 acre-feet at elevation 2,422.5 feet NGVD. The Pit 4 reservoir is impounded by the Pit 4 dam, which comprises an overflow section with a spillway, three sluice gates, a 213-foot-long minimum flow outlet with a maximum height of 115 feet, a 202-foot-long section with a maximum height of 65 feet, and a 115-foot-long wing wall approximately 3 to 5 feet high. Water from the Pit 4 reservoir passes into either the Pit 4 powerhouse intake or the approximately 7.5-mile-long Pit 4 bypassed reach. The powerhouse intake is connected to an approximately 4.1-mile-long pressure tunnel. Water passing through the tunnel enters a surge chamber and two 780-foot-long penstocks en route to the Pit 4 powerhouse, which has two generating units driven by two vertical Francis turbines, with a combined normal operating capacity of 95 MW. The 6.7-mile-long, 230-kV Pit 4 transmission line delivers electricity produced at the Pit 4 powerhouse to PG&E's interconnected transmission system.

Pit 5 Development

11. Water that passes through the Pit 4 powerhouse and Pit 4 bypassed reach converges at the upper end of the 32-acre Pit 5 reservoir, having a usable storage capacity of 202 acre-feet at elevation 2,040.5 feet NGVD. The Pit 5 reservoir is impounded by the 340-foot-long, 67-foot-high Pit 5 dam, which includes four spill bays. Water from the Pit 5 reservoir passes into either the Pit 5 powerhouse intake or the approximately 9-mile-long Pit 5 bypassed reach. Water that passes into the intake travels through the approximately 0.97 mile-long tunnel No. 1 into the 48-acre Pit 5 Tunnel Reservoir, also known as the open conduit, with a usable storage capacity of 645 acre-feet at elevation 2,040.5 feet NGVD. The Pit 5 Tunnel Reservoir is impounded by the 3,100-foot-long, 66-foot-high Tunnel Reservoir dam. Water passes out of the Pit 5 Tunnel Reservoir into the 4.38 mile-long tunnel No. 2 before entering a surge chamber and four 1,380-foot-long penstocks en route to the powerhouse, which contains four generating units driven by 4 vertical Francis turbines, with a combined normal operating capacity of 160 MW. Water from the Pit 5 powerhouse and Pit 5 bypassed reach enters the Pit 6 reservoir, a component of PG&E's McCloud-Pit Project (FERC No. 2106).

Project Operations

12. The developments are typically operated as peaking facilities, but during periods of high flow the units operate at maximum capacity to minimize spill at the dams. License-required minimum flows of 150 cubic feet per second (cfs), 15 cfs, and 100 cfs are released from Lake Britton into the Pit 3 bypassed reach, from the Pit 4 reservoir into the Pit 4 bypassed reach, and from the Pit 5 reservoir into the Pit 5 bypassed reach,

respectively. During non-spill periods, the project is operated for daily peak loads, with a cycling of Lake Britton on a weekly basis. Lake Britton is typically drawn down 3 to 6 feet by project generation over the course of a week from full reservoir level and refilled during the weekends by reducing project generation. Lake Britton is kept above 2,724.5 feet NGVD, the minimum elevation allowable under the current license, to minimize the effect on recreational use of the reservoir, to maintain head on the Pit 3 powerhouse, and to enable refill of the reservoir during the off-peak period. The water surface elevations of the Pit 4 and 5 reservoirs fluctuate because they are the forebays for their powerhouses, but they are generally not drawn down below 2,404.5 and 2,030.5 feet NGVD, respectively.

Project Boundary

13. The project boundary includes the project facilities and reservoirs and some lands surrounding them, but does not include the bypassed reaches. Upstream of Lake Britton, the boundary extends along the Pit River about one mile upstream of the confluence with Hat Creek, which flows into the river at the upstream end of Lake Britton, and about 0.25 mile up Hat Creek. The downstream terminus of the project boundary is just below the Pit 5 powerhouse. There are about 340 acres of roads within the project boundary, of which about 111 acres are on Forest Service lands. This boundary varies between 50 and 200 feet wide along project roads. There is a 100-foot-wide segment within the project boundary along each of the three diversion tunnels. Lands within the project boundary also include rights-of-way for the 6.7-mile-long 230-kV Pit 4 transmission line and project telephone line links.⁵ Project and adjacent lands upstream of the Pit 4 powerhouse are within the Shasta National Forest, with most of those lands managed by the Lassen National Forest and a small portion of them managed by the Shasta-Trinity National Forest. Project lands downstream of the Pit 4 powerhouse, including the Pit 5 development, are outside of National Forest System (NFS) boundaries.⁶

14. Changes to project operations are primarily embraced in the provisions of the PRCT agreement, discussed below. As discussed later in this order, the existing project boundary is being changed to reflect removal of non-jurisdictional transmission lines and the inclusion of additional recreational and other facilities in the new license. PG&E proposes no increased capacity.

⁵ *Id.* at p. 297.

⁶ *Id.* at p. 296.

PRCT AGREEMENT

15. The PRCT agreement contains measures addressing reservoir operations, minimum streamflows, freshet flow releases, out-of-season spill flows, recreation streamflow releases, ramping rates, and streamflow information. The agreement was signed by PG&E, FWS, Forest Service, Interior's National Park Service, Parks and Recreation, Cal Fish and Game, Modoc County, South Fork Irrigation District, Trout Unlimited, California Trout, American Whitewater, and Iverson Reservoir, all of which concurred with these measures.⁷ In filing the agreement, PG&E requested that the Commission evaluate the consensus measures in the EIS and adopt them in the new license as appropriate protection, mitigation, and enhancement conditions.

16. The reservoir operations measures specify protocols for operating the dams, reservoirs, and powerhouses of each of the three developments that would serve to protect and enhance aquatic and riparian resources. The measures are intended to insure that winter and spring spill flows increase and recede more naturally and to provide a slight increase in the frequency and duration of spill events at Lake Britton, the Pit 3 reservoir. Lake Britton is to have a year-round minimum water surface elevation of 2,731.5 feet NGVD, with an elevation range of 2,731.5 to 2,733.5 feet NGVD between December 1 and April 20 of each year and a maximum elevation of 2,735.5 NGVD beginning generally on the Saturday before Memorial Day weekend. The protocols for the Pit 3 development specify conditions for operating the bladder gates and for operation of the powerhouse to avoid rapid cessation of spill when increasing powerhouse flow. The Pit 4 reservoir is to have a normal operating elevation of between 2,415.5 and 2,422.5 feet NGVD. The protocols for the Pit 4 development also specify steps to be taken during periods of increasing flow to the reservoir, to minimize flow pulses when inflow to the reservoir has reached its peak and is declining, and when the powerhouse is operating at less than full flow during a spill event. The protocols for the Pit 5 development provide that, as inflow to the Pit 5 reservoir increases, the powerhouse flows are to be ramped up to match inflow to the full powerhouse flow, with operation of the spillway gates to maintain a constant water elevation of about 2,040.5 feet NGVD. The protocols specify measures to prevent rapid cessation of spill when increasing powerhouse flow.

17. The minimum streamflow measures specify minimum flows to be released into each of the three bypassed reaches for the protection and enhancement of aquatic

⁷ In addition, Water Board actively participated in giving guidance to the parties but declined to sign the agreement because it did not want to prejudge PG&E's then-outstanding request for water quality certification, to be discussed *infra*.

resources and their habitat. For Pit 3, the licensee is to release at least 300 cfs during the summer and 280 cfs during the fall, with flows for the remainder of the year ranging between 300 and 450 cfs depending on whether spill has occurred. For Pit 4, the licensee is to release at least 375 cfs during the summer and 350 cfs during the fall, with flows for the remainder of the year ranging between 375 and 600 cfs depending on whether spill has occurred. For Pit 5, the licensee is to release at least 400 cfs during the summer and 350 cfs during the fall, with flows for the remainder of the year ranging between 400 and 550 cfs depending on whether spill has occurred. The agreement defines when each season is deemed to begin and end for each bypassed reach.

18. The measures for freshet flow releases are designed to ensure that a streamflow sufficient to maintain channel conditions and the riparian community will occur at least every second year. The project reaches are to be considered separately in determining whether a freshet flow is necessary. The agreement makes release of such flows dependent on spill and water temperature conditions. A freshet flow is defined in terms of duration of the event, extent of the instantaneous peak flow magnitude in cubic feet per second, and the level of a two-day average flow. The agreement provides for notification to pertinent state and federal agencies if a freshet flow release may be needed.

19. The agreement also would require that the licensee operate the project so that it does not cause discretionary, out-of-season spill flows in excess of twice the required minimum streamflow at each of the three project dams. The purpose of this measure is to protect aquatic life that could be impacted by high and widely varying flows at a time of year when the flows are normally low and stable. The agreement specifies the actions that the licensee is to take to minimize the magnitude, duration, and potential adverse ecological impacts of such spills and requires the licensee to consult with state and federal agencies to develop and implement reasonable mitigation for those impacts.

20. The agreement would require that the licensee, in consultation with state and federal agencies, the Tribe, and American Whitewater, develop a plan for providing annual recreation streamflow releases in the Pit 5 reach suitable for whitewater boating. The plan is to identify baseline data to evaluate possible ecological effects of recreational releases, identify a release schedule based on criteria specified in the agreement, provide for environmental and boater-use monitoring, and describe an adaptive management program for adjustment of the releases in response to the results of the monitoring.

21. The agreement would require that the licensee prevent adverse effects of rapid changes in streamflow on aquatic biota by following specified ramping rates when making streamflow releases from each of the project dams. Criteria for ramping rates are specified for freshet flow releases, the occurrence of spills influenced by powerhouse outages, out-of-season spills, and recreation streamflow releases.

22. Finally, the agreement provides for the licensee to make recreation streamflow information available to the public. The information is to include the hourly average streamflow in the river below each of the three dams for the current day and the past seven days, proposed dates and magnitude of planned freshet flow releases, and proposed dates for recreation streamflow releases. The licensee is also to notify the community of Big Bend and the Big Bend Rancheria in advance of planned freshet flow or recreation streamflow releases.

23. The PRCT agreement was not submitted as a settlement agreement for Commission approval. Nevertheless, it addresses the signatories' various environmental concerns while preserving power production at the project. Commission staff evaluated these measures in the EIS and recommended their adoption in the license.⁸ Overall, the terms of the PRCT agreement achieve an appropriate balance between continued project generation and environmental measures. Further, as discussed below, the water quality certification (WQC) conditions submitted by the Water Board include the agreement's protection, mitigation, and enhancement measures, as do, in most respects, the section 4(e) conditions submitted by the Forest Service. As such, the PRCT measures are being required by this license.

WATER QUALITY CERTIFICATION

24. Under section 401(a)(1) of the Clean Water Act,⁹ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued a water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.¹⁰

25. On October 4, 2001, PG&E applied to the Water Board for water quality certification for the Pit 3, 4, 5 Hydroelectric Project. Subsequently, PG&E withdrew and refiled the request for certification each year before the expiration of the one-year period in which the Water Board would have had to issue or deny the certification, or have it be deemed waived. On August 8, 2006, the Water Board issued certification for the project.

⁸ *Id.* at pp. 409-10 and 427.

⁹ 33 U.S.C. § 1341(a)(1) (2000).

¹⁰ 33 U.S.C. § 1341(d) (2000).

26. On September 7, 2006, PG&E filed with the Water Board a petition for reconsideration of the water quality certification. PG&E requested a three-year grace period for the implementation of the new minimum instream flows and reservoir level and operation protocols, which they stated would be infeasible until structural modifications are made at the Pit 4 and 5 dams.¹¹ PG&E also sought limited changes to the language of the certification to better reflect the wording of the PRCT agreement and the section 4(e) conditions submitted by the Forest Service. On January 25, 2007, the Water Board issued a revised certification with the modifications that PG&E had requested.

27. The revised certification contains 24 conditions and an additional 21 “mitigation measures.” The first 13 conditions, although organized differently, are essentially the same as the provisions of the PRCT agreement.¹² Condition 14 requires PG&E to comply with 11 of the 21 “mitigation measures” described in Attachment A to the revised certification.¹³ The remaining 10 conditions relate primarily to administrative matters. The certification conditions are set forth in Appendix A to this order and are incorporated into the license by ordering paragraph (D).

28. The 11 mitigation measures required by condition 14 provide for the licensee to develop plans in specific areas: streamflow and reservoir level monitoring (mitigation measure 1); water temperature and water quality monitoring (mitigation measure 2); fish and invertebrate monitoring (mitigation measure 3); erosion and sedimentation control (mitigation measure 4); spoil pile management (mitigation measure 5); dredging (mitigation measure 6); biological monitoring and adaptive management (mitigation

¹¹ The initial certification had provided for such a grace period at the Pit 3 dam.

¹² As issued in August 2006, the certification already reflected the agreement in most respects. In issuing the certification, the Water Board had modified its December 2005 draft of the certification to be consistent with section 4(e) conditions submitted by the Forest Service, discussed *infra*.

¹³ Attachment A of the Water Board’s revised certification comprises discussions of project impacts on various resources and of mitigation measures that would address those impacts. Condition 14 of the certification provides that PG&E comply with mitigation measure numbers 1 through 10, and 12. Within Attachment A, the Water Board also included additional mitigation measures nos. 11 and 13-21, which are outside the scope of the Water Board’s jurisdiction, but submitted as recommendations for inclusion in the license. These recommendations are considered under FPA section 10(a) and discussed later in this order.

measure 7); recreation streamflow release (mitigation measure 8); vegetation and noxious weed management (mitigation measure 9); riparian vegetation monitoring (mitigation measure 10); and recreation management (mitigation measure 12). These measures have all been: 1) recommended by staff; 2) required or recommended by the Forest Service; and 3) recommended by one or more of the resource agencies.¹⁴ Because condition 14 of the certification requires the licensee to comply with these measures, mitigation measures 1 through 10 and 12 will be included in Appendix A to this order and required by ordering paragraph (D).

SECTION 4(e) FINDINGS AND CONDITIONS

29. Section 4(e) of the FPA¹⁵ provides that the Commission can issue a license for a project located within any reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which the reservation was created or acquired.

30. I have reviewed the Organic Administration Act of 1897 (1897 Act),¹⁶ which established the purposes for forest reservations, and the presidential proclamations that created and expanded the Shasta National Forest.¹⁷ There is no evidence or allegation in this proceeding to indicate that relicensing the Pit 3, 4, 5 Project would interfere with the purposes of the Shasta National Forest, within which parts of the project are located.

¹⁴ See EIS at pp.410-17, 420-25, and 427 (licensee's proposals 9 and 18; staff's additional recommendations 1-6, 9, 10, 22, 23, and 26).

¹⁵ 16 U.S.C. § 797(e) (2000).

¹⁶ 16 U.S.C. § 473 *et seq.* (2000).

¹⁷ The Shasta National Forest was established as a forest reserve by presidential proclamation on October 3, 1905, 34 Stat 3157. The Trinity Forest Reserve was established by presidential proclamation on April 26, 1905, and renamed a National Forest in 1907. The Shasta and Trinity National Forests were administratively consolidated on July 1, 1954, with headquarters in Redding, CA. The purpose of the forest was "to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States," 16 U.S.C. §475 (Organic Administration Act of 1897). National Forests are also "established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes," 16 U.S.C. §528 (Multiple-Use Sustained-Yield Act of 1960).

Therefore, I find that this license, as conditioned, will not interfere or be inconsistent with the purposes for which the Shasta National Forest was created.

31. FPA section 4(e) further requires that Commission licenses for projects located within federal reservations must include all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation. As stated previously, the project occupies portions of the Shasta National Forest. These lands are administered by the Forest Service.¹⁸

32. The Forest Service filed its final section 4(e) conditions on November 14, 2003. On December 16, 2005, pursuant to section 241 of the 2005 Energy Policy Act,¹⁹ PG&E filed with the Forest Service a request for administrative hearing and, on December 19, 2005, a submittal of alternative conditions, in respect to some of the section 4(e) conditions. In response to those submissions, the Forest Service, on August 30, 2006, filed several revised section 4(e) conditions on which it and PG&E agreed. The Forest Service stated that these conditions should replace the corresponding earlier-filed conditions. On September 1, 2006, PG&E withdrew its hearing request and alternative conditions.

33. The 27 conditions, which are summarized below, are set forth in Appendix B of this order and incorporated into this license by ordering paragraph (E).

34. The first 14 conditions are standard conditions that require PG&E to: (1) obtain prior Forest Service approval of changes after initial construction; (2) consult annually with the Forest Service on affected National Forest resources; (3) maintain its improvements on NFS lands; (4) be subject to valid claims and existing rights; (5) comply with applicable regulations and laws; (6) protect United States property; (7) ensure restoration of the project area upon surrender of license or transfer of ownership; (8) indemnify the United States for damages, claims, and liabilities; (9) be liable for injury, loss, or damage to United States land and property; (10) take responsibility for removing hazardous conditions; (11) obey pesticide restrictions; and (12) allow road use by the U.S. government. Conditions 13 and 14 reserve the Forest Service's right to revise its section 4(e) conditions and to require project changes.

¹⁸ As previously noted, the Shasta National Forest is administered by the Lassen and Shasta-Trinity National Forests. Application at p. A-12; November 14, 2003, Forest Service filing at p. 1.

¹⁹ Pub. L. 109-58, 119 Stat. 674-76.

35. The next five conditions are project-specific conditions that require PG&E to: (15) prepare a biological evaluation before taking actions that may affect Forest Service special status species; (16) notify the Forest Service of the need for emergency erosion or sediment control; (17) follow specifications for reservoir operations, minimum streamflow releases, ramping rates, and freshet flow releases; (18) avoid discretionary out-of-season spill flows; and (19) consult with the Forest Service before anticipated dredging. Condition 17 essentially reflects the provisions of the PRCT agreement as to reservoir operations, minimum streamflows, ramping rates, and freshet flow releases, except that it omits provisions that pertain to the Pit 5 development, which is not on NFS lands. Condition 17 also requires the licensee to file a plan for instream flow measurement. Condition 18 essentially reflects the provisions of the PRCT agreement as to out-of-season spill flows, but only as to the Pit 3 and 4 developments.

36. The last eight conditions require the licensee to develop plans and file them with the Commission. These include plans for: (20) tunnel spoil management, fire management and response, visual management, and signage; (21) gravel and large woody debris management; (22) water quality and temperature monitoring; (23) biological resources management in respect to monitoring fish population trends and conditions, monitoring the foothill yellow-legged frog, monitoring the western pond turtle, interagency management of the bald eagle, monitoring and implementing mitigation measures for Forest Service special status species, and managing vegetation and noxious weeds; (24) cultural resources management; (25) full time patrol of the project for purposes of resource protection; (26) recreation management, covering Lake Britton developed sites, the Pit 3 and 4 reaches, water surface access and management, an information, education, and interpretation plan, streamflow information, and a recreation monitoring and reporting plan; and (27) roads and facilities management. These eight conditions are generally consistent with staff recommendations contained within the EIS, the Water Board's conditions and mitigation measures, and the recommendations of the resource agencies.

SECTION 18 FISHWAY PRESCRIPTION

37. Section 18 of the FPA²⁰ provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. By letter filed October 10, 2002, the Secretary of the Interior requested that the Commission reserve authority to prescribe fishways. Consistent with Commission

²⁰ 16 U.S.C. § 811 (2000).

policy, Article 404 reserves the Commission's authority to require fishways as may be prescribed by Interior for the Pit 3, 4, 5 Project.

THREATENED AND ENDANGERED SPECIES

38. Section 7(a)(2) of the Endangered Species Act (ESA) of 1973²¹ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of their designated critical habitat.

39. Interior and FWS identified four federally listed species that could occur in the project area: the threatened valley elderberry longhorn beetle, bald eagle, and northern spotted owl, and the endangered Shasta crayfish. In its draft EIS, which served as the biological assessment for these species, staff concluded that relicensing the project, with staff's recommended measures, is likely to adversely affect the bald eagle, is not likely to adversely affect the valley elderberry longhorn beetle and northern spotted owl, and would have no effect on the Shasta crayfish. By letter of March 27, 2003, staff notified FWS of these determinations and requested formal consultation on the bald eagle. By letter of April 25, 2003, FWS concurred with staff's determinations on the latter three species and stated that it would begin formal consultation on the bald eagle once it had received necessary additional information.

40. On October 17, 2003, FWS submitted its biological opinion in which it concluded that the proposed action, as modified by staff's recommended measures and the Forest Service's preliminary section 4(e) conditions,²² is not likely to jeopardize the continued existence of the bald eagle. The biological opinion included an incidental take statement, which contained one reasonable and prudent measure: minimize the effects of project impacts on the bald eagle throughout the project area. FWS also included terms and conditions to implement this measure.

41. On July 6, 1999, FWS proposed to delist the bald eagle.²³ No action has yet been taken on this proposal. As FWS acknowledged in its biological opinion, the application,

²¹ 16 U.S.C. § 1536(a)(2).

²² The Forest Service had not yet filed its final or revised final section 4(e) conditions when the biological opinion was issued.

²³ Endangered and Threatened Wildlife and Plants; Proposed Rule To Remove the Bald Eagle in the Lower 48 States From the List of Endangered and Threatened Wildlife, 64 Fed. Reg. 36,454 (July 6, 1999).

staff's recommendations, and the section 4(e) conditions submitted by the Forest Service all contain many measures that would help protect the bald eagle. These measures would remain in the license even if the bald eagle is delisted. However, in the event of delisting, compliance with FWS's terms and conditions would no longer be necessary. Therefore, to ensure that no prohibited taking occurs, the incidental take conditions are included as Appendix C to this license order, but ordering paragraph (F) requires the licensee to comply with them only as long as the bald eagle remains a listed species.

42. Condition 1 provides that the Commission shall implement the proposed action as described in the draft EIS, except as modified by the terms and conditions of Condition 2, which directs the Commission to ensure the licensee's compliance with several measures. Under Condition 2A, the licensee is to begin a revision of the existing Interagency Bald Eagle Management Plan (Bald Eagle Plan)²⁴ in cooperation with FWS and other stakeholders. Under Conditions 2B and 2C, the licensee is to file a water quality monitoring plan and a fire management and response plan, respectively, for Commission approval. Condition 2D specifies that, for future actions the Commission proposes to take under the license or future actions to amend the license, the Commission is to consult with FWS pursuant to section 7 of the ESA. Condition 2E provides that any new owners of project-area lands previously owned by the licensee must agree in writing to abide by the terms and conditions of the biological opinion. Condition 2F provides that all protective measures described in the draft EIS for the northern spotted owl and valley elderberry longhorn beetle be fully implemented and enforced.

43. While some of the incidental take terms and conditions are consistent with staff recommendations, others are problematic. In the EIS, staff agreed that the Bald Eagle Plan should be updated to address recreational enhancements or uses that might be included in the new license.²⁵ In addition, staff supported the development of a fire management and response plan.²⁶ Forest Service 4(e) Condition 23(e) requires the licensee to convene a collaborative team composed of FWS, the Forest Service, Cal Fish and Game, Water Board, and the Tribe to revise and update the Bald Eagle Plan as

²⁴ This plan, issued in 1986, was developed by PG&E, Cal Fish and Game, Interior's Bureau of Land Management, FWS, and the Forest Service. It identifies long-term bald eagle management objectives and provides recommendations and guidelines for land management activities to meet those objectives on public and private lands adjacent to Lake Britton and the Pit River, including lands within the project boundary.

²⁵ EIS at p. 232.

²⁶ *Id.* at p. 334.

needed, and to obtain Commission approval of the plan. Forest Service 4(e) Condition 20(b) requires the licensee to file a Fire Management and Response Plan for Commission approval. Thus, apart from the incidental take conditions, these measures will be conditions of the new license. Staff also agreed that, if proposed changes to the project would have any potential to adversely affect any listed species, including the bald eagle, the Commission would be required to consult with FWS in connection with any license amendment proceeding implementing those changes.²⁷ Because license amendments are new agency actions, separate from the relicensing of a project, this consultation would be required even in the absence of the incidental take condition.

44. The incidental take statement specified implementation of the proposed action as described in the draft EIS, as modified by the incidental take terms and conditions. The draft EIS did not reflect all of the conditions of the PRCT agreement, the water quality certification conditions, and the Forest Service final section 4(e) conditions, all of which were submitted after the draft EIS was issued. However, the new license, as issued with those conditions, will provide no less protection for the bald eagle and related resources than if it had reflected only the draft EIS recommendations. Moreover, FWS, as a signatory to the PRCT agreement, clearly supports issuance of the new license with conditions based on that agreement.

45. The incidental take statement would also impose restrictions on the sale of PG&E-owned land in the project area. In the EIS, staff explained that the Commission lacks authority to impose conditions on licensee-owned land that is removed from or is outside of the project boundary.²⁸ Moreover, the Commission cannot compel non-licensees to abide by the terms and conditions of a biological opinion. Inclusion of this incidental take condition does not grant the Commission authority that has not been given to it by Congress.

46. FWS's water quality monitoring plan condition provides that the plan include sampling of water, sediment, invertebrates, and fish, that it be designed to characterize areas of methylmercury production, as well as mercury into the ecosystem, and that it identify those aspects of project operation and management that may affect methylmercury dynamics in the Lake Britton ecosystem. FWS is concerned that foraging bald eagles could acquire unhealthful levels of mercury, which have bioaccumulated and biomagnified up the aquatic food chain, by consuming fish and fish-eating waterfowl. In rejecting the need for such a plan, staff concluded that the presence of mercury in Lake

²⁷ *Id.* at p. 233.

²⁸ *Id.* at p. 233.

Britton is the result of factors beyond PG&E's control, that the mercury monitoring program would likely be very costly, and that it is unclear what specific action the Commission could require of PG&E based on the monitoring results.²⁹ In comments on the EIS, FWS continued to support the water quality monitoring plan as a means of providing information with which to evaluate whether the bioavailability of methylmercury would increase or decrease as the project is operated under the proposed new license conditions. A water quality monitoring plan without these mercury monitoring provisions was recommended by staff³⁰ and is required by WQC Condition 14 (incorporating mitigation measure 2) and Forest Service 4(e) Condition 22. The licensee may file one water quality monitoring plan to comply with all of these overlapping license requirements.

47. FWS specifies (Condition 2F) that all protective measures described in the draft EIS for the northern spotted owl and valley elderberry longhorn beetle be fully implemented and enforced. I note that FWS concurred with staff's finding of "not likely to adversely affect" for these listed species, so the inclusion of Condition 2F in the biological opinion for the bald eagle is puzzling. Because this incidental take condition does not appear to implement the reasonable and prudent measure of minimizing project impacts on the bald eagle, I will consider it under FPA section 10(a) and discuss it later in this order.

48. Section 7(a)(1) of the ESA also provides that action agencies, in consultation with the Secretary, shall utilize their authorities to further the purposes of the act by carrying out programs for the conservation of listed species. FWS submitted two conservation recommendations: (1) the licensee should assist FWS in the implementation of recovery efforts for the bald eagle; and (2) the licensee should assist FWS in preserving habitat for listed species by ensuring that land in and adjacent to the project area that will be divested from the company revert to public ownership. The ESA does not require action agencies to adopt conservation recommendations.

49. The Commission has authority to require PG&E to protect the bald eagle within the project boundary. The Commission's authority does not extend to all PG&E-owned lands, and the Commission cannot place conditions on PG&E's disposition of its private lands, including lands that may be removed from the project boundary because they no longer serve a project purpose. This license contains significant provisions that should

²⁹ *Id.* at p. 91.

³⁰ *Id.* at p.412.

help the recovery of the bald eagle. Any further recovery efforts on PG&E lands in the project area would be a matter between PG&E and FWS.

NATIONAL HISTORIC PRESERVATION ACT

50. Under Section 106 of the National Historic Preservation Act (NHPA)³¹ and its implementing regulations,³² federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

51. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) with the California State Historic Preservation Officer and invited PG&E, Lassen National Forest, Shasta-Trinity Forest, and Pit River Tribe to concur with the stipulations of the PA. Only PG&E concurred. The PA requires the licensee to prepare and implement a Historic Properties Management Plan (HPMP) for the term of any new license issued for this project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 412 requires the licensee to implement the PA and to file its HPMP with the Commission within one year of license issuance.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

A. Recommendations Pursuant to Section 10(j) of the FPA

52. Section 10(j)(1) of the FPA³³ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act³⁴ to "adequately

³¹ 16 U.S.C. § 470 (2000) et seq.

³² 36 C.F.R. Part 800 (2006).

³³ 16 U.S.C. §803 (j)(1) (2000).

³⁴ 16 U.S.C. §§ 661, et seq. (2000).

and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

53. In response to the August 12, 2002, public notice that the project was ready for environmental analysis, Cal Fish and Game and Interior, on behalf of FWS, filed a total of 32 different recommendations.³⁵ Five of these recommendations were determined to be outside the scope of section 10(j) and are discussed in the next section. This license includes conditions consistent with 26 of the remaining 27 recommendations that are within the scope of 10(j). These include recommendations for: water quality maintenance/monitoring (4(e) Condition 22; WQC Conditions 13, 14(2)); erosion control plan (4(e) Conditions 16, 23(g); WQC Condition 14(4)); minimum flows (4(e) Condition 17-I; WQC Condition 1, 2, 3); operations and maintenance plan (4(e) Condition 17-V; WQC Condition 4); ramping rate plan (4(e) Condition 17-III; WQC Condition 7); pulse/freshet flows (4(e) Condition 17-IV; WQC Condition 5); streamflow and reservoir gaging (4(e) Condition 17-II; WQC Condition 14(1)); fish & invertebrate monitoring (4(e) Condition 23(b); WQC Condition 14(3)); sediment/gravel management (4(e) Condition 21(1); Article 402); develop large woody debris plan (4(e) Condition 21(2); Article 403); inspect/replace/repair fish barrier dam (ordering paragraph (B)), vegetation management plan (4(e) Condition 23(g); WQC Condition 14(5)), riparian vegetation monitoring plan (WQC Condition 14(10)); wildlife resources management plan (4(e) Condition 23(f); Article 405); peregrine falcon eyrie monitoring (4(e) Condition 23(f); Article 405); foothill yellow legged frog monitoring (4(e) Condition 23(f); Article 405); update the Interagency Bald Eagle Management Plan (IBEMP) (4(e) Condition 23(e); ordering paragraph (F)); Biological Compliance Monitoring Plan (BCMP) implementation (4(e) Condition 23(e); WQC Condition 14(3)).

54. If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of the agencies.³⁶ If the Commission still does not adopt a recommendation, it must explain how the recommendation is inconsistent with Part I of the FPA or other applicable law and how the conditions imposed by the Commission

³⁵ Cal Fish and Game filed 11 recommendations on October 7, 2002, and Interior filed 24 recommendations on October 10, 2002. Three of Interior's recommendations were the same as Cal Fish and Game's, for a total of 32 different recommendations.

³⁶ 16 U.S.C. §803(j)(2) (2000).

adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

55. The one remaining unresolved 10(j) recommendation³⁷ is Interior's recommended water quality monitoring plan to ensure that state water quality standards for dissolved oxygen, biological oxygen demand, turbidity, conductivity, and pH would be met in project waters. Staff concluded that, with the exception of occasional dissolved oxygen criteria violations, mainly in the deep waters of Lake Britton, there was no evidence of project-related water quality problems, and that future project operations would be unlikely to influence the temperature of project waters. Instead of Interior's broad monitoring plan, staff recommended a plan that focuses on monitoring water temperature at key locations, with periodic spot dissolved oxygen measurements during the warmest time of year, to confirm that project operations were meeting water quality standards. Staff's recommended plan would also require PG&E to identify potential operational measures that could be implemented in case project operations caused water temperatures to approach maximum acceptable values. Staff also recommended that PG&E address site-specific erosion and sedimentation issues in other plans, in which water quality monitoring also could be included.³⁸

56. Staff estimated that its recommended plan would have an annual cost of \$8,290, or \$23,290 less than the estimated annual cost of Interior's recommended plan, \$31,580. Staff concluded that Interior's recommendation might be inconsistent with the substantial evidence standard of FPA section 313(b) because Interior had provided no evidence that such extensive monitoring of all project waters was necessary, and with the comprehensive planning standard of FPA section 10(a) because the environmental benefit would not be worth the incremental annualized cost over staff's recommended measure.

57. At the section 10(j) meeting, staff and Interior were unable to agree whether elevated levels of nutrients and mercury in project waters were connected to project operations, or to devise alternative measures acceptable to both staff and Interior. Subsequently, in its biological opinion on the bald eagle, Interior provided additional details of its recommended plan, including nutrient and mercury monitoring as well as assessment of the locations of methylmercury production in Lake Britton and tracking mercury loading throughout the ecosystem. Based on those additional details, staff

³⁷ Originally, there were additional inconsistencies (see EIS at p. 461). Those inconsistencies were resolved as a result of the August 28, 2003 section 10(j) meeting and the subsequent execution of the PRCT agreement.

³⁸ EIS at p. 413.

estimated that the annual cost of Interior's recommended water quality monitoring program would be at least \$106,580. Because it could find no basis to attribute nutrients and mercury in Lake Britton to project operations, staff continued to conclude, in the EIS, that the substantial cost of the recommendation would not be worth the environmental benefits.³⁹

58. I adopt staff's conclusion that Interior's recommendation for a comprehensive water quality monitoring plan is not supported by substantial evidence and is inconsistent with the comprehensive planning standard of FPA section 10(a). I also find that staff's recommendation for a water quality monitoring plan is consistent with the section 10(a) standard, because it would institute measures that would adequately protect, mitigate damages to, and enhance fish and wildlife resources affected by the project. Moreover, WQC Condition 14 (incorporating mitigation measure 2) and Forest Service 4(e) Condition 22, which are conditions of the new license, require the water quality monitoring plan recommended by staff. However, because Interior's incidental take terms and conditions also require this more comprehensive water quality monitoring plan, the licensee will have to incorporate the elements of Interior's proposed water quality monitoring plan in the water quality monitoring plan that it files for Commission approval as long as the bald eagle remains a listed species (Ordering paragraph (F)).

B. Recommendations Pursuant to Section 10(a)(1) of the FPA

59. Interior made recommendations that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife resources. Interior recommended development of a fish passage investigation plan for assessing potential restoration of volitional fish passage between the Sacramento and Pit Rivers. This is not a section 10(j) recommendation because it sought a study that could have been conducted prior to licensing. Interior also recommended that the licensee conduct wildlife surveys every five years, that it comply with any terms and conditions required in any biological opinion issued for the project, and that it submit a recreation resource management plan to examine protection and maintenance of recreational activities relating to fish and wildlife resources. I do not consider these recommendations under section 10(j) of the

³⁹ *Id.* at pp. 470-71.

FPA. Instead, I consider these recommendations under the broad-based public-interest standard of FPA section 10(a)(1).⁴⁰

60. Staff did not recommend adopting the recommendation for development of a fish passage investigation plan.⁴¹ Staff recommended adopting the recommendation for wildlife surveys, to the extent that the surveys would focus on special status wildlife.⁴² Staff recommended adopting the recommendation for complying with terms and conditions of the biological opinion, except for the development of a water quality monitoring plan and measures beyond the Commission's authority. Staff recommended adopting a recreation resource management plan, but with the caveat that assessing the effects of recreational activities on fish and wildlife be addressed by other plans that also would be required by the license. I adopt staff's conclusions and will include these Interior recommendations as license conditions to the extent of staff's recommendations. Consequently, the license includes requirements for wildlife surveys (4(e) Condition 23(f), Article 405), a recreation management plan (4(e) Condition 26, WQC Condition 14(12), Article 408), and biological opinion terms and conditions (ordering paragraph (F)). As noted previously, Interior's comprehensive water quality monitoring plan will

⁴⁰ 16 U.S.C. § 803(a)(1) (2000). Section 10(a)(1) requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

⁴¹ The purpose of this recommended study was to assess the potential of bypassing adult anadromous fish in the Sacramento River upstream around the Bureau of Reclamation's Lake Shasta upstream to the Pit River downstream of the Pit 3, 4, 5 Project. As discussed in the EIS (pages 157 – 159), it is not reasonable to require PG&E to evaluate options to remedy problems caused by the actions of downstream entities and that have no nexus to the Pit 3, 4, 5 Project.

⁴² Special status species are those species which are listed, or proposed for listing, as threatened or endangered by the US Fish and Wildlife Service or National Marine Fisheries Service under the Endangered Species Act; any species covered by the Migratory Bird Treaty; any species designated by the US Fish and Wildlife Service or Forest Service as a "candidate" or "listing" species or "sensitive" or similarly-designated species and any species which are listed and protected by State statute in a category implying potential endangerment of extinction.

be required in connection with the incidental take conditions for the bald eagle, as long as the bald eagle continues to be listed.

61. As noted previously, Interior's biological opinion for the bald eagle contained incidental take statement 2F, which states that all protective measures described in the draft EIS for the northern spotted owl and valley elderberry longhorn beetle be fully implemented and enforced. Because this incidental take condition does not appear to implement the reasonable and prudent measure of minimizing project impacts on the bald eagle, I am considering it under FPA section 10(a).

62. In the EIS, staff concluded that the project may affect these species and their associated habitats and recommended protective measures.⁴³ In light of this, and considering that Interior based its "not likely to adversely affect" concurrence on the proposed project, including the draft EIS measures, I am including measures for the protection of these species. Articles 406 and 407 require the licensee to file protection plans for the valley elderberry longhorn beetle and the northern spotted owl, respectively.

OTHER ISSUES

Water Board recommendations

63. As noted in the water quality certification discussion, the Water Board attached 21 "mitigation measures" to the certification as Attachment A, and WQC Condition 14 requires the licensee to comply with 11 of these measures (1 through 10 and 12). As to the remaining 10 mitigation measures, the text of the certification states:

Mitigation measures number 11, and 13 through 21, in Attachment A are within the responsibility and jurisdiction of the FERC and can and should be adopted and included in the FERC license.⁴⁴

These mitigation measures provide for the licensee to develop plans in specific areas: species management and monitoring (mitigation measure 11); road and facilities management (mitigation measure 13); signage (mitigation measure 14); interpretive and

⁴³ EIS at pp. 449.

⁴⁴ See Water Quality Certification for the Pit 3, 4, 5 Hydroelectric Project, FERC No. 233; State of California State Water Resources Control Board; January 24, 2007; page 4.

education (mitigation measure 15); fire management and response (mitigation measure 16); recreation monitoring (mitigation measure 17); visual management (mitigation measure 18); land and habitat management (mitigation measure 19); historic properties management (mitigation measure 20); and project patrol (mitigation measure 21).

64. These mitigation measures are not required by a specific water quality certification condition and the text of the certification treats them as recommendations rather than mandatory conditions; therefore, I consider these recommendations under the broad-based public-interest standard of FPA section 10(a). These measures correspond to staff recommendations in the EIS, in most cases adopting staff's language nearly verbatim.⁴⁵ Consequently, this license order includes requirements for: species management and monitoring (4(e) Condition 23, Article 405, 406, and 407); road and facilities management (4(e) Condition 27, Article 410); signage (4(e) Condition 20(d), Article 411); interpretive and education (4(e) Condition 26, Article 408); fire management and response (4(e) Condition 20(b), Article 411); recreation monitoring (4(e) Condition 26, Article 408); visual management (4(e) Condition 20(c), Article 411); land resources management (4 (e) Condition 20, Article 411); and historic properties management (4(e) Condition 24, Article 412). This license does not, however, require a provision for project patrol, which is a requirement at the Pit 3 and Pit 4 developments (4(e) Condition 25). As discussed below, I do not extend the recommendation for project patrol to cover the Pit 5 development.

Forest Service recommendations

65. In its November 2003 filing, the Forest Service also submitted recommendations under section 10(a) of the FPA. These recommendations include mitigation of resource effects induced by the project construction, operation, or maintenance, where no NFS lands are directly affected. Specifically, these recommendations pertain primarily to the Pit 5 development, which is not located on NFS lands.

66. The Forest Service indicates that several of the recommendations (1, 2, and 9) focus on actions that indirectly affect NFS lands and, together with the section 4(e) conditions, encompass all of the protection, enhancement, and mitigation measures in the PRCT agreement. Thus, recommendation 1 specifies minimum flows, ramping rates, freshet flow releases, and reservoir operations for the Pit 5 reach, as well as a requirement to file an instream flow measurement plan for that development. Recommendation 2

⁴⁵ See EIS at pp. 417-20 and 425-32 (staff recommendations 11-17, 19-21, 24-25, and 27-32).

provides for management of out-of-season spill flows for the Pit 5 development. Recommendation 9 reflects the PRCT agreement provisions for recreation streamflow releases and streamflow information. Recommendations 1 and 2 correspond to the provisions of section 4(e) Conditions 1 and 2, respectively, for the Pit 3 and 4 developments.

67. As noted earlier, Commission staff evaluated the PRCT agreement measures in the EIS, including the three recommendations (1, 2, and 9) noted above, and recommended their adoption in the license. Moreover, all of the PRCT provisions for the Pit 5 development, as well as for the Pit 3 and 4 developments, are conditions of the water quality certification and are thereby incorporated as conditions of the new license (ordering paragraph (D)).

68. The Forest Service also recommends (3 through 8) that the licensee develop and file with the Commission the following plans in respect to the Pit 5 development: gravel management and woody debris; water quality and temperature monitoring; biological resources management; cultural resources management; and project patrol. These recommendations correspond to the plans required by section 4(e) Conditions 21 through 25 for the Pit 3 and 4 developments. The Forest Service also recommends implementation, within specified timeframes, of recreational development measures in the Pit 5 bypassed reach (recommendation 8); this corresponds to the recreational development plan for the Pit 3 and 4 developments required by section 4(e) Condition 26.

69. These Forest Service recommendations (3 through 8) for the Pit 5 development are implemented by other conditions that are being placed in this license. The plans in Forest Service recommendation 3 (gravel management and woody debris plans), are implemented by Articles 402 and 403, respectively, which require the licensee to include provisions for the Pit 5 development in the plans that would be required for the Pit 3 and 4 developments by the Forest Service's section 4(e) Condition 21. Recommendation 4, for a water quality and temperature monitoring plan, is implemented by water quality certification Condition 14(2), which requires a water temperature and water quality monitoring plan that includes provisions for monitoring water temperature in all river reaches. Recommendation 6 for a cultural resources management plan is implemented by Article 412. The recommended recreation management plan (Recommendation 8) is implemented by WQC Condition 14(12) and Article 408, which include provisions for the Pit 5 development.

70. This license does not require PG&E to institute a project patrol at the Pit 5 development, as recommended by the Forest Service (recommendation 7) and Water Board (mitigation measure 21). The Commission does not generally include measures

for law enforcement activities within licenses because it prefers concrete measures with measurable requirements and impacts.⁴⁶ It does not, however, preclude PG&E from voluntarily implementing this measure at the Pit 5 development when implementing Forest Service 4(e) Condition 25 for the Pit 3 and 4 developments.

71. Recommendation 5, for biological resources management plans, has several components and corresponds to the Forest Service's section 4(e) Condition 23 for the Pit 3 and 4 developments. The various plans embraced in that recommendation – a foothill yellow-legged frog monitoring plan, a western pond turtle monitoring plan, a revised Bald Eagle Plan, and a terrestrial wildlife mitigation and monitoring plan – are implemented by Article 405 with additional provisions for all Forest Service sensitive species, including the yellow warbler and willow flycatcher, as recommended in the EIS. Article 405 of this license also includes provisions for including the Pit 5 development in the monitoring plans required by Forest Service 4(e) Condition 23.

72. The vegetation and noxious weed management plan embraced in Forest Service recommendation 5 is addressed by WQC Condition 14(9). To the extent that the mitigation measures do not reflect all of the provisions of recommendation 5 for specifications of the various plans, they would nevertheless allow the Forest Service an opportunity to contribute through consultation to the preparation of the plans, which would apply to all three of the project's developments.

73. The Forest Service also submitted recommendations (10 through 13) for road reconstruction and maintenance, prohibition of grazing on project lands, development of a spoil pile rehabilitation plan to prevent continuation of resource disturbance and ongoing erosion in the Pit 5 reach from the Miners Creek spoil pile, and cooperation with Cal Fish and Game in maintaining a fish barrier dam on Hat Creek just above its confluence with Lake Britton.

74. In recommendation 10, the Forest Service states that its recommended road reconstruction and maintenance measures apply to project roads that are not on and do not affect NFS lands. These include general and specific recommendations relating to the Lake Britton/Hat Creek fish barrier access road, Hagen Flat Road, the Pit 5 powerhouse road, Bush Bar Road, and Upper Lake Britton/Gas Pipeline Loop road. The recommendation addresses non-NFS lands located primarily at the Pit 5 development and corresponds to the Forest Service's section 4(e) Condition 27 for the Pit 3 and 4 developments. Staff agrees with the Forest Service that road planning and improvements

⁴⁶ 116 FERC ¶ 61,270 (2006)

related to project-related roads are necessary; therefore, Article 410 requires a road and facility management plan for the Pit 5 development. As discussed below, the specific project roads that will be addressed in the Pit 5 road and facility management plan will be identified during the project roads inventory required by Article 409.

75. In regards to Forest Service recommendations 11, in the EIS, staff agreed with PG&E and the Forest Service that the practice of grazing on project lands should not be reinstated.⁴⁷ Consequently, this license does not include any provisions of this nature.

76. Regarding Forest Service recommendation 12, WQC Condition 14 (5) provides for development of a spoil pile management plan that is to include proposed remedial measures for the Miners Creek spoil pile and measures to control surface water runoff and protection from high flows in Miners Creek; therefore, this measure is included as a condition of the new license.

77. Finally, provisions for maintaining the Hat Creek fish barrier dam (recommendation 13) are discussed later in this order.

Gravel Augmentation

78. Staff recommended that the licensee develop a gravel augmentation plan to increase trout spawning habitat in the upper portions of the Pit 3, Pit 4, and Pit 5 bypassed reaches, in consultation with the Forest Service, Cal Fish and Game, FWS, and the Water Board.⁴⁸ Forest Service condition 21 requires development of a gravel management plan for the Pit 3 and 4 developments only and does not provide for consultation with any agencies other than itself. Therefore, Article 402 of this license requires the licensee to include in the gravel management plan provisions for gravel augmentation downstream of the Pit 5 dam and to consult with those other agencies.⁴⁹

⁴⁷ *Id.* at p. 322.

⁴⁸ *Id.* at p. 415.

⁴⁹ In the EIS, staff recommended a total combined annual cost cap of \$45,000 for the procurement, delivery, and placement of gravel in all three reaches. Forest Service Condition 21 provides for a maximum cost of \$15,000 per reach for the Pit 3 and 4 reaches. Commission policy does not favor caps on costs for measures that are found necessary to serve project purposes, since the primary consideration is ensuring that the measures are implemented to the extent necessary. While Condition 21 is binding on the Commission, Article 402 will impose no additional cost limitation.

Condition 21 requires the licensee to file the plan with the Commission after Forest Service approval; Article 402 requires Commission approval of the plan as well.

Woody Debris Transport

79. Staff recommended that the licensee develop a woody debris transport plan for placement of woody debris from Lake Britton to the Pit 3 bypassed reach and, if feasible, from the Pit 5 reservoir to the Pit 5 bypassed reach, using operational modifications but no additional structural modifications. Staff recommended that the licensee prepare this plan in consultation with the Forest Service, FWS, and Cal Fish and Game.⁵⁰ Forest Service condition 21 requires only the development of a plan to facilitate the passage of woody debris over the Pit 3 spillway during spill events. Article 403 requires the licensee to include in that plan a feasibility assessment of procedural measures that can be implemented at the Pit 5 dam to transport large woody debris that accumulates at the dam to the Pit 5 bypassed reach. Article 403 also provides that no major structural modifications are to be made at the Pit 5 dam to implement this passage and that the plan is to include specific procedures for implementing woody debris passage at the Pit 5 dam if such passage is determined to be feasible. Article 403 requires consultation with the Forest Service, FWS, and Cal Fish and Game in developing the plan, as well as Commission approval of the plan.

Recreation Management

80. The water quality certification and related mitigation measures and the Forest Service's section 4(e) conditions contain nearly all of the recreational measures that were proposed by PG&E or recommended by staff. However, those conditions do not include the following measures that PG&E proposed and that staff recommended adopting: provisions to ensure public access to the car-top boat launch facility near the gasoline crossing of Lake Britton from the last Saturday in April through December 31, unless clearly defined environmental factors dictate otherwise; measures that would be implemented at the North Ferry Crossing area to control ongoing sanitation and sensitive environmental resource disturbance caused from informal use; and provisions to consult and cooperate with Shasta County regarding the installation of pedestrian warning signs at the Clark Creek Road crossing of the Pit 3 dam. Article 408 of this license requires the licensee to include these measures in the recreation management plan that is to be filed with the Commission in accordance with WQC Condition 13 and Forest Service 4(e) Condition 26.

⁵⁰ EIS at p. 415.

Hat Creek Fish Barrier Dam

81. Cal Fish and Game maintains a fish barrier at Hat Creek, a tributary of the Pit River that flows into the upstream end of Lake Britton. This barrier was constructed in 1969 by Cal Fish and Game as part of its Wild Trout Management Program to prevent non-game fish from migrating into Hat Creek. Cal Fish and Game operates the barrier under an easement granted by PG&E.⁵¹

82. In comments filed October 3, 2002, Cal Fish and Game expressed concern about the structural integrity of the barrier and recommended that PG&E be required to assume responsibility for it. Cal Fish and Game stated that formation of Lake Britton by the construction of the Pit 3 dam caused the fish community in lower Hat Creek to shift from a coldwater fishery to one dominated by non-game species that take advantage of the Lake Britton warmwater habitat.

83. On December 31, 2003, PG&E filed with the Commission an agreement that it had reached with Cal Fish and Game on the operation and maintenance of the Hat Creek fish barrier. Under the agreement, PG&E's responsibilities with regard to maintenance of the fish barrier would be limited to funding for the purchase of necessary materials, conducting archaeological investigations, cultural resource monitoring if maintenance requires any ground-disturbing activities, and implementing required mitigation needed for fish barrier maintenance. PG&E's funding would be capped at 50 percent of the total annual maintenance costs for the fish barrier. If the fish barrier needed to be replaced in the future, PG&E would contribute an amount equal to the replacement costs, including planning and implementation, or \$1 million, whichever is less. PG&E and Cal Fish and Game requested that the fish barrier would not become a licensed project structure. The agreement advocates inclusion of the maintenance and replacement obligations as a license condition, which they state would give more assurance of the licensee's performance than would a memorandum of understanding between PG&E and Cal Fish and Game.

84. Staff concluded that the presence of Lake Britton has fostered the population growth of fish species that, without the barrier, would be able to move into the Hat Creek Wild Trout Management Area and diminish the quality of that recreational fishery. Moreover, reintroduction of these species into Hat Creek in the event of dam failure due to lack of maintenance would be extremely difficult to reverse. Staff concluded that, therefore, it would be appropriate for PG&E to share responsibility with Cal Fish and

⁵¹ *Id.* at p. 155.

Game for maintenance and, if necessary, replacement of the fish barrier.⁵² I have reviewed the agreement and staff's analysis and conclusion and I conclude that because the barrier mitigates a potential adverse effect of the project (i.e., undesirable fish from Lake Britton migrating upstream into the Hat Creek Wild Trout Management Area), it serves project purposes and thus should be a licensed project feature. Maintenance of the dam would be the responsibility of PG&E, as would any other project feature. While this establishes PG&E's sole responsibility for maintenance of the structure, it does not preclude the cost-sharing arrangement contained in the agreement with Cal Fish and Game.

Hat Creek Wild Trout Management Area

85. The Hat Creek fish barrier agreement with Cal Fish and Game also commits PG&E to being an active member of the Hat Creek Technical Advisory Committee that would develop and implement a Hat Creek Wild Trout Area Management Plan. Upon approval of that plan by the committee, PG&E would make funding available for the plan's implementation. PG&E would make available up to a total of \$150,000 during years 1 through 10 of the license, up to a total of \$100,000 during years 11 through 20, and up to a total of \$50,000 during years 21 through 30.

86. Staff could find no nexus between the Hat Creek Wild Trout Management Area measures and project purposes, since, with the fish barrier in place, the waters in the Management Area would not be affected by fish species residing in Lake Britton. Staff noted that Commission policy does not support including as a license condition the funding of unspecified future environmental measures that may not have a nexus to project purposes. For this reason, it did not recommend including the Management Area fish enhancement measures as a condition of the license.⁵³

87. I agree with staff's conclusion. The agreement states that the fish barrier maintenance and replacement requirement, in combination with a requirement for the licensee to cooperate with Cal Fish and Game and others regarding the management of the Hat Creek Wild Trout Area, is an acknowledgement of the project's responsibility for the management of these resources. This rationale does not furnish sufficient support for requiring the licensee to fund future measures under the Management Plan over the term of this license. Therefore, I will not require the licensee to implement those provisions of

⁵² *Id.* at pp. 157 and 443.

⁵³ *Id.* at pp. 443-44.

the agreement. The licensee is free, however, to implement these provisions outside of the license.

Project Boundary – Transmission Lines

88. On April 3, 1998, PG&E applied for a license amendment to delete two transmission lines from the project on the ground that these were no longer primary transmission lines. The lines in question, associated respectively with the Pit No. 3 and Pit No. 5 powerhouses, are the 8.5-mile-long Pit No. 3 230-kilovolt (kV) transmission circuit and the 4.8-mile-long Pit No. 5 230-kV transmission circuit. The Pit No. 3 line occupies approximately 23.12 acres of Forest Service lands, while the Pit No. 5 line is located on PG&E-owned lands.

89. In a December 22, 1998, order the Commission authorized the removal of these transmission lines from the license.⁵⁴ The order was to be effective on the date that PG&E received all necessary permits from the Forest Service for the continued use of its federal lands. On August 4, 2006, the Forest Service granted PG&E an easement for the Pit No. 3 transmission line. PG&E filed this document with the Commission on January 22, 2007. The Commission's December 1998 order was thus effective on August 4, 2006, the date on which PG&E received the necessary permit.

90. The Commission's December 1998 order required PG&E to file, within 60 days of the effective date of the amendment, revised exhibits A, G, J, K, and M showing and describing the facilities as set forth in the amendment application, as well as a statement of the amount of federal land occupied by the project, so that the Commission could amend the appropriate license article regarding payment for use of federal lands. PG&E did not file the revised exhibits or the required statement in connection with the amendment. On December 20, 2006, however, PG&E filed, for Commission approval, a revised exhibit M describing the project's mechanical, electrical, and transmission equipment changes in connection with the rewinding of a generator in the Pit 5 powerhouse.⁵⁵ The description in the revised exhibit excluded the Pit 3 and 5 transmission lines.⁵⁶ On January 22, 2007, PG&E filed Exhibit K drawings, reflecting

⁵⁴ *Pacific Gas and Electric Company*, 85 FERC ¶ 61,411 (1998).

⁵⁵ PG&E originally filed the revised exhibit on July 13, 2006; however, the document contained a typographical error. PG&E corrected and resubmitted the revised exhibit on December 20, 2006.

the changes in project boundary resulting from exclusion of the Pit 3 and Pit 5 transmission lines.

91. Because the Exhibit G drawings filed with the application, and the Exhibit K drawings filed on January 22, 2007, do not meet current Commission standards, Article 204 requires the filing of revised Exhibit G drawings, which shall include the information contained on the Exhibit K drawings reflecting exclusion of the transmission lines.

Project Boundary – Project Facilities and Roads

92. This license requires modifications to the project boundary to include a number of project-related features that are currently not completely within the existing project boundary. The following facilities shall be brought into the project boundary: (1) the lands near the Hat Creek fish barrier dam where recreational improvements will be developed pursuant to the recreation management plan,⁵⁷ if not already encompassed by the existing project boundary; (2) any portion of Dusty Campground not within the existing project boundary; (3) any portion of the Jamo Point boat launch area and the Pines picnic area that are not within the existing project boundary; (4) the portion of the Powder Spur, Delucci Ridge, Rock Creek, Malinda Gulch, and Oak Creek trails, and associated parking areas, from River Road to the water's edge; (5) the area proposed for development into a canyon scenic overlook at spoil pile 4D; (6) the Ruling Creek dispersed camping area (with sufficient land to accommodate associated proposed new enhancements);⁵⁸ (7) the Pit 4 gaging station; (8) the land on which the Pit 5 gaging station lies; (9) the proposed whitewater boater put-in site for the Pit 5 reach at the Trailer dispersed use area, including parking facilities; (10) any portion of the Miners Creek spoil pile not within the existing project boundary; and (11) the proposed whitewater boater take-out site at the Bush Bar site (through extension of the project boundary to the water's edge).

93. Based on staff's analysis in the EIS,⁵⁹ I conclude that these facilities are necessary for project purposes and therefore must be brought within the project boundary.

⁵⁶ In its December 2006 filing, PG&E expressed its understanding that these exhibits would be incorporated into Exhibit A of the new license.

⁵⁷ EIS at pp. 421-5

⁵⁸ EIS at p. 425

⁵⁹ EIS at pp. 31-32, 432-33, and 459.

Article 204 of this license requires revised Exhibit G drawings with a project boundary that encompasses these facilities in their entirety, and a statement of the amount of federal lands occupied by the project.

94. Regarding the inclusions of roads within the project boundary, the Commission's regulations provide for inclusion in the project boundary of "only those lands necessary for operation and maintenance of the project and for other project purposes" ⁶⁰ The Commission's current policy states that roads "necessary" for project operation and maintenance must be restricted to roads used solely for project purposes. ⁶¹ While the EIS describes many of the project roads as necessary for project purposes, that analysis was completed prior to Commission clarification of its policy on roads. Therefore, Article 409 requires the licensee to file an inventory of the roads used solely for project purposes and a schedule for filing any revised Exhibit G drawings.

Tribal Issues

95. On October 30, 2003, the Tribe filed with the Commission a letter commenting on the PRCT agreement and its consensus measures. ⁶² The Tribe indicated that it had participated in the PRCT meetings and agreed with most of the resource goals reached by the PRCT members, but that it was not willing to sign the agreement. The Tribe requested that the Commission include in the license a condition designed to mitigate continuing adverse project impacts on the Tribe, including loss of homelands, means of subsistence, and traditional way of life. The proposed license condition would require the licensee to enter into an agreement with the Commission to investigate, and in good faith to provide, economic opportunities for the Tribe, including: contracting with the Tribe for various aspects of PG&E's operations, maintenance, and development; providing a training and education fund for Tribal members; outlining a schedule for progressive targets of Tribal employment in various areas, such as forest management, fire crew positions, hatchery operations, plant and weed management, and trail maintenance; providing power and water to tribal members to the extent legally feasible; and establishing a native plant nursery to provide plants for restoration projects, a tribal

⁶⁰ 18 C.F.R. § 4.41(h)(2) (2006).

⁶¹ 117 FERC ¶ 61,112 (2006)

⁶² As stated earlier, that agreement was filed with the Commission on October 31, 2003. This letter and the other filings referred to in this section of this order were filed on behalf of the Tribe by California Indian Legal Services.

fishery, and cultural facilities. The Tribe stated that it had begun discussions with PG&E about these concerns.

96. In the EIS, staff declined to recommend inclusion of such a license article. Staff stated that the Commission uses existing project conditions as the environmental baseline for its analysis and that mitigation for past effects is outside of the scope of that analysis. Staff also concluded that there was no relationship between the cost of electricity for Tribal members and this relicensing proceeding.⁶³

97. By letter of November 29, 2005, the Tribe informed the Commission that mitigation negotiations with PG&E were not producing satisfactory results, and it again sought inclusion of the license condition specified above, to “formalize the broad outlines of mitigation measures” and ensure that discussions and material results would continue beyond issuance of the license. The Tribe rejected staff’s EIS response to its previous request for this license condition and emphasized that the Commission has a trust responsibility to the Tribe. In response to the Tribe’s letter, PG&E, by letter of February 14, 2006, informed the Commission that it was continuing to discuss these issues with the Tribe but maintained that mitigation for historical impacts to Tribal culture is outside of the scope of the licensing proceeding.

98. By letter of June 29, 2006, the Tribe again expressed dissatisfaction with the state of its discussions with PG&E and again urged inclusion of a condition in the new license to fulfill the Commission’s trust responsibility to the Tribe. PG&E, by letter filed August 29, 2006, again responded, providing details of its efforts to address such areas as contracting with the Tribe for PG&E operations, maintenance, and development work, identifying the Tribe’s energy needs, and establishment of cultural facilities and tribal fisheries, in addition to finalizing a communications protocol and producing memoranda of understanding with the Tribe.

99. A licensee is not required to mitigate all of a project’s original adverse effects when the project is relicensed. The Commission uses existing conditions as an environmental baseline for analyzing the effects of relicensing a project, although it will also consider a project’s continuing adverse effects. Here, staff thoroughly assessed the environmental effects of the proposed action. This license includes PG&E’s proposed environmental measures, additional staff-recommended measures, and the measures adopted by the PRCT agreement. Overall, these measures include a number of protection and management plans (including the HPMP) that would involve tribal participation to preserve and protect tribally-important aquatic, terrestrial, and cultural resources.

⁶³ EIS at p. 364.

100. While the Commission recognizes the unique relationship between the United States and Indian tribes as defined by treaties, statutes, and judicial decisions, the Commission's responsibilities to Indian tribes are carried out in the context of the FPA and other statutes that govern the Commission's actions.⁶⁴ Staff has taken the Tribe's concerns into account in this proceeding and considered the project's effects on Tribe's rights and interests. Nothing more is required here.⁶⁵

101. Moreover, the measures embraced by the proposed condition would not be appropriate license requirements. Because the Commission holds a licensee responsible for carrying out all project purposes under its license, it would not be appropriate to require a licensee to delegate its maintenance or monitoring responsibilities to particular individuals or entities. Requiring a licensee to provide funds as mitigation for past project effects would be equivalent to assessing damages, which the Commission has determined to be outside of its authority.⁶⁶ While PG&E may wish to provide economic opportunities to the Tribe under private agreement, there is no basis in this proceeding for requiring PG&E to consider and implement this extensive set of measures.

Commission Approvals and Notification

102. The water quality certification conditions and mitigation measures and the Forest Service section 4(e) conditions provide for the development of numerous plans. Not all of those conditions and measures provide for filing the plans for Commission approval. Consistent with Commission policy, Article 401(a) of this license requires that each of the plans be submitted to the Commission for approval before it can be implemented.

103. Condition 12 of the water quality certification and Forest Service section 4(e) Conditions 17 and 18 allow the licensee to temporarily modify project operations due to

⁶⁴ See *Skokomish Indian Tribe v. FERC*, 121 F.3d 1303 (9th Cir. 1997); *Public Utility District No. 1 of Pend Oreille County, Washington*, 117 FERC ¶ 61,205 (2006).

⁶⁵ The Tribe also asserted that inclusion of the condition would be necessary for the Commission to fulfill its responsibilities under the FPA and the alternative licensing process. However, the Tribe does not explain in what way exclusion of the condition would be inconsistent with any provision of the FPA, and this proceeding did not use the alternative licensing process.

⁶⁶ See *City of Tacoma, Washington*, 84 FERC ¶ 61,107 at p. 61,562 (1998).

equipment malfunction, emergency conditions, law enforcement activity, or critical electric system emergency conditions beyond the control of the licensee. To ensure that the Commission is aware of these temporary modifications, Article 401(b) requires that the licensee file a report documenting any deviations to project operations within 10 days of the event.

104. Several water quality certification and section 4(e) conditions contemplate changes to project operations or facilities over the course of the new license as a result of changed circumstances. Because the comprehensive development standard of FPA section 10(a)(1) continues to govern regulation of a project throughout the term of its license,⁶⁷ it is the Commission's responsibility to give prior approval, through appropriate license amendments, for all material changes to the project and its maintenance and operation.⁶⁸ Article 401(c) identifies these conditions and requires Commission approval of these changes before they may be implemented.

ADMINISTRATIVE CONDITIONS

Annual Charges

105. The Commission collects annual charges from licensees for administration of the FPA and for compensation for the use and occupancy of federal lands. Article 201 provides for the collection of funds for administration of the FPA and use and occupancy of U.S. lands.

106. In its relicense application, PG&E states that the project occupies 718.29 acres of non-patented federal lands. Of these, 23.12 acres are occupied by transmission lines that will not be included in the project boundary under the new license, as noted above. According to the application, there should thus be 695.17 acres of federal lands not occupied by transmission lines; however, Commission records indicate that PG&E is currently being charged for 750.35 acres of federal land not occupied by transmission lines and it is necessary to resolve this discrepancy. Additionally, this order requires changes to the project's boundary to include additional federal lands to support

⁶⁷ See, e.g., *S.D. Warren Co.*, 68 FERC ¶ 61,213 at p. 62,022 (1994).

⁶⁸ The Commission's regulations, as well as the terms of the license and basic due process principles, govern what types of alterations require what sorts of submittals or public notice. A license article can not provide for automatic amendment of the license based on future occurrences. Rather, the licensee is free to file with the Commission for an amendment of its license, if future conditions warrant.

recreational opportunities at the project. Therefore, to clarify the amount of federal lands occupied by the project, as licensed, Article 204 requires PG&E to file a statement of the amount of federal land occupied by the project.

Exhibit F and G Drawings

107. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Ordering paragraph C approves the Exhibit F drawings filed on October 19, 2001. Article 204 requires the licensee to file for Commission approval Exhibit F drawings depicting the Hat Creek fish barrier dam. Because the Exhibit G drawings filed with the application do not conform to Commission regulations and because this order results in changes to the project boundary, Article 204 also requires PG&E to file revised exhibit G drawings for Commission approval.

Amortization Reserve

108. The Commission requires that, for new major licenses, licensees must set up and maintain an amortization reserve account upon license issuance. Article 205 requires the establishment of the account.

Headwater Benefits

109. Some projects directly benefit from headwater improvements that were constructed by other licensees, by the United States, or by permittees. Article 206 requires PG&E to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

Use and Occupancy of Project Lands and Waters

110. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 413 allows PG&E to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

As-built drawings

111. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised drawings of project features as built. Article 301 provides for the filing of these drawings. This license also includes Articles 302 and 303 that require filing of plans and specifications and cofferdam construction

drawings, respectively, with the Commission's Division of Dam Safety and Inspections, for any necessary construction activities.

STATE AND FEDERAL COMPREHENSIVE PLANS

112. Section 10(a)(2) of the FPA⁶⁹ requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Under section 10(a)(2)(A), federal and state agencies filed 52 comprehensive plans that address various resources in California. Staff identified and reviewed 16 plans relevant to the project.⁷⁰ No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

113. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,⁷¹ Commission staff evaluated PG&E's record as a licensee for these areas: (1) conservation efforts; (2) compliance history and ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission services; (7) cost-effectiveness of plans; and (8) actions affecting the public. I accept the staff's findings in each of the areas.

Conservation Efforts

114. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily engaged in the generation or sale of electric power, like PG&E. PG&E has programs to promote cost-effective conservation and load management for residential, commercial, industrial, and agricultural customers. Through these programs, PG&E is making satisfactory efforts to conserve electricity and reduce peak hour demands. Staff concludes that PG&E is making reasonable efforts to conserve electricity and has made a satisfactory good faith effort to comply with section 10(a)(2)(C) of the FPA.

⁶⁹ 16 U.S.C. § 803(a)(2)(A) (2000).

⁷⁰ The list of applicable plans can be found in section 5.5 of the EIS.

⁷¹ 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2000).

Compliance History and Ability to Comply with the New License

115. Based on a review of PG&E's compliance with the terms and conditions of the existing license, staff finds that PG&E's overall record of making timely filings and compliance with its license is satisfactory and that PG&E can satisfy the conditions of a new license.

Safe Management, Operation, and Maintenance of the Project

116. Staff has reviewed PG&E's management, operation, and maintenance of the Pit 3, 4, 5 Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic independent Consultant's Safety Inspection Reports. Staff concludes that the dams and other project works are safe, and that there is no reason to believe that PG&E cannot continue to safely manage, operate, and maintain these facilities under a new license.

Ability to Provide Efficient and Reliable Service

117. Staff has reviewed PG&E's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Our review indicates that PG&E regularly inspects the project turbine generator units to ensure they continue to perform in an optimal manner, schedules maintenance to minimize effects on energy production, and since the project has been in operation, has undertaken several initiatives to ensure the project is able to operate reliably into the future. Staff concludes that PG&E is capable of operating the project to provide efficient and reliable electric service in the future.

Need for Power

118. To see how the demand for electricity is expected to change in the future in the region, staff looked at the regional need for power as reported by the North American Electric Reliability Council (NERC) for its Western Systems Coordinating Council (WSCC) region (NERC, 2006). The Pit 3, 4, 5 Project is located in the California-Mexico Power (CMP) area of the WSCC region. The CMP area encompasses most of California and a portion of Baja California in Mexico. The CMP area has a significant summer peak demand.

119. For the period from 2005 through 2014, WECC forecasts peak demand and annual energy requirements in the area to grow at annual compound rates of 2.4 and 2.6 percent, respectively. Severe weather conditions in 1998 and 2000 affected the area, resulting in numerous curtailments of service to interruptible customers. Even with assumptions about future generation and transmission extension projects, short-term

statewide and local reliability problems exist. Resource capacity margins for the California-Mexico Power area range between 13.2 and 14.8 percent of firm peak summer demand for the next 10 years, including allowances for projected new capacity. Winter reserves are expected to fall from 31.3 percent in 2005 to 2006 to 15.1 in 2014 to 2015. Available reserves in the California-Mexico Power area are projected to decrease below generally accepted values of 15 to 18 percent. The capacity from this existing project would continue to help meet the power needs of the region.

120. Power from the Pit 3, 4, 5 Project can continue to meet PG&E's customers' growing needs, as well as meeting part of the regional need for power. The project displaces fossil-fueled electric power generation that the regional utilities currently use and thereby reduces the emission of noxious by-products caused during the combustion of fossil fuels.

Transmission Services

121. The project includes 6.7 miles of 230-kV circuit transmission line (the Pit 4 transmission line), that extends from the switch and bus structure at the powerhouse to a junction with PG&E's interconnected transmission system. This three-phase circuit consists of steel-reinforced aluminum conductor supported on towers. PG&E is proposing no changes that would affect its own or other transmission services in the region. The project and project transmission line are important elements in providing power and voltage control to local Shasta County communities and the region.

Cost Effectiveness of Measures

122. PG&E proposes a number of measures to enhance environmental resources affected by the project. Based on the PG&E's record as an existing licensee, staff concludes that these measures are likely to be carried out in a cost-effective manner.

Actions Affecting the Public

123. PG&E provided extensive opportunity for public involvement in the development of its application for a new license for the Pit 3, 4, 5 Project. During the previous license period, PG&E provided facilities to enhance the public use of project lands and facilities and operated the project with consideration for the protection of resources along the Pit River. PG&E uses the project to help meet local power needs and pays taxes that help cover the cost of public services provided by the local government. In addition, the project provides employment opportunities.

PROJECT ECONOMICS

124. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,⁷² the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

125. In applying this analysis to the Pit 3, 4 and 5 Project, I have considered two options: PG&E's proposal, including the PRCT agreement and the project as licensed herein. As proposed by PG&E, the levelized annual cost of operating the Pit 3, 4 and 5 Project is about \$15,655,000 or \$8.89/MWh. The proposed project would generate an estimated average of 1,761,192 MWh of energy annually. When we multiply our estimate of average generation by the alternative power cost of \$68.04/MWh,⁷³ we get a total value of the project's power of \$119,830,000 in 2006 dollars. To determine whether the proposed project is currently economically beneficial, staff subtracts the project's cost from the value of the project's power.⁷⁴ Therefore, in the first year of operation, the project would cost \$104,175,000 (\$59.15/MWh) less than the likely alternative cost of power.

126. As licensed herein, with the mandatory conditions and staff measures, the levelized annual cost of operating the project would be about \$16,047,000, or \$9.11/MWh. Based on an estimated average of 1,761,192 MWh as licensed, the project would produce power valued at \$119,830,000 when multiplied by the \$68.04/MWh value of the project's power. Therefore, in the first year of the new license, project power would cost \$103,783,000 (\$58.93/MWh) less than the likely cost of alternative power.

⁷² 72 FERC ¶ 61,027 (1995).

⁷³ The alternative power cost of \$68.04 per MWh is based on the 2006 Dow Jones North Path 15 electricity market values and our estimated value for dependable capacity.

⁷⁴ Details of staff's economic analysis for the project as licensed herein and for various alternatives are included in the final EIS issued June 2004.

COMPREHENSIVE DEVELOPMENT

127. Sections 4(e) and 10(a)(1) of the FPA⁷⁵ require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

128. The EIS for the project contains background information, analysis of effects, and support for related license articles. The project will be safe if operated and maintained in accordance with the requirements of this license.

129. Based on my independent review and evaluation of the Pit 3, 4, 5 Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EIS, I have selected the proposed Pit 3, 4, 5 Project, with the mandatory conditions and staff-recommended measures, and find that it is best adapted to a comprehensive plan for improving or developing the Pit River Basin.

130. I selected this alternative because: (1) issuance of a new license will serve to maintain a beneficial and dependable source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational resources and historic properties; and (3) the 317.25-MW of electric energy generated from renewable resource will continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

LICENSE TERM

131. Section 15(e) of the FPA⁷⁶ provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a

⁷⁵ 16 U.S.C. §§ 797(e) and 803(a)(1) (2000).

⁷⁶ 16 U.S.C. § 808(e) (2000).

moderate amount of such activities; and 50-year terms for projects with extensive measures.⁷⁷

132. This license requires a moderate amount of mitigation and enhancement measures including: flow regimes and lake levels for project developments, channel stabilization, fish protective measures, wildlife and sensitive plant protective measures, noxious weed control, recreational enhancements, visual resource protection, and road and trail access. Consequently, a license term of 40 years for the Pit 3, 4, 5 Project would be appropriate.

133. It is the Commission's policy to coordinate to a reasonable extent the license expiration dates of projects in a river basin, in order that subsequent relicensing proceedings can also be coordinated.⁷⁸ There are three other licensed projects in the Pit River Basin, with the following license expiration dates: (1) Pit 1 Project No. 2687, expiring February 28, 2043; (2) Hat Creek Project No. 2661, expiring October 31, 2032; and McCloud-Pit Project No. 2106, expiring July 31, 2011. I can not coordinate this license term with that for the Hat Creek project or the McCloud-Pit, because I can not issue licenses with terms less than 30 years. However, I can coordinate the expiration date of this project with that of the Pit 1 Project, through the issuance of a 36-year license.

The Director orders:

(A) This license is issued to Pacific Gas and Electric Company (licensee) for a period of 36 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Pit 3, 4, 5 Hydroelectric Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, described in the project description and the project boundary discussion of this order.

⁷⁷ See *Consumers Power Company*, 68 FERC ¶ 61,383-84 (1994).

⁷⁸ In issuing new and subsequent licenses, the Commission will coordinate the expiration dates of licenses to the maximum extent possible, to maximize future consideration of cumulative impacts at the same time in contemporaneous proceedings at relicensing. See 18 C.F.R. § 2.23 (2006).

(2) Project works consisting of three hydraulically-connected developments, with a total of four dams, four reservoirs, three powerhouses, associated tunnels, surge chambers, and penstocks. The powerhouses contain nine generating units with a combined authorized installed capacity of 312.330 MW.

The Pit 3 development consists of: 1) the 1,293-acre Lake Britton, with a gross storage capacity of 41,877 acre feet; 2) the Pit 3 Dam, with a crest length of 494 feet and a maximum height of 130 feet; 3) a concrete tunnel in two sections, 19 feet in diameter with a total length of about 21,000 feet; 4) a surge tank; 5) three penstocks about 10 feet in diameter and 600 feet in length; 6) a 47-foot by 194-foot reinforced concrete multilevel powerhouse; 7) three generating units, driven by three vertical Francis turbines, with a combined normal operating capacity of 70 MW; 8) a fish barrier dam located on Hat Creek; and 9) appurtenant facilities.

The Pit 4 development consists of: 1) the 105-acre Pit 4 Reservoir, with a gross storage capacity of 1,970 acre feet; 2) the Pit 4 Dam, consisting of a gravity type overflow section 203 feet in length with a maximum height of 108 feet and a slab-and buttress type section 212 feet in length with a maximum height of 78 feet; 3) a 19-foot-diameter pressure tunnel with a total length of about 21,500 feet; 4) a surge chamber; 5) two 12-foot-diameter penstocks about 800 feet in length; 6) a four-level 58-foot by 155-foot reinforced concrete powerhouse; 7) two generating units, driven by two vertical Francis turbines, with a combined normal operating capacity of 95 MW; 8) the 6.7-mile-long 230-kV Pit 4 transmission line; and 9) appurtenant facilities.

The Pit 5 development consists of: 1) the 32-acre Pit 5 Reservoir, with a gross storage capacity of 314 acre feet; 2) the Pit 5 Dam, with a concrete gravity overflow structure 340 feet in length and a maximum height of 67 feet; 3) the 19-foot-diameter Tunnel No. 1; 4) the 48-acre Pit 5 Tunnel Reservoir, with a gross storage capacity of 1,044 acre feet; 5) the Pit 5 Tunnel Reservoir Dam, approximately 3,100 feet long and 66 feet high; 6) the 19-foot-diameter Pit 5 Tunnel No. 2; 7) a surge chamber; 8) four steel penstocks about 8 feet in diameter and 1,400 feet in length; 9) a 56-foot by 266.5-foot reinforced concrete multilevel powerhouse; 10) four generating units, driven by four vertical Francis turbines, with a combined normal operating capacity of 160 MW; and 11) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: The following pages of Exhibit A, filed on October 19, 2001: Pages A-1 to A-7 and Pages A-12 to A-14. The five page General Description and General

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Specifications of Mechanical, Electrical, and Transmission Equipment filed on December 20, 2006.

Exhibit F: The following sections of Exhibit F filed on October 19, 2001:

<u>Drawing</u>	<u>FERC No.</u>	<u>Showing</u>
F-1	233-1017	Plan & Elevation of Pit #3 Dam
F-2	233-1018	Section Through Pit #3 Dam Outlet
F-3	233-1019	Plan & Section of Pit # 3 Intake
F-4	233-1020	Elevations & Sections of Rock Creek Pit #3 Tunnel Crossing
F-5	233-1021	Plan of Pit #3 Surge Chamber & Penstocks
F-6	233-1022	Section Through Pit #3 Surge Chamber
F-7	233-1023	Profile of Pit #3 Penstocks
F-8	233-1024	General Arrangement Outdoors & Plan of Pit #3 Powerhouse
F-9	233-1025	Longitudinal Section of Pit #3 Powerhouse
F-10	233-1026	Transverse section of Pit #3 Powerhouse
F-11	233-1027	Sections of Pit #4 Dam & Intake
F-12	233-1028	Section Through Pit #4 Spillway & Outlet
F-13	233-1029	Plan & Sections of Pit #4 Penstocks, Surge Chamber & Tunnels
F-14	233-1030	Profile of Pit #4 Penstocks
F-15	233-1031	General Arrangement Outdoors of Pit #4 Powerhouse
F-16	233-1032	Longitudinal & Transverse Sections of Pit #4 Powerhouse
F-17	233-1033	Floor Plans of Pit #4 Powerhouse
F-18	233-1034	Plan & Elevations of Pit #5 Diversion Dam & Intake Structure
F-19	233-1035	Sections of Pit #5 Diversion Dam and Intake Structure
F-20	233-1036	Plan & Elevation of Pit #5 Open Conduit Dam Spillway
F-21	233-1037	Sections Through Pit #5 Open Conduit Dam
F-22	233-1038	Plans and Sections of Pit #5 Open Conduit Intake & Tunnel
F-23	233-1039	Plan & Section of Pit #5 Open Conduit Dam Spillway
F-24	233-1040	Plan & Sections of Pit #5 Surge Chamber & Tunnel

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F-25	233-1041	Profile of Pit #5 Penstocks
F-26	233-1042	General Arrangement Outdoors of Pit #5 Powerhouse
F-27	233-1043	Longitudinal & Transverse Sections of Pit #5
F-28	233-1044	Floor Plans of Pit #5 Powerhouse

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian and other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibit F drawings described above are approved and made part of this license. The Exhibit G drawings filed as part of the application for license do not conform to Commission regulations and are not approved.

(D) This license is subject to the conditions of the water quality certification issued by the California Water Resources Control Board under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), as those conditions are set forth in Appendix A to this order.

(E) This license is subject to the conditions submitted by the U.S. Forest Service under section 4(e) of the FPA, as those conditions are set forth in Appendix B to this order.

(F) This license is subject to the terms and conditions of the incidental take statement submitted by the U.S. Department of Interior - Fish and Wildlife Service, as those terms and conditions are set forth in Appendix C to this order, for as long as the bald eagle remains a listed species under the Endangered Species Act.

(G) This license is also subject to the articles set forth in Form L-1 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Lands of the United States" (*see* 54 FPC 1799 *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States annual charges, effective as of the first day of the month in which the license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purpose of:

(a) reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 312.330 megawatts (MW).

(b) recompensing the United States for the use, occupancy, and enjoyment of its lands, the amount to be determined pursuant to Articles 203 and 204.

Article 202. Exhibit Drawings. Within 45 days of the date of issuance of the license, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-233-1001 through P-233-####) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, F-2, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections - San Francisco Regional Office.

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections - San Francisco Regional Office. Exhibit F drawings must be identified as (CEII) material under 18 CFR §388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Drawing Number, FERC Exhibit, Drawing Title, date of this license and file extension in the following format [P-233-####, F-1, Project Works, 01-10-2006.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
 FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
 RESOLUTION – 300 dpi desired (200 dpi min)
 DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)
 FILE SIZE – less than 1 MB desired

Article 203. Exhibit A. Within 45 days of the date of issuance of the license, the licensee shall file with the Commission Exhibit A that incorporates the project features described in the Exhibit A filed on October 19, 2001, as modified by the revised exhibit M, filed December 20, 2006.

Article 204. Exhibit F and G Drawings. Within 90 days of the date of issuance of the license, the licensee shall file, for Commission approval, Exhibit F drawing(s) depicting the Hat Creek fish barrier dam, and revised Exhibit G drawings enclosing within the project boundary all project works necessary for operation and maintenance of the project. The drawings must comply with sections 4.39 and 4.41 of the Commission's regulations. In addition, the Exhibit G drawings shall include the following:

- a) All land associated with Dusty Campground.
- b) The Pit 4 gaging station (United States Geological Survey [USGS] gage no.11362500).
- c) The land on which the Pit 5 gaging station (USGS gage no. 11363000) lies.
- d) All land associated with the Miners Creek spoil pile.
- e) The proposed whitewater boater take-out site at the Bush Bar site.
- f) The proposed whitewater boater put-in site at the Trailer dispersed use area, including parking facilities.
- g) The Ruling Creek dispersed camping area and all lands necessary to accommodate the proposed enhancements.
- h) All lands necessary for development of the proposed canyon scenic overlook at spoil pile 4D.
- i) The portions of the Powder Spur, Delucci Ridge, Rock Creek, Malinda Gulch, and Oak Creek trails, and associated parking areas, that lead from River Road to the water's edge.
- j) All lands associated with the Jamo Point boat launch area and the Pines picnic area.
- k) All lands necessary for recreational improvements at the Hat Creek fish barrier dam.

The Exhibit G drawings shall exclude the 8.5-mile-long Pit No. 3 230-kilovolt (kV) transmission circuit and the 4.8-mile-long Pit No. 5 230-kV transmission circuit transmission lines, because the lines are no longer considered primary lines.

The Exhibit G filing also shall include a statement of the amount of federal land occupied by the project, consistent with the amount of federal lands identified on the Exhibit G drawings.

Article 205. Amortization Reserve. Pursuant to section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly included in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 206. Headwater Benefits. If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits

received during the term of this new license. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 301. *As-built Drawings.* Within 90 days of completion of construction of the facilities authorized by this license, the licensee shall file, for Commission approval, revised exhibits A, F, and G to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI) - San Francisco Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

Article 302. *Contract Plans and Specifications.* At least 60 days prior to start of construction, the licensee shall submit one copy of its plans and specifications design document to the Commission's Division of Dam Safety and Inspection (D2SI) – San Francisco Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal also must include as part of preconstruction requirements: a Quality Control and Inspection Program, a Temporary Construction Emergency Action Plan, and a Soil and Erosion Control Plan. The licensee may not begin construction until the D2SI – San Francisco Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. *Cofferdam Construction Drawings.* Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of the cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) – San Francisco Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI), of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 401. *Commission Approval, Notifications, and Filing of Amendments.*

(a) Requirement to File Plans and Reports for Commission Approval

Various conditions of this license found in the California State Water Resources Control Board's (Water Board's) Water Quality Certification (WQC) (Appendix A) and in the U.S. Department of Agriculture, Forest Service's (Forest Service's) final section 4(e) conditions (Appendix B) require the licensee to prepare plans and reports in consultation with other entities for approval by the Water Board or the Forest Service and to implement specific measures without prior Commission approval. Each such plan and

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report also shall be submitted to the Commission for approval. These plans are listed below.

Water Quality Certification Condition	Final Section 4(e) Condition	Description	Due Date From License Issuance
5	17 (IV)	Freshet flow release modifications	As needed
6	18	Development of plans to address any out-of-season spill flows	1 year
11		Interim stream flow and facility modification plan	3 months
14, mitigation measure 1	--	Stream flow and reservoir level monitoring plan	1 year
14, mitigation measure 3	--	Fish and invertebrate monitoring plan	6 months
14, mitigation measure 4	--	Erosion and sedimentation control plan	1 year
14, mitigation measure 5	--	Spoil pile management plan	1 year
14, mitigation measure 6	19	Forebay or reservoir dredging plan, if needed	90 days prior to any anticipated dredging
14, mitigation measure 7	--	Biological monitoring and adaptive management plan	1 year
14, mitigation measure 8	--	Recreation stream flow release plan	6 months
14, mitigation measure 10	--	Riparian vegetation monitoring plan	1 year
14, mitigation measure 12	--	Recreation management plan	1 year

The licensee shall submit to the Commission documentation of its consultation, copies of comments and recommendations made in connection with each plan, and a description of how each plan accommodates the comments and recommendations. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to make changes to any plan submitted. Upon Commission approval each plan becomes a requirement of the

license, and the licensee shall implement the plan or changes in project operations or facilities, including any changes required by the Commission.

(b) Requirement to Notify Commission of Planned and Unplanned Deviations from License Requirements

Two WQC Conditions in Appendix A and four Forest Service final section 4(e) conditions in Appendix B allow the licensee to temporarily modify operations and license requirements under certain conditions. The Commission shall be notified prior to implementing such modifications, if possible, or in the event of an emergency, as soon as possible, but no later than 10 days after each such incident. These requirements are listed below.

Water Quality Certification Condition	Final Section 4(e) Condition	License requirement
--	18	Written notification prior to any planned or scheduled maintenance outages that affect the Pit 3 and 4 bypassed reaches
6	18	Notification of out-of-season spills
12	17	Notification of temporary flow modifications
	16	Notification of need for emergency site stabilization

(c) Requirement to File Amendment Applications.

Certain WQC Conditions and Forest Service section 4(e) conditions contemplate unspecified long-term changes to project operations or facilities for the purpose of mitigating for currently unknown environmental effects. These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. These conditions are listed below.

Water Quality Certification Condition	Final Section 4(e) Condition	Modification
8	--	Notification that recreation flow releases during the initial 3 year period are having adverse effects on the environment and should be stopped prematurely.

Water Quality Certification Condition	Final Section 4(e) Condition	Modification
15	--	Any change to the project, including operation, that would have a significant or material effect on the findings, conclusions, or conditions of the WQC

Article 402. Gravel Management Plan. The licensee shall include in the gravel management plan that will be filed with the Commission for approval pursuant to the U.S. Department of Agriculture, Forest Service (Forest Service) section 4(e) condition 21.1 (Appendix B), provisions for gravel augmentation downstream of the Pit 5 dam, in addition to downstream of the Pit 3 and Pit 4 dams.

The gravel management plan shall be developed in consultation with the Forest Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, and California State Water Resources Control Board. The licensee shall include with the gravel management plan that it files with the Commission, documentation of agency consultation, copies of comments and recommendations made in connection with the plan, and a description of how the plan accommodates the comments and recommendations. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 403. Large Woody Debris Management Plan. The licensee shall include in the large woody debris management plan that will be filed with the Commission for approval pursuant to the U.S. Department of Agriculture, Forest Service (Forest Service) section 4(e) condition 21.2 (Appendix B), a feasibility assessment of procedural measures that can be implemented at the Pit 5 dam to transport large woody debris that accumulates at the dam to the Pit 5 bypassed reach. No major structural modifications shall be required at the Pit 5 dam to implement downstream passage of large woody debris. If determined to be feasible, the plan shall include the specific procedures proposed for implementation at the Pit 5 dam. If determined not to be feasible, the plan

shall provide specific reasons why such procedures cannot be implemented at the Pit 5 dam using site-specific information.

The large woody debris management plan shall be developed in consultation with the Forest Service, U.S. Department of Interior - Fish and Wildlife Service, and California Department of Fish and Game. The licensee shall include with the large woody debris management plan that it files with the Commission, documentation of agency consultation, copies of comments and recommendations made in connection with the plan, and a description of how the plan accommodates the comments and recommendations. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. Reservation of Authority to Prescribe Fishways. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways, as may be prescribed by the Secretary of the Interior, pursuant to Section 18 of the Federal Power Act.

Article 405. Biological Resources Management and Mitigation Plan. U.S. Department of Agriculture -Forest Service (Forest Service) 4(e) Condition 23 (Appendix B) requires the licensee to file a biological resource management and mitigation plan. The terrestrial wildlife mitigation and monitoring component of the plan shall be prepared to address all project-affected Forest Service special status species, including yellow warbler and willow flycatcher. In addition to addressing National Forest System lands in the Pit 3 and Pit 4 project reaches, the plan and all components shall be prepared to include all Pit 3, 4, 5 Project lands within the project boundary, including the Pit 5 bypassed reach and tailrace, as appropriate.

The licensee shall prepare the plan and all components after consultation with the Forest Service, California Department of Fish and Game, California State Water Resources Control Board, U.S. Department of the Interior – Fish and Wildlife Service, National Park Service, California Department of Parks and Recreation, and the Pit River Tribe. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and

provided to the agencies and the Tribe, and specific descriptions of how the agencies' and the Tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the Tribe to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan.

Article 406. Valley Elderberry Longhorn Beetle Protection Plan. Within one year of the date of issuance of the license, the licensee shall file with the Commission for approval, a valley elderberry longhorn beetle protection plan. The plan shall be consistent with the 1999 guidelines of the U.S. Department of Interior - Fish and Wildlife Service (FWS) to protect the valley elderberry longhorn beetle and its habitat, including elderberry plants with stems 1 inch or greater in diameter at ground level. The plan may be incorporated into the biological resources management plan required by U.S. Department of Agriculture, Forest Service (Forest Service) 4(e) Condition 23 and Article 405.

The plan shall be prepared after consultation with the FWS, Forest Service, the California State Water Resources Control Board, and California Department of Fish and Game. Consistent with FWS guidelines, the plan shall include, at a minimum, provisions for: (1) evaluating future actions, including maintenance, construction, or other ground-disturbing activities that may affect elderberry shrubs to determine if surveys are necessary; (2) complete avoidance of any shrubs, including protection of a minimum 100-foot buffer around elderberry plants containing stems measuring 1.0 inch or more in diameter at ground level; (3) a program to train and educate maintenance crews; and (4) a schedule for implementing the plan.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the plan accommodates the comments of the agencies. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing activities shall begin until the Commission notifies the licensee that the plan is

approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 407. Northern Spotted Owl Protection Plan. Within one year of the date of issuance of the license, the licensee shall file with the Commission for approval, a northern spotted owl protection plan. The plan may be incorporated into the biological resources management plan required by U.S. Department of Agriculture, Forest Service (Forest Service) 4(e) Condition 23 and Article 405.

The plan shall include, at a minimum: (1) provisions for identifying and mapping suitable habitat and known locations; (2) the process to be used to determine if field surveys and possible protective measures are needed; (3) identification of the buffer zone around the potential activity that would be subject to survey; and (4) a schedule for implementing the plan. Mapping and survey information shall focus on areas within at least 0.25 miles of sites where potential disturbance of owls is a concern.

The plan shall be prepared after consultation with the U.S. Fish and Wildlife Service, Forest Service, the California State Water Resources Control Board, and California Department of Fish and Game. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the plan accommodates the comments of the agencies. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing activities shall begin until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 408. Recreation Management Plan. The licensee shall include in the recreation management plan to be filed with the Commission for approval, pursuant to California State Water Resources Control Board's (Water Board's) Water Quality Certification Condition 14(12) (Appendix A) and the U.S. Department of Agriculture, Forest Service (Forest Service) section 4(e) Condition 26 (Appendix B), the following: (1) provisions to ensure public access to the car-top boat launch facility near the gasline crossing of Lake Britton from the last Saturday in April through December 31, unless clearly defined environmental factors dictate otherwise; (2) measures that would be implemented at the North Ferry Crossing area to control ongoing sanitation and sensitive

environmental resource disturbance caused from informal use; (3) provisions to consult and cooperate with Shasta County regarding the installation of pedestrian warning signs at the Clark Creek Road crossing of the Pit 3 dam; and (4) provisions for the inclusion of resource management actions planned and under way, development of maps (indicating roads, parking areas, developments, and trails), public safety information (such as safe boating and angling practices), specific measures that would be used to provide interpretive materials (i.e., brochures and location of signage, as appropriate) within the information, education, and interpretation plan component of the recreation management plan. In addition to addressing National Forest System lands in the Pit 3 and Pit 4 project reaches, the recreation monitoring and reporting plan required pursuant to Forest Service 4(e) Condition 26 also shall include all Pit 3, 4, 5 project lands within the project boundary.

The licensee shall prepare the plan after consultation with the Water Board, the Forest Service, U.S. Department of Interior – Fish and Wildlife Service, National Park Service, California Department of Parks and Recreation, California Department of Fish and Game, and the Pit River Tribe. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and the Tribe, and specific descriptions of how the agencies' and the Tribes' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the Tribe to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 409. Project Roads Inventory. Within 90 days of the date of issuance of the license, the licensee shall file with the Commission for approval an inventory of all project roads necessary for project purposes. The inventory shall include all roads deemed necessary for project access and used solely for project purposes. The inventory must include a map of the designated road segments, a description of each road segment's project purpose, and a schedule for filing any necessary revisions to Exhibit G drawings.

Article 410. Road and Facility Management Plan. U.S. Department of Agriculture, Forest Service (Forest Service) 4(e) Condition 27 (Appendix B) requires the licensee to file a road and facilities management plan for the Pit 3 and Pit 4

developments. In addition to the measure set forth in Forest Service 4(e) Condition 27, within 1 year of the date of issuance of the license, the licensee shall also incorporate, at a minimum, the following components to address project roads, as designated in the project roads inventory (Article 409) at the Pit 5 development:

- (1) Provisions to restrict vehicular access to designated roadways and prohibit off road activities within the project area including: (1) grading and adding red cinder to limit rutting and muddiness; (2) revegetating and bouldering Off-Road Recreational Vehicle (ORV) created roads; (3) consultation to determine which roads should be closed; and (4) development of an ORV management plan to protect sensitive cultural and terrestrial resources that includes: (a) identification of damaged areas; (b) identification of rehabilitation needs for damaged areas; (c) time frames for seasonal road closures; (d) restrictions to protect bald eagles, cultural resources, and sensitive habitats; and (e) measures to address access roads near the Hat Creek fish barrier dam to assess the need for vehicular access roads and ways to balance public access with protection of sensitive areas. Development of the ORV management plan would be coordinated with the implementation of the Historic Properties Management Plan (Forest Service 4(e) Condition 24; Article 412);
- (2) Establishment of designated areas for disposal of rock and soil from road management and a description of the types of materials allowed to be disposed of in the designated areas and how organic materials would be treated;
- (3) Specification of applicable limited operating periods for road rehabilitation and maintenance that would protect sensitive species of wildlife;
- (4) Measures to address existing road and parking area rehabilitation needs to bring existing project roads up to current public safety levels;
- (5) Provisions to evaluate and implement measures for dust control on project roads where dust has been identified as a problem;
- (6) Measures to monitor future use and condition of the project area road segments and parking areas, including traffic-use surveys every six years, beginning six years after license issuance, at designated sites, time frames, and frequencies; and conduct future project-related road and parking area rehabilitation, as necessary, based on the results of this monitoring;
- (7) Provisions to submit a summary report to the Commission every six years that includes the road survey results, documentation of consultation, and a summary of planned road segment and parking area rehabilitation measures, and estimated costs for implementation; and
- (8) An implementation schedule and estimated costs for road rehabilitation and ORV management measures that would be conducted during the period that

precedes the submittal of the first summary report specified in the above measure.

The licensee shall prepare the plan after consultation with the Forest Service, U.S. Department of Interior – Fish and Wildlife Service, National Park Service, California Department of Parks and Recreation, California Department of Fish and Game, California State Water Resources Control Board, Pit River Tribe, and the California Department of Transportation. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and the Tribe, and specific descriptions of how the agencies' and the Tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the Tribe to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 411. Land Resource Plans. U.S. Department of Agriculture, Forest Service (Forest Service) 4(e) Condition 20 (Appendix B) requires the licensee to file land resource plans. In addition to addressing National Forest System lands in the Pit 3 and Pit 4 project reaches, the plan and all components shall be prepared to include all Pit 3, 4, 5 project lands within the project boundary.

The licensee shall prepare the plan after consultation with the California State Water Resources Control Board, the Forest Service, U.S. Department of Interior – Fish and Wildlife Service, National Park Service, California Department of Parks and Recreation, California Department of Fish and Game, California State Department of Forestry and Fire Protection, the Big Bend Volunteer Fire Department, Shasta County, and the Pit River Tribe. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and the Tribe, and specific descriptions of how the agencies' and the Tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the Tribe to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 412. *Programmatic Agreement and Historic Properties Management Plan.* The licensee shall implement the “Programmatic Agreement Among the Federal Energy Regulatory Commission (FERC) and the California State Historic Preservation Officer for Managing Historic Properties That May be Affected by a License Issuing to Pacific Gas and Electric Company for the Continued Operation of the Pit 3, 4, 5 Hydroelectric Power Project in Shasta County, California (FERC Project No. 233-081),” executed on August 24, 2005, and including but not limited to the Historic Properties Management Plan (HPMP) for the project . Pursuant to the requirements of this Programmatic Agreement, the licensee shall file, for Commission approval, a HPMP within one year of issuance of this order. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the licensee shall obtain approval from the Commission and the California State Historic Preservation Officer before engaging in any ground-disturbing activities or taking any other action that may affect historic properties with the project’s area of potential effects.

Article 413. *Use and Occupancy.* (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape

plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or

waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit A or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

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(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(H) The licensee shall serve copies of any Commission filing required by this order on any entity specified in the Order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(I) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other

date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

J. Mark Robinson, Director
Office of Energy Projects

Form L-1
(October, 1975)
TERMS AND CONDITIONS OF LICENSE
FOR CONSTRUCTED MAJOR PROJECT AFFECTING
LANDS OF THE UNITED STATES

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the

Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall

make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other

projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant

possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable

modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Timber on lands of the United State cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the

Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 22. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 23. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 24. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 25. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 26. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 27. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 28. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 29. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, et seq.), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference shall be determined by the Commission after notice ad opportunity for hearing.

Article 30. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to

the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 31. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 32. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A**STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD**

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER BOARD CERTIFIES THAT THE OPERATION OF THE PIT 3, 4, AND 5 HYDROELECTRIC PROJECT BY PACIFIC GAS AND ELECTRIC COMPANY UNDER A NEW LICENSE ISSUED BY FERC will comply with sections 301, 302, 303, 306 and 307 of the Clean Water Act, and with applicable provisions of state law, provided that Pacific Gas and Electric Company complies with the following terms and conditions:

1. Pit 3 Reach Required Minimum Stream Flows

For the purposes of this measure, a spill event is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre-feet) above the required minimum streamflow.

A. Summer/Fall Required Minimum Stream Flow:

1. Summer is defined as the period extending from April 21 through August 31.
2. Fall is defined as the period extending from September 1 until the first spill, as defined above, after November 1 or through November 30, whichever is earlier.
3. The required minimum stream flow during summer shall be 300 cfs.
4. The required minimum stream flow during fall shall be 280 cfs.
5. Following any spill, as defined above, between March 16 and June 15, the required minimum stream flow shall follow the flow regimen described in section B.4. below. Spills ending on or after June 16, shall be returned to the required summer minimum streamflow following the Reservoir Level and Operation Protocol section of this certification.

B. Winter Required Minimum Stream Flow:

1. The winter period begins with the first spill after November 1 and extends through April 20.
2. If no spill occurs between November 1 and April 20, the required minimum stream flow shall be at the summer value throughout the winter.
3. If a spill, as defined above, occurs after November 1, the required minimum stream flow following the cessation of the spill shall be 350 cfs. The required minimum stream flow shall remain at this rate through April 20 unless a spill occurs after March 15.
4. If a spill, as defined above, occurs between March 16 and June 15, the required minimum stream flow following the cessation of the spill shall be 450 cfs for at least 14 days. The required minimum stream flow shall then be 400 cfs for at least the next 10 days and 350 cfs for at least 10 more days. Thereafter, the required minimum stream flow shall be the required summer minimum stream flow.

Pit 3 Reach - Summary of Required Minimum Stream Flows described in detail above:

Season	Start Date	End Date	Required Minimum Stream Flow
Summer	April 21	August 31	300 cfs
Fall	September 1	Between November 1 and November 30	280 cfs
Winter (after spill occurs)	Between November 1 and April 20	April 20	350 cfs
Winter (prior to spill)	December 1	April 20	300 cfs
Winter Spill Cessation	Between March 16 and June 15	June 15	Following cessation of spill: 450 cfs for 14 days then 400 cfs for 10 days then 350 cfs for 10 days

			then 300 cfs
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For the Pit 3 Reach, the spill event that triggers a change to the higher winter minimum stream flow is defined as a stream flow period in the reach that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre feet) above the required minimum stream flow for the Pit 3 Reach. Stream flow in the Pit 3 Reach shall be measured as the sum of spillway flow calculated from hourly reservoir elevation to account for spill volume and the hourly mean release from a calibrated release valve at the dam or by other means acceptable to the USGS. The Pit 3 Dam spill release gates and valves shall be operated as described in the Reservoir Operations condition.

2. Pit 4 Reach Required Minimum Stream Flows:

For the purposes of this measure, a spill event is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre-feet) above the required minimum streamflow.

A. Summer/Fall Required Minimum Stream Flow:

1. Summer is defined as the period extending from June 16 through August 31.
2. Fall is defined as the period extending from September 1 until the first spill, as defined above, after November 1 or through November 30, whichever is earlier.
3. The required minimum stream flow during summer shall be 375 cfs.
4. The required minimum stream flow during fall shall be 350 cfs.
5. Following any spill, as defined above, between March 16 and June 15 the required minimum stream flow shall follow the flow regimen described in section B.4. below. Spills ending on or after June 16, shall be returned to the required summer minimum streamflow following the Reservoir Level and Operation Protocol section of this certification.

B. Winter Required Minimum Stream Flow:

1. The winter period begins with the first spill after November 1 and extends through June 15.

2. If no spill occurs between November 1 and June 15, the required minimum stream flow shall be at the summer value throughout the winter.
3. If a spill, as defined above, occurs after November 1, the required minimum stream flow following the cessation of the spill shall be 450 cfs. The required minimum stream flow shall remain at this value through June 15 unless a spill occurs after March 15.
4. If a spill, as defined above, occurs after March 15, the required minimum stream flow after cessation of the spill shall decline in three steps, as specified below, once the mean daily stream flow at USGS gage 11362500 (Licensee gage PH30) reaches approximately 700 cfs. After completion of the specified flow schedule, the required minimum stream flow shall be the summer required minimum stream flow.
 - a) From March 16 through April 30, the required minimum stream flow is 600 cfs;
 - b) From May 1 through May 31, the required minimum stream flow is 550 cfs; and
 - c) From June 1 through June 15, the required minimum stream flow is 500 cfs.

Pit 4 Reach - Summary of Required Minimum Stream Flows described in detail above:

Season	Start Date	End Date	Required Minimum Stream Flow
Summer	June 16	August 31	375 cfs
Fall	September 1	Between November 1 and November 30	350 cfs
Winter (after spill occurs)	Between November 1 and June 15	June 15	450 cfs
Winter (prior to spill)	December 1	June 15	375 cfs
Winter Spill	March 16	April 30	600 cfs

Cessation	May 1 June 1	May 31 June 15	550 cfs 500 cfs
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For the Pit 4 Reach, the spill event that triggers a change to the higher winter minimum stream flow is defined as a stream flow period in the reach that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre feet) above the required minimum stream flow for the Pit 4 Reach. Stream flow in the Pit 4 Reach shall be measured at USGS gage 11362500 (Licensee gage PH30). The Pit 4 Dam spillway drum gates and low-level outlets shall be operated as described in the Reservoir Operations condition.

3. Pit 5 Reach Required Minimum Stream Flows:

For the purposes of this measure, a spill event is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre-feet) above the required minimum streamflow.

A. Summer/Fall Required Minimum Stream Flow:

1. Summer is defined as the period extending from April 21 through August 31.
2. Fall is defined as the period extending from September 1 until the first spill, as defined above, after November 1 or through November 30, whichever is earlier.
3. The required minimum stream flow during summer shall be 400 cfs.
4. The required minimum stream flow during fall shall be 350 cfs.
5. Following any spill, as defined above, between March 16 and June 15, the required minimum stream flow shall follow the flow regimen described in section B.4. below. Spills ending on or after June 16, shall be returned to the required summer minimum streamflow following the Reservoir Level and Operation Protocol section of this certification.

B. Winter Required Minimum Stream Flow:

1. The winter period begins with the first spill after November 1 and extends through April 20.

2. If no spill occurs between November 1 and April 20, the required minimum stream flow shall be at the summer value throughout the winter.
3. If a spill, as defined above, occurs after November 1, the required minimum stream flow following the cessation of the spill shall be 450 cfs. The required minimum stream flow shall remain at this level until April 20 unless a spill occurs after March 15.
4. If a spill, as defined above, occurs between March 16 and June 15, the required minimum stream flow following the cessation of the spill shall be 550 cfs for at least 14 days. The required minimum stream flow shall be 500 cfs for at least the next 10 days and 450 cfs for at least 10 more days. The required minimum stream flow shall then be the required summer minimum stream flow.

Pit 5 Reach – Summary of Required Minimum Stream Flows described in detail above:

Season	Start Date	End Date	Required Minimum Stream Flow
Summer	April 21	August 31	400 cfs
Fall	September 1	Between November 1 and November 30	350 cfs
Winter (after spill occurs)	Between November 1 and April 20	April 20	450 cfs
Winter (prior to spill)	December 1	April 20	400 cfs
Winter Spill Cessation	Between March 16 and June 15	June 15	Following cessation of spill: 550 cfs for 14 days then 500 cfs for 10 days then 450 cfs for 10 days then 400 cfs

For the Pit 5 Reach, the spill event that triggers a change to the higher winter minimum stream flow is defined as a stream flow period in the reach that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre feet) above the required minimum stream flow for the Pit 5 Reach. Stream flow in the Pit 5 Reach shall be measured at USGS gage 11363000 (Licensee gage PH27). The Pit 5 Dam spillway gates shall be operated as described in the Reservoir Operations condition.

4. Reservoir Level and Operation Protocols:

The Licensee shall, beginning as early as reasonably practicable and within six months after license issuance, operate Project dams, reservoirs, and powerhouses according to the operation protocols specified below.

For the purposes of this condition, a spill event is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre-feet) above the required minimum stream flow.

A. Operation Protocols for Pit 3 Dam, Lake Britton, and Pit 3 Powerhouse

1. The year-round minimum water surface elevation of Lake Britton shall be 2,731.5 feet (NGVD) (2,751 feet, PG&E datum).
2. Each year, within 24 hours following the cessation of the first spill event after November 1, but no later than December 1, at least one of the Pit 3 Dam spillway bladder gates shall be kept in the fully deflated position.
3. The Licensee shall take reasonable care to prevent a sudden release of flow when deflating the bladder gates if the bladder gates must be deflated as per item 2 above and Lake Britton surface elevation is at 2,732.5 feet (NGVD) (2,752 feet, PG&E datum) or higher with the bladder gates inflated.
4. During the period from December 1 through at least April 20 of each year, the minimum water surface elevation of Lake Britton shall be 2,731.5 feet(NGVD) (2,751 feet PG&E datum) and to the greatest extent possible, within the limitation of the Pit 3 Powerhouse capabilities and Pit 3 Dam Spillway capacity, the maximum water surface elevation shall be 2,733.5 feet (NGVD)(2,753 feet PG&E datum) .

5. At least one of the Pit 3 Dam Spillway bladder gates shall remain deflated until April 20 or until there is no flow passing the Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, whichever is later.
6. The maximum allowable Lake Britton water surface elevation shall be 2,735.5 feet (NGVD) (2,755 feet, PG&E datum) between April 21 and the Saturday preceding Memorial Day weekend.
7. The maximum normal water surface elevation of Lake Britton shall increase to 2,737.5 feet (NGVD) (2,757 feet, PG&E datum) on the Saturday preceding Memorial Day weekend or once there is no stream flow passing the Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, whichever is later.
8. If after April 20, and after the stream flow in the Pit 3 Reach has receded to the minimum required stream flow, the inflow to Lake Britton increases to a magnitude that requires deflation of a bladder gate to keep the elevation of Lake Britton within the levels specified above, the bladder gate shall remain deflated until stream flow in the Pit 3 Reach recedes to the required minimum stream flow.
9. If the Pit 3 Powerhouse is operating at less than full flow during a spill event, and is able to return to full flow, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse flow:
 - a) Powerhouse flow shall be increased in steps;
 - b) Each step shall not exceed 50 percent of the stream flow passing Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, based on the midnight stream flow measurements; and
 - c) There shall be at least a 24-hour interval between steps.
 - d) This protocol applies until the Pit 3 Powerhouse reaches full flow or the rate of stream flow passing Pit 3 Dam is less than 200 cfs above the required minimum stream flow for the Pit 3 Reach. If the powerhouse is not at full flow at this point, the stream flow passing the Pit 3 Dam may be reduced to the required minimum stream flow.

1. The normal operating elevation for Pit 4 Reservoir shall be between 2,415.5 feet and 2,422.5 feet (NGVD) (2,435 feet and 2,442 feet, PG&E datum).
2. During periods of increasing inflow to Pit 4 Reservoir, Licensee shall take the following steps in the sequence indicated, until inflow ceases to increase:
 - a) As inflow to Pit 4 Reservoir increases, Pit 4 Powerhouse flows shall be ramped up to match inflow, up to full powerhouse flow.
 - b) If inflow to Pit 4 Reservoir continues to increase, and the reservoir water surface elevation reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), the #1 low-level outlet gate shall be fully opened. As the #1 low-level outlet gate is opened, stream flow shall be transferred smoothly from spill to release. The minimum stream flow release valve shall be closed to prevent plugging with sediment or debris.
 - c) Step b) above shall be repeated for low level outlet gates #2 and #3 until all three low level outlets are opened or inflow ceases to increase.
 - d) If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), all three low-level outlets shall be closed and the #2 spillway drum gate shall be lowered, smoothly transferring the release from the low-level outlets to the open spillway.
 - e) If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step b) and c) above shall be repeated until all three low level outlets are opened or inflow ceases to increase.
 - f) If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 (NGVD) feet (2,443.7 feet, PG&E datum), step d) shall be repeated for the #1 spillway drum gate.
 - g) If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step b) and c) above shall be repeated until all three low level outlets are opened or inflow ceases to increase.
 - h) Further inflow increases shall be allowed to pass through the open spillway and open low-level outlets.

3. In order to minimize flow pulses during the recession of spill flow, after inflow has reached a peak and inflow to Pit 4 Reservoir is decreasing, the Licensee shall take the following actions in the sequence listed, beginning with the action corresponding to the actual peak inflow:
 - a) As inflow to the reservoir declines, and the water surface elevation drops to 2,422.5 feet (NGVD) (2,442.0 feet, PG&E datum), the #3 low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.
 - b) As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), the # 2 spillway drum gate shall be raised and all three low-level outlets shall be opened, smoothly transferring a portion of the spill flow to release flow.
 - c) As inflow to the reservoir continues to decline, and the water surface elevation again drops to approximately 2,422.5 feet (NVGD) (2,442.0 feet, PG&E datum), the # 3 low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.
 - d) As inflow to the reservoir continues to decline, and the water surface drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), the #1 spillway drum gate shall be raised and all low-level outlets shall again be opened, smoothly transferring spill flow to release flow.
 - e) As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,422.5 feet (NVGD) (2,442.0 feet, PG&E datum), the #3 low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.
 - f) As the # 1 low-level outlet is closed, the minimum streamflow release valve shall be opened to the appropriate required minimum streamflow release setting.
 - g) If the Pit 4 Powerhouse is operating at less than full load during a spill event, and is able to return to full load, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse load by utilizing the following protocol:

- 1) Powerhouse load shall be increased in steps;
- 2) Each step shall not exceed 50 percent of the flow passing Pit 4 Dam in excess of the required minimum streamflow for the Pit 4 Reach; and
- 3) There shall be at least a 24-hour interval between steps.

This protocol applies until the powerhouse reaches full flow or the rate of stream flow passing Pit 4 Dam is less than 200 cfs above the required minimum stream flow for the Pit 4 Reach. If the powerhouse is not at full flow at this point, the stream flow passing the Pit 4 Dam may be reduced to the required minimum stream flow.

Operation Protocols for Pit 5 Dam, Pit 5 Reservoir, and Pit 5 Powerhouse

1. As inflow to Pit 5 Reservoir increases, Pit 5 Powerhouse flows shall be ramped up to match inflow up to the full powerhouse flow.
2. As inflow to Pit 5 Reservoir exceeds the full flow of Pit 5 Powerhouse, the Pit 5 Dam spillway gates shall be operated to maintain an approximately constant water surface elevation of 2,040.5 feet (NGVD) (2,060 feet PG&E datum) at Pit 5 Reservoir.
3. If the Pit 5 Powerhouse is operating at less than full flow during a spill event, and is able to return to full flow, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse flow:
 - a) Powerhouse flow shall be increased in steps;
 - b) Each step shall not exceed 50 percent of the flow passing Pit 5 Dam in excess of required minimum stream flow for the Pit 5 Reach, based on the midnight stream flow measurements; and
 - c) There shall be at least a 24-hour interval between steps.

This protocol applies until the powerhouse reaches full flow or the rate of stream flow passing Pit 5 Dam is less than 200 cfs above the required minimum stream flow for the Pit 5 Reach and the powerhouse is not at full flow, at which point the stream flow passing the Pit 5 Dam may be reduced to the required minimum stream flow.

5. Freshet Flows

The Licensee shall make freshet flow releases into each of the three Project-affected reaches of the Pit River as described below. Project reaches shall be considered separately and independently when determining if a freshet flow is required. The Licensee shall not initiate a freshet flow in the Pit 4 Reach if mean daily water temperature at Licensee gage PH30 exceeds 11° C for two consecutive days in the two-week period prior to the scheduled initiation of the freshet flow. The temperature criteria for not initiating a freshet flow may be modified after consultation with the Deputy Director and other appropriate agencies, and with approval of the Deputy Director and the U.S. Forest Service, based on available information and monitoring of foothill yellow-legged frog breeding and egg deposition in the Pit River.

Licensee shall implement the following planning events and actions each year:

- A. If, as of January 1 of each year, there has been no spill, as defined in item D below, in the previous 15 months into a given Project-affected river reach, the Licensee shall notify by January 30 the Deputy Director, other appropriate agencies, and interested parties that there is a potential need for a freshet flow release for that reach during the upcoming March.
- B. If no spill has occurred per item A, the Licensee shall post, following the provisions in the Recreation Stream Flow Information condition, a notice prior to February 15 of a planned freshet flow for that reach beginning between March 1 and March 7, scheduled so that the peak flow occurs over a weekend to facilitate whitewater boating opportunities.
- C. A freshet flow shall have the following characteristics: the duration of the event, including the flow increase, decrease and the peak, must be at least 21 days in length; the instantaneous peak flow magnitude must be at least 1,500 cfs; and there must be a two-day average flow of at least 1,500 cfs. After the peak, stream flow shall decrease in five steps of approximately equal magnitude and duration over the remaining days of the freshet period, ending at the winter required minimum stream flow for the reach. Ramping between each flow step shall be 0.5 foot/hour or less, as defined by the Ramping Rates condition.
- D. For the purposes of this condition, spill is defined as a stream flow event at a Project dam during the 17 months prior to the March 1 freshet flow implementation date that meets all of the following characteristics: occurs

between December 1 and May 31; has a cumulative volume of at least 25,000 acre-feet; has a duration of at least 21 days; and has at least two average daily flows exceeding 1,500 cfs. Spill may be made up of natural and released flows.

6. Out-of-Season Spill Reduction

The Licensee shall operate the Project in a manner that does not cause discretionary, out-of-season spill flows in excess of twice the required minimum stream flow at Pit 3 Dam, Pit 4 Dam, and Pit 5 Dam. An out-of-season spill is defined as a spill that occurs during the normally non-spill summer and fall period. The Licensee shall take all reasonable controllable actions necessary to control out-of-season spill flows, which shall include, as a first priority, utilization of Project storage.

In the event an out-of-season spill occurs, the Licensee shall take reasonable controllable actions to minimize the magnitude, duration, and potential adverse ecological impacts of such spill. Such actions shall include, utilizing upstream reservoir capacity, and to the extent practicable, ramping the spill flow up and down as described in the Ramping Rates condition. The Licensee shall develop and implement, within one year of license issuance, reasonable actions to mitigate for adverse ecological impacts in the event a discretionary out-of-season spill occurs. Licensee shall submit proposed mitigation measures for review and approval by the Deputy Director. The Licensee shall prepare, maintain, and on an annual basis provide to the Deputy Director a record of any out-of-season spills, identifying the affected reach, hourly discharge, the maximum flow magnitude, dates and duration, cause of spill, and mitigation provided. Licensee may incorporate this requirement as a component of the Recreation Streamflow Release Plan (Condition 8 and Mitigation Measure 8).

7. Ramping Rates

To prevent adverse effects of rapid changes in regulated stream flow that are inconsistent with the natural rate of change in stream flow, the Licensee shall follow the ramping rates specified below when making stream flow releases from Pit 3, Pit 4, and Pit 5 Dams unless a different ramping rate is specified in another condition.

A ramping rate is defined as the rate of change in stream stage height, up or down, over a time period, such as 0.5 foot/hour. The Licensee shall be deemed in compliance with the specified up and down ramping rate if at least 75 percent of the actual incremental changes in flow are less than or equal to the specified ramping

rate, and all of the actual incremental changes in flow are less than 150 percent of the specified ramping rate.

Ramping Rate for Freshet Flow Releases: A freshet flow may be released in March of some years, and will consist of a 21-day flow event that is described in detail in the Freshet Flow Release condition. The ramping rate to reach the daily target values for freshet flows shall be 0.5 foot/hour or less, up and down.

Ramping Rate after Spills Influenced by Powerhouse Outages: As described in the Reservoir Operations condition, some spills may include, or be composed entirely of, flow that would otherwise be going through a powerhouse but is instead released as spill due to a powerhouse outage. The Reservoir Operations condition specifies that when returning the powerhouse to full load, the 24-hour increase of powerhouse flow shall not exceed 50 percent of the flow passing the associated dam in excess of the required minimum stream flow for the affected reach, based on the midnight stream flow measurements. The ramping rate shall be 0.5 foot/hour or less. The final step to the required minimum stream flow is allowed when the difference between the flow passing the dam is less than 200 cfs above the required minimum stream flow for the affected reach. The ramping rate for the downstream reach shall be 0.5 foot/hour or less and there shall be an hour separation between each step until the daily decrease in spill is reached.

Ramping Rate Before and After Out-of-Season Spills: If the Licensee anticipates that an out-of-season spill is imminent because the storage capacity of the affected reservoir will be exceeded, the Licensee shall make a good faith effort to initiate stream flow releases that ramp up to the expected spill flow in at least three steps. An out-of-season spill is defined as a spill that occurs at Pit 3 Dam, Pit 4 Dam, or Pit 5 Dam during the normally non-spill summer and fall period.

The out-of-season spill shall be ramped down at a rate that is dependent on the duration of the spill. If the spill was less than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot/hour. If the spill was longer than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot/hour, but one hour shall separate each step so that the down ramp is more gradual.

Ramping Rate for Recreation Stream Flow Releases: The ramping rate up and down for recreation stream flow releases shall be 0.5 foot/hour or less. Both up and down ramping steps shall be separated by one hour until the specified recreation stream flow release (ramp up) or the required minimum stream flow (ramp down) is reached.

Ramping Rate for Changes in Required Minimum Stream Flow: Because the magnitude of changes in required minimum stream flow is less than the change in stream flow associated with a 0.5-foot change in stage height, no ramping is required for these changes in stream flow.

8. Recreation Stream Flow Releases

The Licensee shall, within six months after license issuance and in consultation with Deputy Director, appropriate agencies, Pit River Tribe, American Whitewater, and other parties who request involvement, develop a plan for providing annual recreation stream flow releases in the Pit 5 Reach suitable for whitewater boating. The Licensee shall submit a draft plan for 30-day review and comment by the entities consulted, and shall within 30 days thereafter submit a final plan, addressing comments received on the draft plan, to the Deputy Director for approval. Within 10 days following approval by the Deputy Director, the Licensee shall file the plan with FERC for final approval. Upon approval by FERC, the Licensee shall implement the plan.

The plan shall consist of the following key elements: Baseline Data; Recreation Stream Flow Schedule; Monitoring; and Adjustment of Stream Flow Events, with each element providing the information specified below.

Baseline Data: This element shall identify essential baseline data necessary for effective evaluation of possible ecological effects of the recreation stream flow releases. The element shall identify existing data and data to be developed, shall include a study plan and schedule for obtaining such data, and shall describe how data will be used. Additionally, the element shall specify the timing relationship between data acquisition, initiation of recreation stream flow releases, and potential adjustment of recreation stream flow releases in response to data gathered. The period for acquisition of baseline data shall not exceed two years unless the Deputy Director finds that new information provides a compelling reason to initiate additional years of baseline data collection up to a maximum five years.

Recreation Stream Flow Schedule: The initial recreation stream flow release schedule shall be four recreation release flow days per year consisting of two consecutive weekend days in August with minimum flows of 1,500 cfs from 10 AM to 4 PM at Pit 5 Dam and two consecutive weekend days in September with minimum flows of 1,200 cfs from 10 AM to 4 PM at Pit 5 Dam. All flow magnitudes shall be a minimum of 1,200 cfs in years that Pit 3 Dam does not spill, as defined in the Required Minimum Stream Flow condition. The initial recreation stream flow release schedule shall be maintained for a minimum of three consecutive years, unless the

Deputy Director determines that the stream flow releases are or will have a significant effect on the environment, in which case, Licensee shall immediately cease releasing recreation flows. Thereafter, it may be modified as described in the Adjustment of Stream Flow Events element below.

Monitoring: The Monitoring element shall consist of two subsections: environmental monitoring and boater-use monitoring. (1) The environmental monitoring subsection shall describe the environmental monitoring to be performed to assess and evaluate potential environmental effects of the recreation stream flow releases. At a minimum, the environmental monitoring program shall include monitoring of impacts to aquatic biota, other river users, other recreation users, special status species, and cultural sites and uses. The environmental monitoring program shall commence upon implementation of the recreation stream flow releases. The monitoring period shall not exceed three years and the total cost of monitoring shall not exceed \$150,000. The monitoring shall be adjusted, as appropriate, to not exceed these limits. (2) The boater-use monitoring subsection shall describe the monitoring to be performed to assess the adequacy of the number of recreation stream flow release days in a year. The boater-use monitoring program shall provide for monitoring actual boater use of recreation stream flow releases. For the first three years of recreation stream flow releases, the Licensee shall, on each recreation stream flow release day, count observed boater use in "boater days." One boater day is defined as boating use of the Pit 5 Reach by one person for any part of a given day. After the first three years of recreation stream flow releases, boater-use monitoring shall be performed in any year that the number of recreation stream flow release days is increased or decreased and at least once every three years over the term of the license. Boater-use monitoring may be discontinued by mutual agreement between the Licensee and Deputy Director after consultation with American Whitewater, U.S. Fish and Wildlife Service and other interested members of the public, and with the concurrence of FERC.

Adjustment of Stream Flow Events: This element shall describe the program for potential adjustment of the recreation stream flow releases in response to the results of the boater-use and environmental monitoring programs specified in the Monitoring element. Adjustment of the magnitude of recreation stream flow releases and schedule may occur in response to the results of the environmental monitoring program. Such adjustments shall be objective and based on sound scientific study. The Licensee shall consult with the Deputy Director, other appropriate agencies, Pit River Tribe, American Whitewater, and other parties who request involvement regarding any such adjustments, and shall obtain approval by the Deputy Director and notify FERC before implementing such adjustments. Adjustment of the recreation stream flow release schedule in response to the results of the boater-use monitoring shall consist of adding or subtracting recreation stream flow release days based on

actual use. One weekend day of recreation stream flow releases shall be added to the recreation stream flow release schedule for the next year if actual use exceeds 80 boater days for each recreation stream flow release day in a given month. One weekend day of recreation stream flow releases shall be subtracted from the recreation stream flow release schedule for the next year if actual boater use is less than 25 boater days for each recreation stream flow release day in a given month. The number of recreation stream flow release days shall be adjusted for the same month in which the adjustment triggers were met. Based on boater use monitoring, the number of recreation stream flow release days shall not be reduced to less than one weekend day in August and two consecutive weekend days in September, and shall not be increased to more than four weekend days in August and four weekend days in September. If the maximum number of recreation stream flow release days is being provided, and actual use exceeds 80 boater days on all days, one additional weekend day of recreation stream flow release with flows of 1,200 cfs from 10 AM to 4 PM at Pit 5 Dam shall be provided in October of the next year. The October recreation stream flow release day is subject to the same future adjustment as the August and September recreation stream flow release days, with a maximum number of two consecutive weekend days, and a minimum number of no days. Recreation stream flow release days shall not be added during the three-year environmental monitoring period.

9. Streamflow Information

The Licensee shall, beginning as soon as reasonably practicable and no later than one year after license issuance, each year make available to the public the recreation stream flow information listed below. Unless otherwise noted, the stream flow information shall be available to the public via toll-free phone and internet, which may be accomplished through a third party. The stream flow information protocols may be modified upon mutual agreement of the Licensee, U.S. Forest Service and other responsive parties who request involvement, and acceptance by FERC. Licensee shall make the following information available:

- A. The hourly average stream flow in the Pit River below each of the Pit 3, Pit 4 and Pit 5 Dams for the current day and the past seven days. The stream flow information may be measured, calculated or a combination of the two. The stream flow information shall be posted within four hours of collection. Stream flows shall be rounded up to the nearest 50 cfs, and all plots and tables showing these data shall be labeled: "These provisional data have not been reviewed or edited, and may be subject to significant change."

- B. By January 5, the proposed dates and magnitude for any freshet flow, if applicable, planned to be provided by the Licensee, with updates by February 15 and within two days of any changes in plans.
- C. By July 1, the proposed dates for any recreation stream flow releases, with updates at least two weeks and one week in advance of each proposed date.

In addition, the Licensee shall:

- D. As soon as reasonably practicable and no later than two years after license issuance, install and maintain one simple staff gage/depth indicator at the following locations: Licensee gage PH30 below Pit 4 Dam, Licensee gage PH27 at Big Bend Bridge, and provided a suitable location is identified in consultation with U.S. Forest Service, U.S. Fish and Wildlife Service, and American Whitewater, a site below Pit 3 Dam. The Licensee shall make a good faith effort to locate the staff gages/depth indicators near public access locations so they are easily accessible for public reference. The Licensee shall provide a means at each staff gage/depth indicator to reasonably correlate staff gage/depth indicator readings to cfs.
 - E. Notify the community of Big Bend and the Big Bend Rancheria in advance of planned freshet flow releases and recreation stream flow releases by posting bulletins on public bulletin boards located in those communities.
10. All Minimum Stream Flows are the average of seven days of the mean daily flow. Individual mean daily flows may be less than the required Minimum Stream Flow. The instantaneous, 15-minute stream flow shall be at least 90 percent of the required minimum stream flow. No ramping is required when changing between seasonal required minimum streamflow rates.
 11. Where facility modification is required to meet the Minimum Stream Flows or Ramping Rate conditions, modifications must be completed within three years of the issuance of the license. Failure to complete modifications within three years will subject Licensee to enforcement action, including the assessment of monetary penalties. The Licensee shall submit an interim stream flow and facility modification plan to the Deputy Director within three months of license issuance. The plan shall include the minimum stream flows that will be provided prior to facility modification, proposed facility modifications, a schedule for facility modification, and a list of permits required.
 12. All flow requirements of this certification are subject to temporary modification if required by equipment malfunction, emergency conditions or law enforcement

activity, or critical electric system emergency beyond the control of the Licensee. The Licensee shall provide advance notification to the State Water Board, Deputy Director, prior to any temporary modification if possible. If advance notification is not possible because an event is unforeseeable, Licensee shall notify the Deputy Director immediately but no later than 48 hours from the time that any temporary modification has occurred.

13. The Licensee shall install water temperature monitors (i.e., telemetered, real time, year-round) at stream gage PH 30 in the Pit 4 Reach and at stream gage PH 27 in the Pit 5 Reach. Licensee shall immediately notify the Deputy Director if average daily water temperature at either of these locations exceeds 20° C. Licensee shall provide yearly reports of water temperature recorded at these locations by December 30 of each year with data from the previous water year (September to October) to the Deputy Director. The report shall include raw temperature data, mean daily temperatures, and daily maximum and minimum temperatures.
14. The conditions and monitoring and reporting requirements detailed in the CEQA findings section (Attachment A) are hereby incorporated by reference. Notwithstanding any more specific conditions in this certification, Licensee shall comply with mitigation measures 1 through 10, and 12, identified in the CEQA findings and the mitigation monitoring and reporting plan in Attachment A.
15. Licensee must submit any change to the Pit 3, 4, and 5 Hydroelectric Project, including project operation that would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the Deputy Director for prior review and written approval.
16. Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. The Licensee shall take all reasonable measures to protect the beneficial uses of water of the Pit River.
17. The authorization to operate the Project pursuant to this certification is conditioned upon payment of all applicable fees for review and processing of the application for water quality certification and administering the State's water quality certification program, including but not limited to: timely payment of any annual fees or similar charges that may be imposed by future statutes or regulations for the State's reasonable costs of a program to monitor and oversee compliance with conditions of water quality certification.

18. This certification is not intended and shall not be construed to apply to issuance of any FERC license or FERC license amendment other than the FERC license specifically identified in the Licensee's application for certification described above.
19. This certification does not authorize any act which results in the "taking" of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code §§ 2050 - 2097) or the federal Endangered Species Act (16 U.S.C. §§ 1531 - 1544). If a "take" will result from any act authorized under this certification or water rights held by the Licensee, the Licensee shall obtain authorization for the take prior to any construction or operation of the Project. The Licensee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the Project authorized under this certification.
20. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under applicable State or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to a suspected violation of any condition of this certification, the State Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.
21. This certification is subject to modification upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with § 3867).
22. The State Water Board reserves authority to modify this certification if monitoring results indicate that continued operation of the Project would violate water quality objectives or impair the beneficial uses of the Pit River.
23. The State Water Board may add to or modify the conditions of this certification, as appropriate, to implement any new or revised water quality standards and

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implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

24. The State Water Board may add to or modify the conditions of this certification as appropriate to coordinate the operations of this Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to achieve water quality standards or protect beneficial uses of water.
25. The State Water Board shall provide notice and an opportunity for hearing in exercising its authority under conditions 22, 23, and 24 above.

Thomas Howard
Acting Executive Director

Date:

Attachment

Attachment A

California Environmental Quality Act Findings and Mitigation Monitoring
and Reporting Plan for the Pit 3, 4, and 5 Hydroelectric Project**Mitigation Measure 1: Streamflow and Reservoir Level Monitoring Plan**

PG&E shall develop a streamflow and reservoir level monitoring plan that includes provisions to measure streamflows required under conditions of the water quality certification. In the Pit 3 Reach this would be accomplished by using the sum of spillway flow calculated from hourly reservoir elevation to account for spill volume and the hourly mean release from a calibrated release valve at the dam or by other means acceptable to the U.S. Geological Survey (USGS); in the Pit 4 Reach this would be accomplished at USGS gage No. 11362500; and in the Pit 5 Reach this would be accomplished at USGS gage No. 11363000. The plan shall be developed within 1 year of license issuance, in consultation with the U.S. Forest Service (FS), U.S. Fish and Wildlife Service (FWS), California Department of Fish and Game (CDFG), State Water Board, and USGS and submitted for review and approval of the Deputy Director of the Division of Water Rights (Deputy Director). The Plan shall include a provision for PG&E to provide streamflow information to the public beginning no later than 1 year from license issuance, in accordance with the provisions in the section of the Pit River Collaborative Team (PRCT) agreement entitled Streamflow Information. The plan shall include the following components and considerations:

- A. A description of the existing flow and any existing water surface elevation monitoring devices, including location and type of instrumentation;
- B. Installation and calibration of a flow measurement device in the Pit 3 Reach (either a device in the release valve at the Pit 3 Dam, or a gage in the Pit 3 Reach) which can accurately (i.e. meets USGS standards) measure compliance with the flow regime specified in the license order. PG&E shall submit to the Deputy Director for review and approval a plan for the installation of the selected flow measurement device, including specific measures that will be used to protect water quality;
- C. The proposed frequency of data downloads, how the data would be accessed during the term of the new license, and the proposed technique and frequency of calibration (for those existing flow gaging stations that are operated in cooperation with USGS, we anticipate that future calibration would be similar to current calibration procedures);
- D. A detailed description of any structural modifications that would be necessary to accommodate the flow regime (and its measurement) specified in the new license, including design drawings, conceptual cost estimates, and schedule for implementation of the proposed modifications;

- E. Proposed interim measures to comply with required flow releases until structural modifications have been completed;
- F. Identification of the entities responsible for installing, maintaining, and ensuring the continued accuracy of the flow and water surface elevation monitoring devices; and
- G. Reporting frequencies to the State Water Board, appropriate agencies and Federal Energy Regulatory Commission (FERC).

Mitigation Measure 2: Water Temperature and Water Quality Monitoring Plan

PG&E shall develop and implement a water temperature and water quality monitoring plan, including monitoring during months when temperatures could be limiting to aquatic biota, which for most species is from June through September. The Plan should help define parameters that would optimize foothill yellow-legged frog reproduction, which typically occurs during the spring, and would serve as a basis for establishing the timing of spring freshet flow releases. Therefore, during the spring, PG&E shall monitor temperature at known or potential foothill yellow-legged frog habitat locations. Taking spot dissolved oxygen (DO) measurement and periodic temperature and DO profiles in Lake Britton near the Pit 3 Dam during high temperature low flow conditions (which typically occur during July and August), along with monitoring water temperature in the river reaches, will provide a basis for documenting that Project operations comply with water quality objectives. This plan shall be developed in consultation with the FS, FWS, CDFG, U.S. Environmental Protection Agency (EPA), and State Water Board, and submitted to the Deputy Director for approval. The approved plan must be submitted to FERC within one year of license issuance. The plan shall include the following:

- A. The location of stations in each reach at which water temperature will be monitored;
- B. The time frame during which water temperature will be monitored at each station;
- C. The type of instrumentation, frequency of data collection, and calibration procedures that will be used to monitor temperature and DO;
- D. Temperature conditions that will trigger spot DO measurements at specific stations;
- E. Potential Project operational procedures that could be implemented to maintain Project waters at or below 20 degrees C (68 degrees F) and identification of circumstances that would trigger implementation of those procedures. If monitoring shows water temperature exceeding 20 degrees C, it may be possible to temporarily modify Project operations to maintain cooler water in the affected reach;

- F. A schedule for installation of temperature monitoring equipment (to be completed no later than six months after submission of the plan to FERC); and
- G. Procedures to report monitoring results to the State Water Board, other resource agencies, and FERC.

Mitigation Measure 3: Fish and Invertebrate Monitoring Plan

PG&E shall develop and implement a fish and invertebrate monitoring plan that is based on the methods used in surveys conducted during the relicensing effort and the current Biological Compliance Monitoring Plan (BCMP), including angler surveys, reservoir fish surveys, river reach surveys, macroinvertebrate surveys, and aquatic mollusk surveys. This plan shall be developed within six months of license issuance, and for surveys in years 1 through 4 and in years 8, 12, 16, 20, and 24 (unless an alternative monitoring schedule is approved by Deputy Director), in consultation with the State Water Board, FS, CDFG, FWS, and the Tribe, at a minimum, and submitted to the Deputy Director for review and approval. The plan should be coordinated with the BCMP (Mitigation Measure 11), any gravel augmentation, and the collection of baseline data for potential recreation streamflow releases to the Pit 5 Reach (Mitigation Measure 8).

Mitigation Measure 4: Erosion and Sedimentation Control Plan

PG&E shall develop and implement an Erosion and Sedimentation Control Plan that is coordinated with the spoils pile management plan, recreation management and road management plans, and the Historic Properties Management Plan. For Lake Britton, this plan shall include: 1) periodic monitoring of the shoreline to identify actively eroding sites, assessing whether problems at identified sites are Project-related and if stabilization measures are warranted, 2) if warranted, provisions for designing and implementing shoreline stabilization in consultation with Deputy Director and or Executive Officer of the Central Valley Regional Water Quality Control Board, and 3) coordination of this component of the plan with the monitoring requirements for bank swallows under Mitigation Measure 11(B). The plan also shall specify protocols for addressing emergency erosion and sedimentation control measures, both for immediate short-term stabilization and, if necessary, permanent long-term measures to replace any temporary stabilization measures that may have been implemented. The plan should include protocols for notification of the FS, State Water Board, and FERC in the event that emergency erosion and sedimentation control measures are needed. The plan shall be developed within one year of license issuance in consultation with the Tribe, CDFG, FWS, State Water Board, and, as appropriate, the FS and submitted to the Deputy Director for approval. Erosion control measures must ensure that existing and future erosion sites are identified and stabilized, and monitored. The Erosion and Sediment Control Plan shall incorporate the following measures:

- A. Signage that encourages recreationists to stay on marked trails and obey designated boating speed limits
- B. Procedures for detecting erosion sites
- C. Procedures for stabilizing and monitoring erosion sites
- D. Requirements for obtaining a General Permit for Discharges of Storm Water Associated with Construction Activity, including the development of a Storm Water Pollution Prevention Plan

Mitigation Measure 5: Spoil Pile Management Plan

PG&E shall develop, within one year of license issuance, a single spoil pile management plan, in consultation with the FWS, CDFG, State Water Board, the Tribe, and, as appropriate, the FS, that contains provisions for slope stabilization, water quality protection, and revegetation. The plan shall be submitted to the Deputy Director and the Executive Officer of the Central Valley Regional Water Quality Control Board for review and approval. The plan shall: (a) include proposed remedial measures for the Miners Creek spoil pile, including the measures recommended by PG&E's consultant to control surface water runoff and protection of the toe from high flows in Miners Creek, as appropriate; (b) specify management and maintenance measures for all spoil piles created during Project construction; (c) address whether or not stabilization measures are warranted at the erosion site across the Pit River from spoil pile 4D; and (d) address the measures specified by the FS in its final 4(e) condition No. 20.a as follows:

General Measures:

- Stabilization/erosion control (using only certified weed- free straw)
- Revegetation
- Noxious weed management
- Foreign material treatment, including removal of visible non-native materials
- Monitoring of water quality (as per pre- licensing study protocol) and adherence to best management practices (BMPs)
- Consideration of visual quality
- Utilization of material (especially Pit 4 valve house site #4P)
- Other measures (i.e. recreational overlook improvements at Pit 4 Dam site #4D dispersed camping at the Adit pile #4A, road closure #4D)

Specific measures for spoil pile site #4P (at Pit 4 powerhouse) management:

- Develop a stabilization/rehabilitation plan for the site incorporating future placement of road spoils from Project roads, site leveling, slope revegetation, and other erosion prevention measures.

- Show the current site (after above work considered) and calculations showing the amount of material the site could hold for future spoils placement.
- Include a final pit plan including reclamation that shall also be submitted to Shasta County for compliance with Surface Mining and Reclamation Act (SMARA) regulations.
- Additional visual and safety mitigations may be necessary if this site is additionally used as a vista point for the public.
- The plan shall include the requirement to obtain a General Permit for Discharges of Storm Water Associated with Construction Activity from the Central Valley Regional Water Quality Control Board and Clean Water Act section 404 and 401 permits if necessary.

Mitigation Measure 6: Dredging Plan

PG&E shall develop a dredging plan that would apply should dredging in Project waters be needed during the term of a new license. The plan shall be developed and approved by the Deputy Director prior to conducting any dredging operation in Project waters, in consultation with the FWS, State Water Board, CDFG, U.S. Army Corps of Engineers (Corps), EPA, and, if the operation would affect National Forest System Lands, the FS, that includes the following: (a) a description of the need for the proposed dredging; (b) the selected method of dredging, and alternative methods considered; (c) a figure showing the areal extent of the dredging; (d) the estimated volume to be dredged; (e) a description of the substrate to be dredged; (f) a figure showing the proposed dredge spoil disposal site, with a description of measures to prevent erosion and sedimentation; and (g) a schedule for dredging, dredge disposal, and dredge spoil pile stabilization. PG&E shall implement BMPs to control sedimentation and downstream transport of fine-grained sediment that may be resuspended at the dredging site. Dredge spoil shall be disposed of in a manner that minimizes the potential for reintroduction of sediment. PG&E shall select an appropriate disposal site and implement spoil pile stabilization and restoration measures prior to the initiation of dredging. This water quality certification does not allow for dredging. When dredging is required, PG&E must obtain water quality certification, in addition to approval from the U.S. Army Corps of Engineers.

Mitigation Measure 7: Biological Monitoring and Adaptive Management Plan

PG&E shall develop a biological monitoring and adaptive management plan within one year of license issuance, in consultation with the FS, CDFG, FWS, State Water Board, and the Tribe, at a minimum, that establishes the framework for evaluating the effects of minimum instream flows, reservoir level and operations protocols, and freshet flows, on fish and wildlife, including defining the resource goals and objectives that are expected to be achieved under the conditions

of a new license. The plan shall also define the process that would be used to determine whether: (1) measures result in any unanticipated significant impacts, and (2) if there is a need to adjust measures or implement new measures. The plan shall also define consultation procedures that will be taken prior to undertaking any actions that could affect FS sensitive species or their habitat, to determine whether preparation of a Biological Evaluation would be necessary (see Mitigation Measure 11). The plan shall be revised, as needed, every four years and filed with the Deputy Director, including a summary of monitoring results and description of any changes in water quality certification conditions that are proposed, and the basis for the changes. The State Water Board may, in its discretion and after notice and opportunity for hearing, amend the certification condition as appropriate.

Mitigation Measure 8: Recreation Streamflow Release Plan

PG&E shall develop a plan within six months of license issuance for providing annual recreation streamflow releases consistent with the water quality certification condition eight in the Pit 5 Reach suitable for whitewater boating, in consultation with the State Water Board, CDFG, FWS, NPS, CDPR, the Tribe, and American Whitewater Association (AWA), at a minimum. The plan shall provide details on the collection of up to five years of ecological monitoring data, specify details of a recreation streamflow release schedule, provide for environmental and boater-use monitoring during actual releases, and describe an adaptive management program that will provide for potential adjustments to the number of releases based on the results of the monitoring. The plan shall specify a decision point, where the results of baseline monitoring will be assessed by the consulted parties and a final recommendation, with the basis for the recommendation, made to the Deputy Director regarding whether or not scheduled recreation streamflow releases should be implemented. If scheduled releases are recommended, specific measures that will be implemented during the releases for the protection of sensitive resources, river users (e.g., swimmers and anglers), and the safety of boaters shall be submitted to the Deputy Director for review and approval.

Mitigation Measure 9: Vegetation and Noxious Weed Management Plan

PG&E shall develop within two years of license issuance, in consultation with the FS, Shasta County Agricultural Commissioner, CDFA, FWS, National Parks Service (NPS), CNPS, CDFG, and the Tribe and subject to approval by the Deputy Director prior to conducting any ground-disturbing activities, a vegetation and noxious weed management plan for all Project lands that provides for the following: (a) protection of special status plants that includes maintenance of a Project GIS database that would allow mapping and tracking occurrences of

special status plants, including Pacific fuzzwort, in order to assist in evaluating plans for vegetation management, developing protocols for maintenance personnel that may be working in areas near known sensitive plant locations, siting for new recreational facilities, and other activities that would cause ground disturbance or habitat alteration; (b) improvement of wildlife habitat, including fire fuel load reduction measures (for any such measures, consult with the FS to evaluate the consistency with the FS standards and guidelines for management of the Chalk Mountain LSR, and protection of listed and sensitive species); (c) enhancement of ethnobotanical resources (identification of ethnobotanical resources, including the potential establishment and protection of plant gathering sites and the incorporation of important species into plans for revegetation); and (d) control of noxious weeds (including in the bypassed reaches), including the following:

- A. Provisions for noxious weed surveys and management on all PG&E Project lands, including transmission line and access road rights-of-way and recreational facilities;
- B. Identification of management responsibilities, goals, and objectives;
- C. Definitions of realistic control intensities for each noxious weed that meets management objectives;
- D. Comparisons and evaluations of resource trade-offs of various control methods;
- E. Prioritization of treatment sites;
- F. Presentation of an integrated noxious weed treatment scenario, including plans for long-term monitoring; and details of a plan for action, showing a schedule for implementation, funding requirements, and a mechanism for annual review and revision of the plan to incorporate information collected during monitoring efforts;
- G. Proposed measures for revegetation following noxious weed treatments;
- H. Emphasis on education and other pro-active measures (e.g., washing down construction equipment, certifying fill materials, public education and signing of public boat access points to prevent aquatic weed infestations) to prevent establishment and spread of weeds;
- I. Emphasis on the use of non-herbicide techniques, and allow for herbicide use, if any, only at specific sites; for these sites, the plan should indicate why other techniques would not be effective and identify measures that would be taken to protect non-target plants and animals; and
- J. Incorporation of noxious weed monitoring into other programs PG&E would be implementing, where possible, to maximize the potential for detection and early treatment.

Prepare a plan within one year of issuance of the recreation management plan in consultation with the FS and the Tribe that will address management of the overstory and understory at PG&E's existing and proposed developed recreational areas.

Mitigation Measure 10: Riparian Vegetation Monitoring Plan

In coordination with the Biological Monitoring and Adaptive Management Plan (Mitigation Measure 7), develop and implement a riparian vegetation monitoring plan for the three bypassed reaches to document changes over time and in response to any new instream flow requirements. The plan shall be developed within 1 year of license issuance in consultation with the FS, FWS, CDFG, and the Tribe to identify measurable riparian habitat parameters, survey protocols and timing, and provisions for reporting, prior to submission to the Deputy Director for approval.

Mitigation Measure 12: Recreation Management Plan

PG&E shall develop a comprehensive Recreation Management Plan that includes site drawings and an implementation schedule. The FS, FWS, NPS, California Department of Parks and Recreation (CDPR), CDFG, State Water Board, Shasta County, the Tribe, and the Hat Creek Technical Advisory Committee, shall be consulted during development of PG&E's proposed recreation management plan. The Plan shall be submitted to the Deputy Director for approval within one year of license issuance. The plan shall include the following components and considerations:

- A. Identification of recreational use management objectives for the Project area, specifically for the upper and lower Lake Britton area and the Pit River Canyon Reaches, and consideration of FS Recreation Opportunity Spectrum (ROS) objectives associated with these areas, as appropriate, in developing these objectives.
- B. A summary of the existing Project-related facilities, including type, location, owner, and entity responsible for the management of the facilities.
- C. Recreational-use capacity triggers to help assess the need for future development of additional facilities, such as an expanded campground or day-use facility at Lake Britton, or a new primitive campground in the Pit River Canyon area.
- D. The results of PG&E's proposed assessment of whether a primitive campground can be developed along the Pit 5 Bypassed Reach, including: (a) potential sites; (b) the estimated cost of developing a site; (c) documentation of consultation with CDPR, FWS, CDFG, and representatives of the community of Big Bend; (d) a recommendation regarding whether the site should be developed; and (e), if so, a schedule or capacity trigger that would be used to initiate site development.

- E. Measures to provide new and upgraded existing Project-related recreational facilities and trails within the Project area, including triggers to address the need for sanitation facilities and trash receptacles. The plan shall include preliminary designs, implementation schedule, and estimated costs for these facilities. Facility design should consider providing accessibility to persons with disabilities, as appropriate, and be consistent with the recreational-use management objectives.
- F. Assessment of the potential effects of the proposed facilities on the Project area sensitive resources, and development of additional appropriate site-specific mitigation measures, if needed.
- G. Coordination of the development of the plan and facility upgrades with development with the road and facilities management plan, particularly the off-road vehicle (ORV) management component of that plan, the vegetation management plan, the IBEMP, and the Historic Properties Management Plan (Mitigation Measure 20) for the Project.
- H. Identification of measures to maintain and manage the existing and new Project-related recreational facilities and trails within the Project area, including identifying the entity responsible for managing the facility, and recreational site vegetation management measures for the existing and proposed recreational access areas within the Project boundary.
- I. Documentation of consultation conducted in the development of the recreation management plan with agencies, tribes, and other interested parties, including copies of any correspondence with the consulted parties, summary of key meetings conducted with the consulted parties in the development of the plan, and PG&E's response to comments on the plan.
- J. The following measures that pertain to Lake Britton:
 - 1) Develop a plan for public access to Lower Hat Creek consistent with the Historic Properties Management Plan.
 - 2) Implementation of the following improvements at the North Shore Campground: (a) institute measures to create and maintain beach areas and to reduce shoreline erosion due to beach use; (b) designate swimming areas to separate swimming and boat mooring and beaching; (c) provide directional signage, as appropriate; (d) evaluate the need for and feasibility of constructing additional road pullouts on the North Shore Campground access road; assess measures to provide 10 to 15 parking spaces for day use only near the boat

- launch or east bluff beach access areas; (e) provide firewood to campground users (either for sale or free of charge); and (f) install flush toilets and showers;
- 3) Identification of additional beach day-use capacity around Lake Britton that would increase the existing capacity by 100 people at one time and concentrate on enhancing existing sites or disturbed areas before any new locations are considered. Day use areas would include the following: (a) regularly maintained beach sand, if needed; (b) access to the shore designed to minimize erosion; (c) restrooms on site or nearby; (d) access by road or boat; (e) designated parking, if access is by road; (f) trash collection; and (g) regular monitoring by a host or PG&E employee;
 - 4) Addition of 25 percent more public overnight developed camping units over the life of the license (an increase of 39 sites); at least half of the capacity would be added during the first 10 years from license issuance and the balance within 15 years of license issuance; additions to capacity should be within the Project boundary or situated to enhance public access to Project lands and waters; new capacity would emphasize expansion of existing sites and use areas over the development of new sites and use areas;
 - 5) Establishment of a reservoir water surface zoning plan that documents existing speed zones and displays recommended changes; and
 - 6) Identification of measures to enhance the existing Jamo Point boat launch area, including: (a) designating parking spaces for vehicles with trailers; (b) providing a picnic table between the restroom and shoreline; (c) developing a potable water source at the Jamo Point boat launch or Pines picnic area, including an assessment of whether this source should be available on a year-round basis, to help improve the recreational user experience at this area; and (d) providing personnel at the Jamo Point boat launch area and Pines picnic area to provide trash removal and maintenance of restrooms during weekends from Labor Day through the end of September.

K. Include in the recreation management plan the following measures that pertain to the Pit River Canyon:

- 1) If the Shasta County ordinance prohibiting boating on the Pit 4 Reservoir is modified to allow public use by non-gasoline powered boats, address the most appropriate location for this access;
- 2) Provide a day-use access area at the Pit 5 or Tunnel Reservoirs;
- 3) Improve and provide adequate parking at Talus Siren by removing road debris piles on the south side of the road. Implement the following trail improvements to enhance access to the bypassed reaches at Powder Spur,

- Delucci Ridge, Rock Creek, Malinda Gulch, and Oak Flat in a manner that is consistent with the FS ROS objectives for this area, Roded Natural and Semi-Primitive Motorized: (a) erosion and sedimentation control measures; (b) stabilization of existing erosion sites; (c) provide signage to designate trails; (d) improve and provide adequate parking at each trailhead; (e) provide trailhead trash receptacles, as appropriate; and (f) provide sanitation facilities, as appropriate;
- 4) Develop spoil pile 4D, near the Pit 4 Dam, into a scenic canyon overlook vista and include in the design: (a) parking areas; (b) pathways; (c) interpretive signage, and (d) safety barriers at the edge of the steep slope, as needed; coordinate the design with the spoil pile management plan;
 - 5) Address the following issues that pertain to dispersed use along the Project bypassed reaches: (a) fire prevention; (b) sanitation; (c) parking; (d) unintended expansion of the area influenced by recreational use (site creep); (e) crowding; and (f) length of stay limits;
 - 6) Provide recreation-related improvements at Ruling Creek to include: (a) a vault toilet; (b) trash receptacles; (c) provisions to either remove or incorporate into the site design the piles of road debris; (d) realignment of the access road away from the river; (e) stabilization of riverbank erosion associated with the old roadbed; (f) designated camping and parking locations; (g) installation of metal fire rings; and (h) improvements of pedestrian access to the river; and
 - 7) Provide whitewater boater put in and take out sites at each of the three bypassed reaches, including: (a) on the Pit 3 Reach, improve egress from the river in the vicinity of the powerhouse; (b) on the Pit 4 Reach, improve egress from the river in the vicinity of the existing informal take-out at the Pit 4 Powerhouse, grade the parking lot, and provide a vault toilet; and (c) on the Pit 5 Reach, improve ingress to the river by improving access and providing additional parking in the vicinity of the existing informal put-in near Trailer Road, and at the take-out in the vicinity of the existing informal access just upstream of the Pit 5 Powerhouse, grade and gravel the parking area and provide a vault toilet.

APPENDIX B

PACIFIC SOUTHWEST REGION, USDA FOREST SERVICE
FINAL 4(e) TERMS AND CONDITIONS
NECESSARY FOR THE PROTECTION AND UTILIZATION OF THE
LASSEN AND SHASTA-TRINITY NATIONAL FORESTS

Pit 3, 4, and 5 HYDROELECTRIC PROJECT,
FERC No. 233

General

The Forest Service (FS) provides the following final 4(e) conditions for the Pit 3, 4, and 5 Hydroelectric Project, FERC No. 233 (Project), in accordance with 19 CFR 4.34(b)(1)(i).

License articles contained in the Federal Energy Regulatory Commission's (Commission) Standard Form L-1 (revised October 31, 1975) issued by Order No. 540, cover those general requirements that the Secretary of Agriculture, acting by and through the Forest Service, considers necessary for adequate protection and utilization of the land and related resources of the Shasta National Forest, as administered by the Lassen and Shasta-Trinity National Forests. Section 4(e) of the Federal Power Act states the Commission may issue a license for a project within a reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired. This is an independent threshold determination made by FERC, with the purpose of the reservation defined by the authorizing legislation or proclamation (see *Rainsong v. FERC*, 106 F.3d 269 (9th Cir. 1977)). The FS may rely on broader purposes than those contained in the original authorizing statutes and proclamations in prescribing conditions (see *California Edison v. FERC*, 116F.3d 507 (D.C. Cir. 1997))

Under authority of Section 4(e) of the Federal Power Act (16 U.S.C. 797(e)), the following terms and conditions are deemed necessary for adequate protection and utilization of the Shasta National Forest lands and resources. These terms and conditions are based on those resource and management requirements enumerated in the Organic Administration Act of 1897 (30 Stat. 11), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), and any

other law specifically establishing a unit of the National Forest System or prescribing the management thereof (such as the Wilderness Act or the Wild and Scenic Rivers Act), as such laws may be amended from time to time, and as implemented by regulations and approved Land and Resource Management Plans prepared in accordance with the National Forest Management Act. Specifically, the 4(e) conditions are based on the Land and Resource Management Plans (as amended) for the Lassen and Shasta-Trinity National Forests, as approved by the Regional Forester of the Pacific Southwest Region. Therefore, pursuant to section 4(e) of the Federal Power Act, the following conditions covering specific requirements for protection and utilization of National Forest System lands shall also be included in any license issued.

STANDARD CONDITIONS

Condition No. 1: Approval of Changes

Notwithstanding any license authorization to make changes to the project, when such changes directly affect National Forest System lands the Licensee shall obtain written approval from the Forest Service prior to making any changes in any constructed project features or facilities, or in the uses of project lands and waters or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the Forest Service, and a minimum of 60-days prior to initiating any such changes, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the Forest Service for such changes. The Licensee shall file an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This article does not relieve the Licensee from the amendment or other requirements of Article 2 or Article 3 of this license.

Condition No. 2 - Annual Consultation on Affected National Forest Resources

The Licensee shall consult with the Forest Service between January 10 and March 15 of each year in regard to measures needed to ensure protection and utilization of the National Forest System land and resources affected by the Project. Representatives from the US Fish and Wildlife Service, California Department of Fish and Game, or other interested agency representatives concerned with operation of the project may request to attend the meeting. Consultation shall include, but not be limited to:

- A status report regarding implementation of license conditions;

- Results of any monitoring studies performed over the previous year in formats agreed to by the Forest Service and the Licensee during development of study plans;
- Review of any non-routine maintenance;
- Discussion of any foreseeable changes to project facilities or features;
- Discussion of any necessary revisions or modifications to plans approved as part of this license;
- Discussion of report/log of Project patrol person and any actions taken or recommended, or coordination needed to correct any identified problems.
- Discussion of needed protection measures for species newly listed as threatened, endangered, or sensitive or, changes to existing management plans that may no longer be warranted due to delisting of species or, to incorporate new knowledge about a species requiring protection; and
- Discussion of elements of current year maintenance plans, e.g. road maintenance.

A record of the meeting shall be kept by the Licensee and shall include any recommendations made by the Forest Service for the protection of National Forest System lands (NFSL) and resources. The Licensee shall file the meeting record with the Commission no later than 60 days following the meeting. A copy of the certified record for the previous water year regarding instream flow and reservoir elevation records, reports of any out-of-season operational spills for that past year, monitoring reports, and other pertinent records shall be provided to the Forest Service at least 10 days prior to the meeting date, unless otherwise agreed.

Copies of other reports related to project safety and non-compliance shall be submitted to the Forest Service concurrently with submittal to the FERC. These include, but are not limited to: any non-compliance report filed by the licensee, geologic or seismic reports, and structural safety reports for facilities located on or affecting NFSL.

The Forest Service reserves the right, after notice and opportunity for comment, to require changes in the project and its operation through revision of the 4(e) conditions to accomplish protection and utilization of National Forest lands and resources.

Condition No. 3 - Maintenance of Improvements on or Affecting NFSL

The Licensee shall maintain all its improvements and premises on National Forest System lands (NFSL) to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the Forest Service. Disposal will be at an approved existing location, except as otherwise agreed by the Forest Service.

Condition No. 4 - Existing Claims on NFSL

The license shall be subject to all valid claims and existing rights.

Condition No. 5: Compliance with Regulations on NFSL

The Licensee shall comply with the regulations of the Department of Agriculture for activities on National Forest System lands, and all applicable Federal, State, county, and municipal laws, ordinances, or regulations in regards to the area or operations on or directly affecting National Forest System lands, to the extent those laws, ordinances or regulations are not preempted by federal law.

Condition No. 6 - Protection of United States Property

The Licensee shall exercise diligence in protecting from damage the land and property of the United States covered by and used in connection with this license, and shall pay the United States for any damage resulting from negligence or from the violation of the terms of this license or of any law or regulation applicable to the National Forests by the Licensee, or by any agents or employees of the Licensee acting within the scope of their agency or employment.

Condition No. 7: Surrender of License or Transfer of Ownership

Prior to any surrender of this license, the Licensee shall provide assurance acceptable to the Forest Service that Licensee shall restore any project area directly affecting National Forest System lands to a condition satisfactory to the Forest Service upon or after surrender of the license, as appropriate. To the extent restoration is required, Licensee shall prepare a restoration plan which shall identify the measures to be taken to restore such National Forest System lands and shall include adequate financial mechanisms to ensure performance of the restoration measures.

In the event of any transfer of the license or sale of the project, the Licensee shall assure that, in a manner satisfactory to the Forest Service, the Licensee or transferee will provide for the costs of surrender and restoration. If deemed necessary by the Forest Service to assist it in evaluating the Licensee's proposal, the Licensee shall conduct an analysis, using experts approved by the Forest Service, to estimate the potential costs associated with surrender and restoration of any project area directly affecting National Forest System lands to Forest Service specifications. In addition, the Forest Service may require the Licensee to pay for an independent audit of the transferee to assist the Forest Service

in determining whether the transferee has the financial ability to fund the surrender and restoration work specified in the analysis.

Condition No. 8 - Self Insurance

The Licensee shall indemnify, defend, and hold the United States harmless for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the Licensee in connection with the use and/or occupancy authorized by this license. This indemnification and hold harmless provision applies to any acts and omissions of the Licensee or the Licensee's heirs, assigns, agents, employees, affiliates, subsidiaries, fiduciaries, contractors, or lessees in connection with the use and/or occupancy authorized by this license which result in: (1) violations of any laws and regulations which are now or which may in the future become applicable, and including but not limited to environmental laws such as the Comprehensive Environmental Response Compensation and Liability Act, Resource Conservation and Recover Act, Oil Pollution Act, Clean Water Act, Clean Air Act; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous substances, pollutant, contaminant, or oil in any form in the environment.

Condition No. 9 – Damage to Lands of United States - High Hazard

The Licensee is hereby made liable for all injury, loss, or damage to the United States land and property, including but not limited to fire suppression costs, directly or indirectly resulting from or caused by the Licensee's power lines covered by this license, or any other high risk use and occupancy of the area covered by this license, regardless of whether the Licensee is negligent or otherwise at fault, provided that the maximum liability without fault shall not exceed \$1,000,000 for any one occurrence, and provided further that the Licensee shall not be liable when such injury, loss, or damage results wholly, or in part, from a negligent act of the United States, or from an act of a third party not involving the facilities of Licensee.

Determination of liability for injury, loss, or damage, including fire suppression costs, in excess of the specified maximum, shall be according to the laws governing ordinary negligence.

Condition No. 10: Risks and Hazards on National Forest System Lands (NFSL)

As part of the occupancy and use of the project area, the Licensee has a continuing responsibility to reasonably identify and report all known or observed hazardous conditions on or directly affecting National Forest System lands within the project

boundary that would affect the improvements, resources, or pose a risk of injury to individuals. Licensee will abate those conditions, except those caused by third parties or not related to the occupancy and use authorized by the License. Any non-emergency actions to abate such hazards on National Forest System lands shall be performed after consultation with the Forest Service. In emergency situations, the Licensee shall notify the Forest Service of its actions as soon as possible, but not more than 48 hours, after such actions have been taken. Whether or not the Forest Service is notified or provides consultation; the Licensee shall remain solely responsible for all abatement measures performed. Other hazards should be reported to the appropriate agency as soon as possible.

Condition No. 11 - Pesticide-Use Restrictions on NFSL

Pesticides shall not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, undesirable fish, etc., without the prior written approval of the Forest Service. The Licensee shall submit a request for approval of planned uses of pesticides. The request must cover annual planned use and be updated as required by the Forest Service. The Licensee shall provide information essential for review in the form specified by the Forest Service. Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the report was submitted. In such an instance, an emergency request and approval may be made.

The Licensee shall use on National Forest System land only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned. The Licensee shall strictly follow label instructions in the preparation and application of pesticides and disposal of excess materials and containers.

Condition No. 12: Access by the United States

The United States shall have unrestricted use of any road over which the Licensee has control within the project area for all purposes deemed necessary and desirable in connection with the protection, administration, management, and utilization of Federal lands or resources. When needed for the protection, administration, and management of Federal lands or resources the United States shall have the right to extend rights and privileges for use of the right-of-way and road thereon to States and local subdivisions thereof, as well as to other users. The United States shall control such use so as not to unreasonably interfere with the safety or security uses, or cause the Licensee to bear a

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share of costs disproportionate to the Licensee's use in comparison to the use of the road by others.

Condition No. 13 - Forest Service Reserves the Right to Revise Section 4(e) Conditions

The Forest Service reserves the right to modify final Section 4(e) conditions submitted to FERC for inclusion in the new license for the Pit 3, 4, & 5 Hydroelectric Project, FERC No.233, to resolve any conflict between: 1) 4(e) conditions and water quality certificate conditions issued by the State of California Department of Water Resources Control Board, or 2) in response to new terms and conditions imposed by the existing or revised U.S. Fish and Wildlife Service Biological Opinion issued for the relicensing of the Project.

Condition No. 14 – Coordination With Projects In The Pit River System

If license measures for the upstream and downstream projects, (McCloud-Pit, Project No. 2106; Hat 1 and 2, Project No. 2661; and Pit 1, Project No. 2687) require changes in operation of the Pit 3, 4, & 5 Hydroelectric Project, FERC No.233, the Forest Service reserves the right, after notice and opportunity for comment, to require changes in the project and its operation through revision of Section 4(e) conditions.

PROJECT SPECIFIC CONDITIONS - GENERAL**Condition No. 15 – Protection of Forest Service Special Status Species**

Before taking actions to construct new project features on NFSL (including, but not limited to, proposed recreation developments) that may affect Forest Service special status species (i.e. Forest Service sensitive, survey and manage, and management indicator species) or their critical habitat, the Licensee shall prepare a biological evaluation evaluating the potential impact of the action on the species or its habitat and submit it to the Forest Service for approval. In coordination with the Commission, the Forest Service may require mitigation measures for the protection of the affected species. Where required, the Licensee shall also provide a report to address impacts to survey and manage and management indicator species.

The biological evaluation shall

- Include procedures to minimize adverse effects to special status species.
- Ensure project-related activities shall meet restrictions included in site management plans for special status species.
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to special status species.

Condition No. 16 - Erosion and sediment control

The Licensee shall notify the Forest Service within 3 days in the event a project facility requires, or a project-related activity results in the need for emergency site stabilization, erosion protection, or sedimentation management and affects National Forest System land or resources. Any temporary measures necessary to stabilize the condition shall be implemented as soon as practicable and the Forest Service shall be informed of the steps taken. The Licensee shall obtain Forest Service approval prior to implementing any permanent remediation measures.

PROJECT SPECIFIC CONDITIONS – WATER RESOURCES**Condition No. 17 - Flow Regime for Affected NFSL****I. Minimum Instream Flow**

The Licensee shall, beginning as early as reasonably practicable and within 3 months after license issuance, maintain minimum streamflows as specified below for the Pit 3 and Pit 4 bypass reaches. Where facility modification is required to implement the

requirements of this measure, the Licensee shall complete such modifications as soon as reasonably practicable and no later than 3 years after license issuance. Prior to completion of such required facility modifications, the Licensee shall make a good faith effort to meet the requirements of the measure within the capabilities of the existing facilities.

The requirements of this measure are subject to temporary modification if required by equipment malfunction, emergency conditions or law enforcement activity, or critical electric system emergency beyond the control of the Licensee.

All required minimum streamflows listed below are the average of seven days of the mean daily flow. Individual mean daily flows may be less than the required minimum streamflow. The instantaneous, 15-minute streamflow must be at least 90 percent of the required minimum streamflow.

Pit 3 Reach Required Minimum Streamflow

For the Pit 3 reach, the spill event that triggers a change in required minimum streamflow is defined as a flow period in the reach that lasts at least three consecutive days and has a 3-day mean of more than 300 cfs (and a volume of at least 1,800 acre feet) above the required minimum streamflow for the Pit 3 reach. Streamflow in the Pit 3 reach shall be measured as the sum of spillway flow calculated from hourly reservoir elevation to account for spill volume and the hourly mean release from a calibrated release valve at the dam or by other means acceptable to the USGS. The Pit 3 dam spill release gates and valves shall be operated as described in the Reservoir Operations section of this Condition.

A. Summer/Fall Required Minimum Streamflow:

Summer is defined as the period extending from April 21 through August 31.

Fall is defined as the period extending from September 1 until the first spill, as defined above, after November 1 or until November 30, whichever is earlier.

If no spill occurs between November 1 and April 20, the required minimum streamflow shall remain at the summer value throughout the winter.

The required minimum streamflow during summer shall be 300 cfs.

The required minimum streamflow during fall shall be 280 cfs.

Following any spill, as defined above, between March 16 and June 15 the required minimum streamflow shall follow the flow regimen described in B. iv. below. Spills ending on or after June 16 shall be returned to the required summer minimum streamflow following the reservoir operation protocols.

B. Winter Required Minimum Streamflow:

As specified in the Reservoir Operation section of this Condition, the Licensee shall, within 24 hours following the cessation of the first spill event after November 1, but no later than December 1, fully deflate at least one of the Pit 3 Dam spillway bladder gates. At least one bladder gate shall remain deflated until the later of April 20 or until there is no flow passing the Pit 3 Dam in excess of the nominal required minimum streamflow for the Pit 3 reach. During this time period, the reservoir shall be operated so that the elevation of Lake Britton does not drop below 2,731.5 feet (NGVD) (2,751 feet, PG&E datum), as specified in the Reservoir Operations section of this Condition.

If a spill, as defined above, occurs after November 1 the required minimum streamflow following the cessation of the spill shall be 350 cfs. The required minimum streamflow shall remain at this rate until April 20 unless a spill occurs after March 15.

If no spill occurs between November 1 and April 20, the required minimum streamflow shall remain at the summer value throughout the winter.

If a spill, as defined above, occurs between March 16 and June 15, the required minimum streamflow following the cessation of the spill shall be 450 cfs for 14 days. The required minimum streamflow shall then be 400 cfs for the next 10 days and 350 cfs for 10 more days. Thereafter, the required minimum streamflow shall be set to the required summer minimum streamflow.

Pit 4 Required Minimum Streamflow

For the Pit 4 reach, the spill event that triggers a change in required minimum streamflow is defined as a streamflow period in the reach that lasts at least three consecutive days and has a 3-day mean of more than 300 cfs (and a volume of at least 1,800 acre feet) above

the required minimum streamflow for the Pit 4 reach. Streamflow in the Pit 4 reach shall be measured at USGS gage 11362500 (Licensee gage PH30). The Pit 4 dam gates shall be operated as described in the Reservoir Operations section of this Condition.

C. Summer/Fall Required Minimum Streamflow:

Summer is defined as the period extending from June 16 until August 31.

Fall is defined as the period extending from September 1 until the first spill, as defined above, after November 1 or until November 30, whichever is earlier.

If no spill occurs between November 1 and June 15, the required minimum streamflow shall remain at the summer value throughout the winter.

The required minimum streamflow during summer shall be 375 cfs.

The required minimum streamflow during Fall shall be 350 cfs.

Following any spill, as defined above, between March 16 and June 15 the required minimum streamflow shall follow the flow regimen described in D. iii. Spills ending on or after June 16 shall be returned to the required summer minimum streamflow following the reservoir operation protocols.

D. Winter Required Minimum Streamflow:

If a spill, as defined above, occurs after November 1, the required minimum streamflow following the cessation of the spill shall be 450 cfs. The required minimum streamflow shall remain at this value until June 15 unless a spill occurs after March 15.

If no spill occurs between November 1 and June 15, the required minimum streamflow shall remain at the summer value throughout the winter.

If a spill, as defined above, occurs after March 15, the required minimum streamflow after cessation of spill shall decline in three steps, as specified below, when mean daily streamflow at USGS gage 11362500 (Licensee gage PH30) reaches approximately 700 cfs. After completion of the specified flow schedule, the required minimum streamflow shall be the summer required minimum streamflow.

- a) From March 16 through April 30, the required minimum streamflow is 600 cfs;
- b) From May 1 through May 31, the required minimum streamflow is 550 cfs; and
- c) From June 1 through June 15, the required minimum streamflow is 500 cfs.

Spills ending on or after June 16 shall be returned to the required summer minimum streamflow following the reservoir operation protocols.

II. Instream Flow Measurement

The Licensee shall measure and document all instream flow releases in publicly available and readily accessible formats. For the purposes of measuring and documenting compliance with the required minimum instream flows in the Pit 3 and Pit 4 Project bypass reaches, the Licensee shall prepare and file with the Commission an Instream Flow Measurement Plan (Plan) that is approved by the Forest Service.

The Plan shall include a description of existing or proposed instream flow measurement gages or devices, including flow gages, spillway or reservoir outlet discharge measurement devices, etc., and a detailed proposal for measuring instream flow in each of the Project reaches with existing or proposed devices. The Plan must describe existing or proposed provisions for making mean daily flow data available to the public, and for making hourly and/or 15-minute gage data available to the Forest Service.

The Plan shall include evidence of gage calibration and historical and recent cross-section data, if applicable. The Licensee shall submit the Plan to the Forest Service as soon as practicable and no later than one year after license issuance and shall not begin construction of flow measurement devices or implementation of Plan elements until the Plan has been formally approved in writing from the Forest Service and filed with the Commission.

In the interim, prior to approval and implementation of the Plan, the Licensee shall maintain continual compliance with the Pit 4 minimum instream flow schedule at the existing Pit 4 reach gage (USGS gage 11362500 (PH 30)). There is presently no flow measurement device in the Pit 3 Project reach. Interim to implementation of the above Plan, compliance methodology for the Pit 3 bypass reach will jointly be agreed to by the Licensee and Forest Service based on the best available methods.

III. Ramping Rates

In order to prevent adverse effects due to rates of change in streamflow releases that are inconsistent with natural rates of streamflow variation, the Licensee shall follow the ramping rates specified below when making streamflow releases from Pit 3 and Pit 4 Dams unless a different ramping rate is specified in another measure. These ramping rates shall be implemented as soon as practicable after license issuance dependent upon facility capability.

A ramping rate is the rate of change in stream stage height over a time period, such as 0.5 foot/hour, that shall be followed in each hour, up or down. The allowable change in stage height is applied to the current hour streamflow value to get the next hour allowable streamflow value. The Licensee shall be deemed in compliance with the up and down ramping rate if at least 75 percent of the periodic changes are less than the specified ramping rate, and all of the periodic changes are less than 150 percent of the specified ramping rate.

Where facility modification is required to implement the requirements of this measure, the Licensee shall complete such modifications as soon as reasonably practicable and no later than 3 years after license issuance. Prior to completion of such required facility modifications, the Licensee shall make a good faith effort to meet the requirements of the measure within the capabilities of the existing facilities.

The requirements of this measure are subject to temporary modification if required by equipment malfunction, emergency and law enforcement activity, and critical electric system emergencies beyond the control of the Licensee.

Ramping Rate for Freshet Flow Releases: A freshet flow may be released in March of some years, and will consist of a 21-day flow event that is described in detail in the Freshet Flow Release measure. The ramping rate to reach the daily target values for freshet flows shall be 0.5 foot/hour, up and down.

Ramping Rate after Spills Influenced by Powerhouse Outages: As described in the Reservoir Operations section of this Condition, some spills may include, or be composed entirely of, flow that should be passing through a powerhouse but is released as spill due to a powerhouse outage. The Reservoir Operations measure specifies that when returning the powerhouse to full load, the daily decrease of such spills should not exceed 50 percent of the difference between the flow passing a dam and the required minimum streamflow for the reach. The final step to the required minimum streamflow can occur when the difference between the spill flow and required minimum streamflow is less than 200 cfs. The ramping rate for the

downstream reach shall be 0.5 foot/hour or less but one hour shall separate each step until the daily decrease in spill is reached.

Ramping Rate Before and After Out-of-Season Spills: As described in Condition 18, out-of-season spills past the Pit 3 and Pit 4 Dams may occur during summer and fall. In some cases, the Licensee may be able to anticipate that an out-of-season spill is imminent because the storage capacity of the affected reservoir will be exceeded. In this case, the Licensee shall make a good faith effort to initiate streamflow releases that ramp up to the expected spill rate in at least three steps.

The out-of-season spill shall be ramped down at a rate that is dependent on the duration of the spill. If the spill was less than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot/hour. If the spill was longer than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot/hour, but one hour shall separate each step so that the down ramp is more gradual.

Ramping Rate for Recreation Streamflow Releases: The ramping rate up and down for recreation streamflow releases shall be 0.5 foot/hour or less. Both up and down ramping steps shall be separated by one hour until the specified recreation streamflow release (ramp up) or the required minimum streamflow (ramp down) is reached.

Ramping Rate for Changes in Required Minimum Streamflow: Because the magnitude of changes in required minimum streamflow is less than the change in streamflow associated with a 0.5-foot change in stage height, no ramping is required for these changes in streamflow releases.

IV. Freshet Flow Release

In order to assure that a flow sufficient to maintain channel conditions and maintain the riparian community will occur at a frequency of at least every second year, the Licensee shall make freshet flow releases into the Pit 3 and Pit 4 reaches as described below. Project reaches shall be considered separately and independently when determining if a freshet flow is required. The Licensee shall not initiate a freshet flow in the Pit 4 reach if mean daily water temperature at USGS gage 11362500 (Licensee gage PH30), exceeds 11° C for two consecutive days in the two-week period prior to the scheduled initiation of the freshet flow. The trigger for not initiating a freshet flow in the Pit 4 reach may be modified with approval of the FS in consultation with CDFG, FWS, and SWRCB, based on ecological results achieved with the above temperature trigger.

The following planning events and action shall be implemented each year:

If, as of January 1 of each year, there has been no spill, as defined below, in the previous 15 months into a given Project-affected river reach, the Licensee shall notify the FS and interested parties that there is a potential need for a freshet flow release for that reach during the upcoming March.

If no spill has occurred as per item 1, the Licensee shall post, following the provisions in License Condition 26, "Recreation Management Plan" under the "Streamflow Information" section, a notice prior to February 15, of a planned freshet flow for that reach beginning between March 1 and March 7, scheduled so that the peak flow occurs over a weekend to facilitate whitewater boating opportunities. Additionally, the Licensee shall notify the community of Big Bend and the Big Bend Rancheria.

A freshet flow shall have the following characteristics: the duration of the event including the flow increase and decrease and the peak must be at least 21 days in length; the instantaneous peak flow magnitude must be at least 1,500 cfs, and there must be a 2-day average flow of at least 1,500 cfs. After the peak, streamflow shall decrease in five approximately equal steps of magnitude and duration over the remaining days of the freshet period, ending at the winter required minimum streamflow for the reach.

For the purposes of this measure, spill is defined as streamflow event at a Project dam during the 17 months prior to the March 1 freshet flow implementation date that meets all of the following characteristics: occurs between December 1 and May 31; has a cumulative volume of at least 25,000 ac-ft; has a cumulative duration of at least 21 days; and has at least two average daily flows exceeding 1,500 cfs. Spill may be made up of natural and released flows.

The requirements of this measure are subject to temporary modification if required by equipment malfunction, emergency conditions or law enforcement activity, or critical electric system emergency beyond the control of the Licensee.

Where facility modification is required to implement the requirements of this measure, the Licensee shall complete such modifications as soon as reasonably practicable and no later than 3 years after license issuance. Prior to completion of such required facility modifications, the Licensee shall make a good faith effort to meet the requirements of the measure within the capabilities of the existing facilities.

V. Reservoir Operations

In order to allow spills from Project reservoirs to increase and decrease at a rate resembling the natural unimpaired condition, the Licensee shall, beginning as early as

reasonably practicable and no later than 6 months after license issuance, operate Project dams, reservoirs, and powerhouses according to the operation protocols specified below.

The requirements of this measure are subject to temporary modification if required by equipment malfunction, emergency conditions or law enforcement activity, or critical electric system emergency beyond the control of the Licensee. The Licensee shall notify the FS, CDFG, and SWRCB prior to any temporary modification, and shall notify these agencies within 48 hours that any temporary modification has occurred.

Where facility modification is required to implement the requirements of this measure, the Licensee shall complete such modifications as soon as reasonably practicable and no later than 3 years after license issuance. Prior to completion of such required facility modifications, the Licensee shall make a good faith effort to meet the requirements of the measure within the capabilities of the existing facilities.

For the purposes of this measure, a spill event is defined as a flow period that lasts at least three consecutive days and has a 3-day mean of more than 300 cfs (and a volume of at least 1,800 acre feet) above the required minimum streamflow.

Operation Protocols for Pit 3 Dam, Lake Britton, and Pit 3 Powerhouse

The year-round minimum water surface elevation of Lake Britton shall be 2,731.5 feet (NGVD) (2,751 feet, PG&E datum).

Each year, within 24 hours following the cessation of the first spill event after November 1, but no later than December 1, at least one of the Pit 3 Dam spillway bladder gates shall be kept in the fully deflated position.

The Licensee shall take reasonable care to prevent a sudden release of flow when deflating the bladder gates if the bladder gates must be deflated as per item 2 above and Lake Britton surface elevation is at 2,732.5 feet (NGVD) (2,752 feet, PG&E datum) or higher with the bladder gates inflated.

During the period from December 1 through at least April 20 of each year, Lake Britton elevations shall be maintained between 2,731.5 and 2,733.5 feet (NGVD) (2,751 and 2,753 feet, PG&E datum) to the greatest extent practicable by regulating flow through the Pit 3 Powerhouse.

At least one of the Pit 3 Dam spillway bladder gates shall remain deflated until April 20 or until there is no flow passing the Pit 3 Dam in excess of the required minimum streamflow for the Pit 3 reach, whichever is later.

The maximum allowable Lake Britton water surface elevation shall be 2,735.5 feet (NGVD) (2,755 feet, PG&E datum) between April 21 and the Saturday preceding Memorial Day weekend.

The maximum normal water surface elevation of Lake Britton shall increase to 2,737.5 feet (NGVD) (2,757 feet, PG&E datum) on the Saturday preceding Memorial Day Weekend or until there is no streamflow passing the Pit 3 Dam in excess of the required minimum streamflow for the Pit 3 reach, whichever is later.

If after April 20, and after the streamflow in the Pit 3 reach has receded to the minimum required streamflow, the inflow to Lake Britton increases to a magnitude that requires deflation of a bladder gate to keep the elevation of Lake Britton within the levels specified above, the bladder gate shall remain deflated until streamflow in the Pit 3 reach recedes to the required minimum streamflow.

If the Pit 3 Powerhouse is operating at less than full load during a spill event, and is able to return to full load, the Licensee shall utilize the following protocol to prevent a rapid cessation of spill when increasing powerhouse load:

Powerhouse load shall be increased in steps;
Each step shall not exceed 50 percent of the streamflow passing Pit 3 dam in excess of the required minimum streamflow for the Pit 3 reach; and
There shall be at least a 24-hour interval between steps.

This protocol applies until the Pit 3 Powerhouse reaches full load or the rate of streamflow passing Pit 3 Dam is less than 200 cfs above the required minimum streamflow for the Pit 3 reach. If the powerhouse is not at full load at this point, the streamflow passing the Pit 3 dam may be reduced to the required minimum streamflow.

Operation Protocols for Pit 4 Dam, Pit 4 Reservoir, and Pit 4 Powerhouse

The normal operating elevation for Pit 4 Reservoir shall be between 2,415.5 feet and 2,422.5 feet (NGVD) (2,435 feet and 2,442 feet, PG&E datum).

During periods of increasing inflow to Pit 4 Reservoir, the following steps shall be taken, to the extent necessary, and in the sequence indicated, until inflow ceases to increase:

1. As inflow to Pit 4 Reservoir increases, Pit 4 Powerhouse load shall be ramped up to match inflow, up to full powerhouse load.

2. If inflow to Pit 4 Reservoir continues to increase, and the reservoir water surface elevation reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), the #1 low-level outlet gate shall be fully opened. As the #1 low-level outlet gate is opened streamflow shall be transferred smoothly from spill to release. The minimum streamflow release valve shall be closed to prevent plugging with sediment or debris.
3. Step 2 above shall be repeated as required for each of the remaining two low-level outlets gates.
4. If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), all three low-level outlets shall be closed and the #2 spillway drum gate shall be lowered, smoothly transferring the release from the low-level outlets to the open spillway.
5. If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step 2 above shall be repeated until all three low level outlets are opened or inflow ceases to increase.
6. If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 (NGVD) feet (2,443.7 feet, PG&E datum), step number 4 shall be repeated for the #1 spillway drum gate.
7. Further inflow increases shall be allowed to pass through the spillway.

In order to minimize flow pulses during the recession of spill flow and after inflow has reached a peak and inflow to Pit 4 Reservoir is decreasing, the Licensee shall take the following actions in the sequence listed, beginning with the action corresponding to the actual peak inflow:

As inflow to the reservoir declines, and the water surface elevation drops to 2,422.5 feet (NGVD) (2,442.0 feet, PG&E datum), the # 3 low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.

As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), the # 2 spillway drum gate shall be raised and all three low-level outlets shall be opened, smoothly transferring a portion of the spill flow to release flow.

As inflow to the reservoir continues to decline, and the water surface elevation again drops to approximately 2,422.5 feet (NVGD) (2,442.0 feet, PG&E datum), the # 3 low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.

As inflow to the reservoir continues to decline, and the water surface drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), the #1 spillway drum gate shall be raised and all low-level outlets shall again be opened, smoothly transferring spill flow to release flow.

As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,422.5 feet (NVGD) (2,442.0 feet, PG&E datum), the #3 low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.

As the # 1 low-level outlet is closed, the minimum streamflow release valve shall be opened to the appropriate required minimum streamflow release setting.

If the Pit 4 Powerhouse is operating at less than full load during a spill event, and is able to return to full load, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse load by utilizing the following protocol:

Powerhouse load shall be increased in steps;
Each step shall not exceed 50 percent of the flow passing Pit 4 dam in excess of the required minimum streamflow for the Pit 4 reach; and
There shall be at least a 24-hour interval between steps.

This protocol applies until the powerhouse reaches full load or the rate of streamflow passing Pit 4 Dam is less than 200 cfs above the required minimum streamflow for the Pit 4 reach. If the powerhouse is not at full load at this point, the streamflow passing the Pit 4 dam may be reduced to the required minimum streamflow.

Condition No. 18 – Management of Spill Events Affecting NFS Resources

During the license term, the Licensee shall provide written notification to the Forest Service 90 days prior to any planned or scheduled maintenance outages in the Pit 3 and 4 Project bypassed reaches. The notification shall include a description of Project and coordinated measures the Licensee plans to take to minimize the magnitude and duration of resulting spills into the Project reaches, and appropriate selection of the seasonal

timing of the planned outage spill to lessen negative ecological effects. The Licensee shall not proceed with the planned maintenance outage without the formal written approval of the Forest Service.

The Licensee shall operate the Project in a manner that does not result in discretionary, out-of-season spill flows in excess of twice the required minimum required streamflow at Pit 3 Dam and Pit 4 Dam. An out-of-season spill is defined as a spill that occurs during the normally non-spill summer and fall period. In order to avoid such spills, the Licensee shall take all reasonable controllable actions, which shall include, as a first priority, utilization of Project storage.

In the event an out-of-season spill occurs, the Licensee shall take reasonable controllable actions to minimize the magnitude, duration, and potential adverse ecological impacts of such spill. Such actions shall include, to the extent practicable, ramping the spill flow up and down as described in the Ramping Rates measure. In the event a discretionary out-of-season spill occurs, the Licensee shall develop, through consultation with FS, CDFG, SWRCB, and FWS, and implement reasonable actions to mitigate for identified adverse ecological impacts of such spill. The Licensee shall not be required by this measure to provide mitigation for impacts reasonably related to recreation streamflow releases. The Licensee shall prepare, maintain, and on an annual basis provide to FERC, FS, CDFG, SWRCB, and FWS a record of any out-of-season spills, identifying the affected reach, hourly discharge, the maximum flow magnitude, dates and duration, and cause of spill.

Where facility modification is required to implement the requirements of this measure, the Licensee shall complete such modifications as soon as reasonably practicable and no later than 3 years after license issuance. Prior to completion of such required facility modifications, the Licensee shall make a good faith effort to meet the requirements of the measure within the capabilities of the existing facilities.

The requirements of this measure are subject to temporary modification if required by equipment malfunction that directly results in non-discretionary spills, emergency and law enforcement activity, and critical electric system emergencies beyond the control of the Licensee. Further, this measure does not apply to any required recreation streamflow releases.

Condition No. 19 - Reservoir and Afterbay Dredging Affecting NFSL

In the event it is necessary to dredge any project forebay or reservoir, the Licensee shall hold an initial consultation meeting with the Forest Service at least 90 days prior to any anticipated dredging to determine if there is a potential to impact National Forest System

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lands or resources. Following consultation with the Forest Service the Licensee shall develop a plan which at a minimum shall include:

- The reason for dredging,
- A description of material to be dredged,
- Approximate quantities of dredged material,
- Selected method of dredging along with alternatives considered,
- Location of any disposal sites considered,
- Mitigation measures and disposal site stabilization plans, and
- Schedule

Forest Service approval will be required before implementation of any dredging that affects NFS lands or resources. Documentation of correspondence with the Forest Service shall also be filed with the Commission prior to implementation of any dredging activity.

In addition the Licensee shall consult with the California Department of Fish and Game, State Water Resources Control Board, Fish and Wildlife Service, and U.S. Army Corps of Engineers and obtain any necessary approvals before proceeding.

PROJECT SPECIFIC CONDITIONS –RESOURCE PLANS

Condition No. 20 – Land Resource Plans for Mitigating Project Effects to NFS Resources

Within the timeframes described below, and in consultation with applicable Federal and State agencies, the Licensee shall file with the Commission Land Resource Plans that are approved by the Forest Service, as they relate to resource management on the National Forest. The plans shall include:

- a. Tunnel Spoil Pile Management Plan
- b. Fire Management And Response Plan
- c. Visual Management Plan
- d. Sign Plan

a. Tunnel Spoil Pile Management Plan

The Licensee shall within one year of license issuance prepare a tunnel spoil pile management plan to address existing and future spoil originating from project construction on NFSL. At a minimum the plan shall address the following for piles of native material approved by the Forest Service to be left on NFSL:

General:

- Stabilization/erosion control (using only certified weed-free straw),
- Revegetation,
- Noxious weed management,
- Foreign material treatment, including removal of visible non-native materials,
- Monitoring of water quality (as per pre-licensing study protocol) and adherence to BMPs,
- Consideration of visual quality,
- Utilization of material (especially Pit 4 valve house site #4P), and
- Other measures (i.e. recreational overlook improvements at Pit 4 dam site #4D dispersed camping at the Adit Pile #4A, road closure #4D).

Specifically:

- Spoil Pile site #4P (at Pit 4 powerhouse) management : (This is the only site located on NFSL currently considered for disposal of project related native materials including dirt, rocks, and vegetation, but not asphalt or other non-native wastes).
 - a. Develop a stabilization/rehabilitation plan for the site incorporating future placement of road spoils from project roads, site leveling, slope revegetation, and other erosion prevention measures.
 - b. Show the current site (after above work considered) and calculations showing the amount of material the site could hold for future spoils placement.
 - c. Include a final pit plan including reclamation that shall also be submitted to Shasta County for compliance with Surface Mining and Reclamation Act (SMARA) regulations.
 - d. Additional visual mitigations may be necessary if this site is additionally used as a vista point for the public.

The Licensee shall prepare the plan after consultation with the Forest Service, State Water Resources Control Board, California Department of Fish and Game, and Pit River Tribe.

Upon Commission approval, the Licensee shall implement the plan.

b. Fire Management and Response Plan

Within six months of license issuance the Licensee shall file with the Commission a Fire Management and Response Plan developed in consultation with the Forest Service, California Department of Forestry and Fire Protection, and the Big Bend Volunteer Fire Department. At a minimum the plan shall address the following categories:

- 1) Fuels treatment/Vegetation Management
 - Identification of fire hazard reduction measures to prevent the escape of project-induced fires.
- 2) Public awareness
 - Develop public awareness such as signs and brochures to educate the public about fire danger and safety
- 3) Prevention
 - Availability of fire access roads, community road escape routes, helispots to allow aerial firefighting assistance in the steep canyon, water drafting sites and other fire suppression strategies.
 - Develop fire prevention restrictions based on fire danger that are consistent with adjacent public land ownership for project-induced recreation on Licensee lands.
 - Address fire danger and public safety associated with project induced recreation, including fire danger associated with dispersed camping, existing and proposed developed recreation sites, trails, and vehicle access.
- 4) Emergency response preparedness
 - Analyze fire prevention needs including equipment and personnel availability including fire patrols.
- 5) Reporting
 - Provide the Forest Service a list of the location of available fire prevention equipment and the location and availability of fire prevention personnel.
 - Licensee shall report any project related fires to the Forest Service as soon as practicable.
- 6) Fire control/extinguishing

Include appropriate measures from the Vegetation Management Plan condition and assure fire prevention measures will meet water quality BMPs. Upon Commission approval, the Licensee shall implement the plan.

c. Visual Management Plan

Within 1 year of license issuance, the Licensee shall file with the Commission a Visual Management Plan that is approved by the Forest Service for any NFS lands that are visually affected by the Project. As a minimum the Plan shall address:

- Clearings, spoil piles, and project facilities, such as diversion structures, penstocks, pipes, ditches, powerhouses, other buildings, transmission lines, corridors, and access roads.
- Facility configurations, alignments, building materials, colors, landscaping, and screening.

- An Implementation schedule to bring the project facilities into compliance with applicable National Forest Land and Resource Management Plan direction.
- Mitigation measures that shall include, but are not limited to:
 - Surface treatments with colors and materials that are in harmony with the surrounding landscape.
 - Use of native plant species to screen facilities from view, where appropriate.
 - Reshaping and revegetating disturbed areas to blend with surrounding scenic characteristics.
 - Development of scenic overlooks along scenic routes.
 - Removal of project induced debris piles which detract from the visual quality.
 - General maintenance and upkeep of facilities.

Upon Commission approval, the Licensee shall implement the plan.

d. Sign Plan

The Licensee shall prepare in consultation with the Forest Service, State Parks, and other interested parties, within one year of license issuance, a Sign Plan that shall conform to the Manual of Uniform Traffic Control Devices, Forest Service sign handbook, and other applicable standards. As a minimum the Plan is to include the location, design, size, color, and message for the following types of signs:

- Information and education signs
- Fire Prevention signs
- Regulatory and warning signs
- Project license signs
- Road signs
- Recreation signs
- Directional signs to assist non-local visitors
- Safety signs
- Sign format/consistency throughout project

The Plan shall also address maintenance standards so that all signs are maintained in a neat and presentable condition. Signs which are to be placed on National Forest System lands shall be approved by the Forest Service. The Licensee shall not be required to consult or obtain the prior approval of the Forest Service for signs on Licensee owned land that are not visible from National Forest System lands.

Upon Commission approval, the Licensee shall implement the plan.

Condition No. 21 - Gravel Management and Woody Debris Plans to Benefit NFS Resources

The Licensee shall develop and file with the Commission within one year of license issuance, a Gravel Management Plan and a woody debris routing procedure that is approved by the Forest Service.

1. Gravel Management Plan:

Gravel augmentation shall require the addition of a minimum of 624 tons of gravel at a maximum cost of \$15,000 per reach per year for materials and placement (adjusted annually for inflation at the consumer price index (CPI) rate). The gravels to be used are to be clean, rounded and ranging in size from approximately 8-64 mm with a median size of approximately 25-35 mm.

At a minimum, the Gravel Management Plan shall:

- Identify proposed gravel placement locations near the upstream end of the reaches or at other agreed upon locations.
- Identify facilities necessary for the placement of gravel. Cost for these facilities shall be in addition to the materials and placement costs identified above.
- Include an adaptive management component to allow non-delivery of gravels in non-spill years or in years when spill is insufficient to mobilize the gravels from the placement sites.

The plan shall also include a monitoring component that is integrated into the Biological Monitoring Plan in Condition 23 in terms of species surveyed, timelines, and cost. The monitoring component shall include at a minimum: 1) pre-augmentation monitoring the first 4 years (or for a time period consistent with the Biological Monitoring Plan) after license issuance, 2) post augmentation monitoring the year augmentation occurs, and 3) periodic monitoring every 4 years (or a period consistent with the Biological Monitoring Plan) for the life of the license. Monitoring shall evaluate the physical changes from gravel augmentation and biological population trends of species that are affected by the gravels, specifically trout, hardhead, and macroinvertebrates. The monitoring shall be conducted in agreed upon transects located in all river reaches, but not throughout the entire length of the river reaches.

During the Annual Consultation Meeting required by Condition 2, the Forest Service will review monitoring results and discuss any needed changes to the Gravel Plan.

2. Large Woody Debris Management Plan

Licensee shall develop and implement an operating procedure to facilitate the passage of woody debris over the Pit 3 spillway during spill events. The Licensee shall provide the Forest Service a copy of the documentation for the procedure for approval.

Condition No. 22 - Water Quality and Temperature Monitoring Plan for Affected NFSL

The Licensee shall within one year of license issuance develop a water quality monitoring plan to assess the affects of new instream flows on water quality in project reservoirs and project affected river reaches on National Forest System lands. The water quality monitoring plan elements shall at a minimum include but not necessarily be limited to:

- Continuous water temperature monitoring,
- Periodic measurements of dissolved oxygen,
- Periodic Lake Britton temperature and dissolved oxygen profiles,
- Documentation of procedures used to meet water-related Best Management Practices (BMPs).

The Licensee shall prepare the plan after consultation with the Forest Service, State Water Resources Control Board, California Department of Fish and Game, and U.S. Fish and Wildlife Service.

The Licensee shall include with the plan documentation of agency consultation, copies of comments and recommendations of the completed plan after it has been prepared and provided to agencies, and specific description of how agencies' comments are accommodated by the plan.

Upon Commission approval, the Licensee shall implement the plan.

Condition No. 23 –Biological Resources Management Plans for Mitigating Project Effects to NFS Resources

The plan components discussed below should be combined, as appropriate, to facilitate monitoring efficiency and cost effectiveness. The plans should incorporate monitoring elements from other Resource Conditions including Condition 21 (Gravel augmentation), Condition 22 (Water quality monitoring), and Condition 26 (Recreation) and include Forest Service approval for affected NFS resources. The implementation schedules shall

also be coordinated so that the various components of biological resource monitoring are coordinated in time and location.

a. Biological Resources Program Technical Review Group

Licensee shall, within 3 months of issuance of a new project license, establish a Biological Resources Program Technical Review Group (TRG) for the purpose of: a) consulting with the Licensee in the design of management and monitoring plans, b) review and evaluation of data, and c) developing adaptive management or other recommendations, as required by Conditions No. 17, 21, 22, 23, and 26. The TRG will be composed at a minimum, of specialists from the Forest Service, California Department of Fish and Game, California State Water Resources Control Board, Fish and Wildlife Service (FWS), National Park Service (NPS), the Pit 3, 4, & 5 Project Licensee, Tribal Governments, and NGO's whom have expressed an interest in participating. The group's meetings will be open to the public. The Licensee shall maintain and make public, records of consultation, and shall forward those records with any recommendations to the appropriate agencies and the Commission. The group shall establish communication protocols to facilitate interaction between group members, which allow for open participation, peer review, and communication between all parties.

b. Fish population trend and condition monitoring in project reservoirs and river reaches

Within six months of license issuance the Licensee shall in consultation with the TRG prepare a plan for monitoring fish population trends and fish condition factors in the Pit 3 and 4 Project bypassed reaches and reservoirs. At a minimum the monitoring plan shall identify which species are to be monitored, sampling and data analysis protocols, and reporting schedules. The monitoring shall be consistent with pre-licensing studies for comparative purposes and shall attempt to standardize sampling protocol to ensure comparability of results. Sampling shall occur at least once every three years (or for a period determined by the TRG to be sufficient that is consistent with other monitoring requirements) during the first decade after license issuance and then at least once every four years thereafter. Additionally, the Licensee shall conduct benthic macroinvertebrate population robustness, feeding group and tolerance/intolerance trend monitoring in the Pit 3 and 4 bypassed reaches on a schedule recommended by the TRG.

An element of the plan shall include an adaptive management strategy to incorporate an entrainment study if needed. Prior to initiation of an entrainment study, the results of fish population trend monitoring results would need to indicate, either directly or

indirectly, that ongoing entrainment may be a significant contributing factor toward a substantive downward trend in the affected species' populations. If a trend towards listing is indicated for FS special status species, the Licensee shall discuss with the TRG the possible initiation of statistically meaningful entrainment studies. The studies would follow procedures developed by the Licensee and agreed to by the Forest Service and other consulting agencies and will occur at the Pit 3 and Pit 4 tailraces.

A draft technical report shall be prepared following completion of each sampling effort. In addition to describing the results, the report is to compare results with those of previous surveys. The fish-based sampling shall discuss implications regarding trends in fish abundances, trends for entrained FS special status fish species, changes to bald eagle prey species, and any indication that bass are moving into project reaches. The benthic macroinvertebrate sampling report shall discuss any changes over time regarding the composition of functional feeding groups, overall population heterogeneity and robustness, and pollution tolerance/intolerance trends.

Upon Commission approval, the Licensee shall implement the plan.

c. Foothill Yellow-Legged Frog (FYLF) Monitoring Plan:

Within one year of license issuance the Licensee shall in consultation with the TRG prepare a foothill yellow-legged frog (*Rana boylei*) monitoring plan. The Plan and schedule shall include the following two phases: 1) An initial annual study period (length to be determined by the TRG during review of information at annual consultation meetings, but for at least four years), following initiation of the new flow regime required by this license. 2) Incremental monitoring of FYLF every 4 years (unless revision is recommended by the TRG) after the completion of the initial study period. Do not use previously identified potential breeding sites in this monitoring, unless actual breeding activity has occurred at that site.

At a minimum the two phases of the study should include and/or address, but not be limited to, the following:

- Surveys for Foothill yellow-legged frog distribution in the Pit 4 Reach throughout the spring and summer to determine presence and life stage development as well as distribution or presence of Cascades Frogs and/or FYLFs in the Pit 3 reach.
- A more thorough search during the spring breeding season to identify population centers / breeding sites (other than Deep Creek) and count numbers of clutches found.
- Descriptions of the physical features of all identified frog breeding sites including substrate, water temperatures at the onset of egg deposition, vegetative cover,

water velocities at egg deposition sites, canopy categories, patch size, channel habitat type, evidence of predation, etc.

- Determination of whether changes in instream flows result in breeding in newly inundated margins, or utilization of old sites that are now deeper.
- Assessments of whether the new breeding sites: 1) connect with the summer lower flow channel; 2) remain as disconnected off channel water bodies; or 3) dry up entirely.
- Return visits to breeding sites and adjacent low flow areas that may be tadpole-rearing habitat to assess survival of tadpoles to metamorphosis. Beginning after hatching of larvae, revisit a subset of breeding sites every 3 weeks to determine survival and time of metamorphosis. To ensure comparability of density estimates, time and area constrained searches shall be used. This monitoring data will also be relevant to determining timing of young of the year population metamorphosis (full tail reabsorption).
- Estimates of the number of adults at the onset of breeding at each breeding site.
- Monitoring of the time from egg deposition to hatching.
- Monitoring of tadpole numbers and life stage development using K. L. Gossner (1960) life stage categories.
- Monitoring of water temperatures annually in March through May to determine at what temperature breeding initiates and terminates. This information shall be developed into a predictive tool in future years to avoid untimely spills or flow fluctuations that could detrimentally affect FYLF recruitment.
- Determination of whether the high tadpole mortality observed in 2002 was due to a water quality factor or predation. Predator-free tadpole enclosures shall be established at relatively remote sites (unlikely to be found by anglers) to monitor survival.
- Include the component under “Vegetation Management Plan” for removal of overhead canopy.
- Take advantage of non-planned spring/summer high flow events to determine any correlation between these spill events and changes in tadpole or metamorph numbers from years when these events did not occur.
- Take advantage of the naturally (or project induced) receding spring hydrograph to determine flow vectors at known breeding sites and their changes with flows.
- Observations where no activity has occurred (i.e. “zero data”).
- Reporting of survey & monitoring results.

Upon Commission approval, the Licensee shall implement the plan.

d. Western Pond Turtle (WPT) Monitoring Plan

Within one year of license issuance the Licensee shall prepare a Western Pond Turtle (*Clemys marmorata*) monitoring plan in consultation with the TRG. At a minimum the study should address:

- Establishment of a study schedule including an initial study phase for a defined period of time and follow-up monitoring on a defined schedule, as for FYLF above.
- WPT distribution within the project.
- Estimate of age distribution of the turtle population.
- Reporting of results to resource agencies.

Upon Commission approval, the Licensee shall implement the plan.

e. Interagency Bald Eagle Management Plan

Within six months of license issuance, the Licensee shall convene a collaborative team composed of the Fish and Wildlife Service, FS, California Department of Fish and Game, the California Water Quality Control Board, and Pit River Tribe to revise and update the Interagency Bald Eagle Management Plan as needed. The plan shall at a minimum consider and address the following elements:

- 1) Annual monitoring of nest productivity
- 2) Identification of disturbance factors and appropriate actions needed to minimize disturbances including recreational use, project operations, timber harvest, road maintenance, etc. Consider actions such as:
 - Buffer zones around each known nest territory.
 - Potential water surface zoning of project reservoirs with respect to watercraft use.
 - Limited operating periods for industrial operations, recreational activities, or other disturbances identified.
- 3) Coordination of Licensee and Forest Service land management activities within bald eagle nest territories in the Project area, such as timber harvest, mining, woodcutting, etc.
- 4) Periodic monitoring, in conjunction with recreation monitoring, of human use patterns to discern human/bald eagle interaction conflicts, including monitoring of watercraft use on areas of Lake Britton near nests.

The plan shall be submitted to the Commission within two years of license issuance. Upon Commission approval, the Licensee shall implement the plan.

f. Terrestrial Wildlife Mitigation & Monitoring plan:

Within one year of license issuance the Licensee shall prepare in consultation with the TRG a wildlife mitigation and monitoring plan to monitor terrestrial Forest Service special status species (i.e. Forest Service sensitive, survey and manage, and management indicator species) on National Forest System lands directly affected by Project operations. At a minimum, the plan shall include and address the following monitoring elements:

- Occupation and population trends at five-year intervals (or an interval recommended by the TRG) of the Lake Britton bank swallow colonies.
- Annual monitoring of known peregrine falcon nest territories, surveys of potential peregrine falcon nesting habitats within or adjacent to the project area for new nesting territories until it is determined in consultation with the TRG that monitoring is no longer necessary. Unless modified during the development of this plan, a Limited Operating Period (LOP) shall be in effect from February 1 to August 15 from the nest site to a distance of $\frac{1}{2}$ to $\frac{3}{4}$ mile out from the nest (dependant upon Forest Service biological evaluation of the site). The LOP would apply to those activities that could be scheduled including regular maintenance actions and irregular activities, such as the testing of sirens or cutting of hazard trees along roads and powerlines. The LOP does not apply to emergency actions.
- Periodic monitoring as determined by the TRG throughout the period of the license to determine if Townsend's big-eared bats or other special status bats utilize Project facilities.
- Reporting of survey and monitoring results.

Mitigation measures to be implemented by the Licensee include:

- Continuation of the speed restriction zone at Upper Lake Britton, west of the gasline crossing where it currently exists.
- If goshawks are found during pre-disturbance surveys, limit operating periods around the active nest site (200 acres) from February 1 through August 15 or until the young have fledged.

- Protection of known sites of survey and manage molluscs (categories A, D, and E).
- Within one year of license issuance the Licensee shall design and install a gate on the Pit 4 Tunnel Adit that will allow bat passage and prevent public access to the tunnel. The Licensee shall obtain Forest Service approval concerning the design and timing of the installation.
- The Licensee shall conduct pre-construction surveys for Forest Service special status species. The surveys shall follow standard approved protocols or protocols approved by the Forest Service if no standard protocol exist at the time. The results of the surveys shall be utilized to determine mitigation measures necessary to protect Forest Service sensitive species.

Upon Commission approval, the Licensee shall implement the Plan.

g. Vegetation & Invasive Weed Management Plan

Within two years of license issuance, the Licensee shall file with the Commission a Vegetation and Invasive Weed Management Plan developed in consultation with the Forest Service, the appropriate County Agricultural Commissioner and California Department of Food and Agriculture. Invasive weeds will be those weeds defined in the California Food and Agriculture code, and other species identified by the Forest Service. The plan will address both aquatic and terrestrial Invasive weeds within the project boundary and adjacent to project features directly affecting National Forest System lands including, roads, and distribution and transmission lines.

1) The Invasive Weed Plan will include and address the following elements:

- Inventory and mapping of new populations of Invasive weeds using a Forest Service compatible database and GIS software. The Invasive weed GIS data layer will be updated periodically and shared with resource agencies.
- Action and/or strategies to prevent and control spread of known populations or introductions of new populations, such as vehicle/equipment wash stations.
- Development of a schedule for control of all known A, B, Q and selected other rated invasive weed species, designated by resource agencies.

- On-going annual monitoring of known populations of Invasive weeds for the life of the license in locations tied to project actions or effects, such as road maintenance, at project facilities, O&M activities, new construction sites, etc. to evaluate the effectiveness of re-vegetation and Invasive weed control measures.
- The plan will include an adaptive management element to implement methods for prevention of aquatic Invasive weeds, as necessary. These actions may include, but may not be limited to: 1) public education and signing of public boat access, 2) preparation of an Aquatic Plant Management Plan approved by the Forest Service, and in consultation with other agencies, and 3) boat cleaning stations at boat ramps for the removal of aquatic Invasive weeds.

New infestations of A& B rated weeds shall be controlled within 12 months of detection or as soon as is practical and feasible (A, B, C, & Q ratings refer to the California Department of Food & Agriculture Action Oriented Pest Rating System). At specific sites where other objectives need to be met all classes of Invasive weeds may be required to be treated.

Monitoring will be done in conjunction with other project maintenance and resource surveys, so as not to require separate travel and personnel. Monitoring information, in database and GIS formats, will be provided to the Forest Service as part of the annual consultation on affected National Forest resources (Condition No. 2). To assist with this monitoring requirement, training in invasive plant identification will be provided to project employees and contractors by the Forest Service.

Licensee shall restore/revegetate areas where treatment has eliminated Invasive weeds in an effort to eliminate the reintroduction of Invasive weed species. Project-induced ground disturbing activities shall be monitored annually for the first 3 years after disturbance to detect and map new populations of Invasive weeds.

2) The Vegetation Management plan shall include and/or address the following elements:

- Hazard tree removal and trimming;
- Powerline/transmission line clearing;
- Vegetation management for habitat improvement
- Revegetation of disturbed sites;
- Soil protection and erosion control, including use of certified weed free straw;
- Establishment of and/or revegetation with culturally important plant populations; and

- Use clean, weed free seed with a preference for locally collected seed.

Timing of activities shall account for limited operating periods for peregrine falcons, bald eagles, and northern goshawks (refer to Conditions 23 (e) and 23 (f)).

Upon Commission approval, the Licensee shall implement the plan.

Condition No. 24 – Cultural Resources Management Plan

The Licensee shall file with the Commission, within one year following license issuance, a Cultural Resources Management Plan (CRMP), approved by the Forest Service, for the purpose of protecting and interpreting heritage resources. The CRMP is tiered to a Programmatic Agreement, to which the Forest Service will be a signatory, as defined by 36 CFR 800, and implements regulations of the National Historic Preservation Act. The Licensee shall consult with the State Historic Preservation Officer, Native American Tribes, Forest Service, and other applicable agencies and communities during the preparation of the Plan. The CRMP shall accurately define the area of potential effects, including effects of implementing Section 4(e) conditions, and shall take into account Project effects on the National Register Lake Britton Archaeological District, National Register properties, Native American traditional cultural values, and Project-induced recreational impacts to archaeological properties on or affecting National Forest System lands. The CRMP shall also provide measures to mitigate the identified impacts, including a monitoring program, a patrolling program, and management protocols for the ongoing protection of archaeological properties.

The new National Register Nomination for the Lake Britton Archaeological District shall be filed within one year of license issuance. If, prior to or during ground-disturbing activities or as a result of project operations, items of potential cultural, historical, archaeological, or paleontological value are reported or discovered, or a known deposit of such items is disturbed on National Forest System lands, the Licensee shall immediately cease work in the area affected. The Licensee shall then: (1) consult with the California State Historic Preservation Officer (SHPO) and the Forest Service about the discovery; (2) prepare a site-specific plan, including a schedule, to evaluate the significance of the find and to avoid or mitigate any impacts to sites found eligible for inclusion in the National Register of Historic Places; (3) base the site-specific plan on recommendations of the SHPO, the Forest Service, and Secretary of the Interior's Standards and guidelines for Archaeology and Historic Preservation; (4) file the site specific plan for Commission approval, together with the written comments of the SHPO and the Forest Service; and (5) take the necessary steps to protect the sites from further impact until informed by the Commission that the requirements have been fulfilled.

Upon Commission approval, the Licensee shall implement the plan.

Condition No. 25 - Project Patrol for Resource Protection of NFS Lands

Within one year of license issuance the Licensee shall, after review by the Forest Service, file with the Commission a plan for providing a full time patrol of the Project, including National Forest System lands within the project area or affected by project facilities, for purposes of resource protection. At a minimum the plan shall provide for routine and regular physical inspections of affected lands, project facilities, and structures including implemented protection, mitigation and enhancement measures and the provisions of the Cultural Resources Management Plan required by the Project license. The plan shall also include a description of reporting responsibilities including observed violations of laws and communications with law enforcement agencies as well as required documentation of inspections.

Condition No. 26 - Recreation Management Plan

Within one year of license issuance the Licensee shall file with the Commission a Recreation Management Plan (RMP) developed in consultation with the Forest Service, National Park Service, California Department of Parks and Recreation, the US Fish and Wildlife Service, California Department of Fish and Game, State Water Resources Control Board, the Pit River Tribe, and other interested parties. The purpose of this plan is to mitigate for, and manage impacts to NFS lands in and near the project, to assist users of all abilities in accessing opportunities in the project area and associated facilities, to manage potential impacts to NFS lands due to overcrowding and displacement of visitors to areas with sensitive resources. The Licensee shall obtain Forest Service approval on the components of the Plan which affect NFS lands and final designs for any facilities on National Forest System lands prior to submitting to the Commission for approval. After Commission approval, the Licensee shall implement the Plan. At a minimum, the RMP shall address the following specifying location, design, structure, and schedules for completion:

Recreation Facilities Maintenance, Improvement, and Expansion

General

Licensee will consider sensitive resources in consideration of location, design, and construction timing for all actions below. This includes, but is not limited to, limited operating periods for peregrine falcons, bald eagles, and goshawks, noxious weed precautions, location of cultural resources, and visual quality impacts.

Lake Britton Developed sites:

1) Dusty Campground - On a schedule approved by the Forest Service, Licensee shall

improve the existing facility as follows:

- a. Add picnic tables to all campsites; ADA campsite should have an appropriate style picnic table to accommodate wheelchairs.
- b. Modify one campsite and adjacent restroom for accessibility, install ADA signage, and construct an accessible path for lake access consistent with federal ADA standards.
- c. Addition of up to 4 more overnight sites.
- d. Maintenance and expansion of beach areas.
- e. Designation of a swim area.
- f. Provide potable water.
- g. Better define the parking areas for day use to help with overcrowding issues and parking competition with overnight users; Licensee to monitor the day-use parking and encourage compliance with any limitations; in consultation with the Forest Service, consider charging a parking fee.
- h. In coordination with the Interpretive and Education Plan, provide information to users about alternative sites for overnight camping and for day-use opportunities at and near the Project.

Licensee shall continue to operate the campground under agreement with the Forest Service.

2) Jamo Boat Ramp – within two years of license issuance, in order to improve access for visitors to the National Forest areas of the project, Licensee shall, in consultation with the Forest Service,

- a. Designate parking spaces for vehicles with trailers using signs and asphalt markings. Require site host or other Licensee employees to monitor for compliance.
- b. Provide a convenience picnic table between the restroom and the shoreline. Evaluate the use of this convenience table during high use season and, should it cause the launch ramp area to become more congested, consult with the Forest Service and interested stakeholders about repositioning or removal.
- c. Improve the existing boat ramp and the fishing platform to increase accessibility. Use guidelines in “Accessible ramps and boarding platforms for boaters” report (Tech Rep. 0023-2837-MTDC) and the ADA Accessibility Guidelines for Buildings and Facilities; Recreation Facilities (36 CFR Part 1191) or other updated guidelines as applicable;

- d. Provide a potable water source at this site or Pines Picnic Area that can be accessed by recreationists at all times.
- 3) **Day-Use Opportunities** – The Licensee shall provide additional day-use capacity around Lake Britton, specifically beach day use areas, in consultation with the Forest Service and other interested parties. This will help mitigate existing and prevent future negative impacts to National Forest resources. The Licensee should concentrate on enhancing existing sites/disturbed areas before any new locations are considered. The amount of capacity shall increase by 100 People at one time (PAOT) within 3 years of license issuance since day-use beach areas are currently reaching capacity. Possible locations include the existing Pines Picnic Area, the North Ferry Crossing, and North Shore Campground. Day use areas shall include the following features:
- Any new day-use beach area shall have regularly maintained beach sand if needed,
 - access to the shore designed to minimize erosion,
 - restrooms on site or nearby,
 - access by road or boat,
 - designated parking if access is by road,
 - trash collection, and
 - regular monitoring by a host or Licensee employee.
- 4) **New Overnight Capacity** – Licensee shall provide 25% more public overnight developed camping units over the life of the license (an increase of 39 sites). At least half of that capacity shall be added in the first 10-year period and the balance provided within 15 years of license issuance. New overnight sites in this provision should reflect the current or planned development level of an existing campground. Any new campgrounds will be development level 4 or 5. Additions to capacity should be within the project boundary or, within a 1-1/2 mile radius of the project waters. New capacity shall emphasize expansion of existing sites/use areas over development of new sites/use areas. An existing site is defined as a designated and managed recreation site containing man-made improvements. A use area is defined as an area being heavily utilized by the public such that its natural character has been heavily impacted. Examples are loss of vegetation due to parking and trampling, existence of makeshift facilities such as campfire rings, shelters, sanitation; considerable evidence of trash.

Lake Britton Dispersed sites

In order to manage recreational access by visitors to NFS lands and mitigate negative impacts to National Forest resources, the Licensee within 5 years of license issuance, shall:

- Improve usability of the car-top boat launch at the gas line crossing by improving the road into the site to a Forest Service maintenance level 3 or higher and adding sanitation measures;
- Close parking area 6 on the north side of the lake,
- Maintain recreational pedestrian access to National Forest System lands and Licensee lands on the south side of Hat Creek.

Licensee shall also work with the Forest Service and interested parties to develop measures to maintain and upgrade existing trails around Lake Britton, including Clark Creek Falls Trail, in order to decrease erosion and increase usability.

Pit 3 and Pit 4 Reaches:

In areas accessed by project facilities or affected by the project, the Licensee shall, in consultation with the Forest Service, include in the Recreation Management Plan a section addressing general dispersed areas. This section should specifically speak to opportunities and problems unique to the Pit reaches such as fire prevention, sanitation, parking, “site creep”, crowding, and length of stay limits.

Developments and Improvements – Except where otherwise noted, within 3 years of license issuance, the Licensee shall provide the following improvements:

1) Trails and trailheads

- Construct a 10-vehicle trailhead parking lot at Powder Spur and improve the parking at the Talus Siren site by removing debris to level the area.
- Provide potable water, sanitation, and trash collection to at least one location in each reach.
- Construct and maintain, to standards acceptable to the Forest Service, river-access hiking trails at Powder Spur, Delucci, Rock Creek, Malinda Gulch, and Oak Flat or at other locations as agreed to by the Forest Service. Trails shall be designed and maintained to accommodate foot traffic, alleviate erosion, and improve hiker safety.
- Trailhead parking at each trail listed above shall be improved to provide for a level parking surface that does not intrude into the roadway. Signing designating the trails and parking will be installed and maintained.

2) Pit 4 Reservoir public access

- Pursue a change in the County ordinance to allow public boating use, limited to non-motorized boats, battery powered trolling motor boats, and float tubes and, include a 5 mph speed limit.
 - Sign and modify the unimproved boat ramp at the Pit 4 reservoir currently used by the Licensee in order to accommodate any new use permitted under Shasta County ordinance.
 - Improve the Pit 4 reservoir boat ramp site by adding picnic tables and trash collection.
- 3) Whitewater boating access**
- Develop and maintain two whitewater boating access points in each river reach consisting of a “put in” and “take out”. Access points can be coordinated with other developments listed above.
- 4) New day-use fishing access at Pit 3 Powerhouse**
- Design and construct a day-use fishing access near the Pit 3 powerhouse. The site shall have ADA accessible fishing access, a toilet, potable water nearby, trash collection, and improved parking. In addition to facilities to be designed and constructed, Licensee shall work with the Forest Service and CDF&G in this vicinity so that the Day Use Area will not conflict with the designated Wild Trout Fishery regulations.
- 5) Pit 4 Reach Scenic Overlook**
- Develop a site plan to convert the existing 240,000 cubic yard spoil pile #4D covering 3.35 acres on NFSL into a scenic canyon overlook. The Licensee shall cease any further use of this site as a disposal site. The site plan shall include measures that address:
 - Removal of all non-native materials visible on the surface of this pile.
 - Stabilization and erosion control to prevent further erosion into the active river channel and avoid further collapse of the southern canyon wall.
 - Implementation of Forest Service Road Management Objectives (RMO’s) to modify the road on the back of the pile that accesses the river (see License Condition #27 Roads).
 - Revegetation with native plants, and control of star thistle invasion.
 - Design and construction of parking and viewing area for scenic overlook.
 - Appropriate interpretation as coordinated with the Interpretation and Education plan.
 - A sampling plan for 5 years of testing at annual intervals to ensure there are no longer hazardous materials in the pile that are leaching into the ecosystem, unless completed tests can

conclusively demonstrate that there are no hazardous materials buried in the pile. If hazardous materials are later discovered in the pile, the Forest Service reserves the right to require the Licensee to clean up or totally remove this pile.

6) Ruling Creek Dispersed Camping Area

- Licensee shall develop and implement a site improvement plan consistent with the Recreation Opportunity Spectrum (ROS) for the Ruling Creek Dispersed Camping Area. At a minimum, the plan shall include or address the following elements:
 - Installation and maintenance of a portable, accessible, vault-style toilet (such as a CXT toilet);
 - Creation of camping/parking locations;
 - Installation of metal fire rings;
 - Improved pedestrian access to the river;
 - Implementation of invasive weed mitigations as coordinated with the invasive weed management plan;
 - Elimination of the use of the site as spoil pile disposal area;
 - Removal from or incorporation of existing road spoil material into site design for this recreation site;
 - Relocation of existing roadbed away from rivers edge, with new road location based on recreational access needs; and
 - Erosion control/stabilization measures for site disturbance and relocation of the existing roadbed.
 - Develop river access, incorporating universal design principles to the extent possible while staying within the ROS class for the Pit River at one of the following sites: the Ruling Creek Dispersed Area, the Gravel Bar site, or at another location in the Pit 4 reach as approved by the Forest Service after consultation with other interested parties.

Water Surface Access and Management

Within one year of license issuance and, in consultation with the Forest Service and other interested stakeholders, the Licensee shall do the following:

Lake Britton: move the “no boating” buoy line at the Ferry Crossing as close as is practicable to the dam to increase the lake area available to recreational watercraft.

Reservoir Water Surface Zoning Plan: create a plan which documents existing speed zones and displays recommended changes. The Licensee shall recommend

changes in county ordinances for Shasta County approval to implement a speed management zone for the newly opened area (above), request a change in the Highway 89 bridge “no ski” zoning to a 5 mph speed limit from the bridge to the end of the narrow channel (“the narrows”), and, Licensee shall seek no changes to the existing 5 mph speed restriction in Upper Lake Britton/Hat Creek area. Licensee shall pursue with the county additional modifications recommended during annual monitoring meetings or, as the result of other license planning efforts.

Pit 4 Reservoir: plan and recommend changes in county ordinances for Shasta County approval to open the Pit 4 reservoir to non-motorized boats, battery powered trolling motor boats, and float tubes between August 1 and December 31.

Information, Education, and Interpretation Plan

Within two years of license issuance the Licensee shall file with the Commission a Plan to provide for Information, Education, and Interpretation (I&E Plan) needs of the project developed in consultation with the Forest Service, California Department of Parks and Recreation, National Park Service, US Fish and Wildlife Service, California Department of Fish and Game, the Pit River Tribe and interested parties. At a minimum, the I&E Plan shall include themes, design, audience, delivery methods, and a schedule for implementation. The Forest Service will approve information displayed on NFSL.

Specific projects include:

- Informational kiosks at 5 Corners, Pit 3 powerhouse, Big Bend Interagency Fire Station, Jamo Boat Ramp, or other locations, as agreed.
- Interpretive or orientation signs at Hwy 299 and the Red Cinder Road, Hwy 299 and Sand Pit Road, Pit 3 dam, Big Bend road and Pit 5 Powerhouse Road, 5 Corners, Pit 4 dam scenic overlook, or other locations as agreed.
- Brochures and Website information should be coordinated with non-recreation resource areas and could include topics as: Watchable wildlife, Endangered wildlife, fisheries, protection of cultural resources, history and prehistory of the area, project operations, noxious weeds, proper recreational behavior (Leave no Trace), and Fire Prevention.

Streamflow Information

The Licensee shall, beginning as soon as reasonably feasible and no later than one year after license issuance make available to the public the recreation streamflow information listed below. Unless otherwise noted, the streamflow information shall be available to the public via toll-free phone and Internet, which may be accomplished through a third party. The streamflow information protocols may be modified upon mutual agreement of the Licensee, Forest Service, and responsive stakeholders, and acceptance by FERC. The following information shall be made available:

- a. The hourly average streamflow in the Pit River below each of the Pit 3 and Pit 4 dams for the current day and the past seven days. The flow information may be measured, calculated or a combination of the two. The flow information shall be posted within four hours of collection. Streamflows shall be rounded up to the nearest 50 cfs, and all plots and tables showing these data shall be labeled: "These provisional data have not been reviewed or edited, and may be subject to significant change."
- b. By January 5, the proposed dates and magnitude for any freshet flow, if applicable, planned to be provided by the Licensee, with updates by February 15 and within two days of any changes in plans.
- c. By July 1, the proposed dates for any recreation streamflow releases, with updates at least two weeks and one week in advance of each proposed date. The Licensee shall also notify the community of Big Bend and the Big Bend Rancheria of any recreational streamflow releases.

In addition, the Licensee shall, as soon as reasonably feasible and no later than two years after license issuance, install and maintain one simple staff gage/depth indicator at the following locations: Licensee gage PH30 below Pit 4 Dam, Licensee gage PH27 at Big Bend Bridge, and provided a suitable location is identified in consultation with FS and American Whitewater, below Pit 3 Dam. The Licensee shall make a good faith effort to locate the staff gages/depth indicators near public access locations so they are easily accessible for public reference. The Licensee shall provide a means at each staff gage/depth indicator to reasonably correlate staff gage/depth indicator readings to cfs.

Recreation Monitoring and Reporting Plan - Within one year of license issuance, the Licensee shall, in consultation with the Forest Service, California Department of Parks and Recreation, National Park Service, US Fish and Wildlife Service, and

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the Water Quality Control Board, complete a Recreation Monitoring and Reporting Plan (RMRP) as follows:

1. The RMRP shall include but not be limited to monitoring changes in kinds of use and use patterns on water surfaces and land, user surveys as to preferences in recreational activities, kinds, and sizes of recreational vehicles including boats, preference for day use versus overnight use, and recreation user trends within the project area. In addition, the Licensee shall periodically monitor boat use numbers, activity types, and use areas from Memorial Weekend through Labor Day on all areas of Lake Britton. Licensee shall work with the Forest Service and other interested stakeholders to determine the methodology for the data collection including frequency and location.

2. On a time schedule to coincide with the FERC "Form 80" report, the Licensee shall produce a Report on Recreational Resources which will summarize the information above. The Report shall include a summary of regional and statewide trends in recreation based on available surveys and reports. Survey methods shall be reviewed and approved by the Forest Service, and other interested stakeholders prior to implementation. The Report on Recreational Resources shall also comply with the Commission's regulations at 18 CFR Section 8.11 (Form 80) and shall be filed with the Commission after consultation with Forest Service and other interested stakeholders. The Forest Service reserves the right, after notice and opportunity for comment and administrative review, to require changes in the project and its operation through revision of the 4(e) conditions that require measures necessary to accomplish protection and utilization of National Forest resources identified as a result of those surveys.

3. Licensee shall, every six years (coinciding with the Commission's recreation inspection schedule), consult with the Forest Service, appropriate agencies, and interested stakeholders to review and adjust project-wide recreation management objectives. This consultation shall take the form of an in-person meeting within reasonable distance to the project. This meeting could be coordinated with the Annual Consultation meeting required in Condition #2. This review shall be based on the Report on Recreational Resources and any other results from law enforcement monitoring, and other applicable study and monitoring results. The Report and other monitoring results shall be made available to the agencies and interested stakeholders not less than 15 days prior to the scheduled meeting. The review shall address, as a minimum, the following factors:
 - Capacity; including developed and dispersed sites, roads, trails, water bodies, and river reaches,
 - Kinds and condition of facilities,
 - Kinds, quality, quantity, and range of opportunities,
 - Health and safety,
 - User and resource conflicts,
 - Discussion of possible strategies and adjustments to management of facilities and dispersed areas in order to mitigate negative impacts, and
 - Changes in ADA guidelines and possible modifications to facilities planned or constructed.

Recreational improvements in the project reaches shall be considered every six years through adaptive management using trend data and reports in conjunction with user satisfaction surveys, capacity use figures, and identification of

resource impacts as a basis for change. Changes could include expanding or improving existing recreational areas, developing new areas, changing management requirements, limiting use, closing roads, or other measures as determined appropriate to provide for the recreational needs commensurate with the resource values.

Condition No. 27 – Roads and Facilities Management Plan

Within one year of license issuance the Licensee shall file with the Commission a Roads and Transportation Facilities Management Plan for National Forest system roads or Project roads affecting NF resources. The plan shall incorporate FS standards (i.e. FS manuals and handbooks) for design, construction, operation, and maintenance and be approved by the Forest Service. Upon Commission approval, the Licensee shall implement the Plan and actions specified therein. At a minimum the Roads and Transportation Facilities Management Plan shall include the following:

A. Road Planning:

- A map(s) compatible with FS Travel Routes database showing all project and non-project roads, culverts, bridges, drainages, watering sources, disposal sites for organic materials, and disposal sites for surplus rock and soil from road maintenance within and adjacent to the project boundary including designation of use, season of operation, and public use.
- Identification of the uses (i.e. recreation, facility access) of the roads, and season of operation.
- An inventory of road and road facilities conditions including any construction or maintenance needs.
- Description of the types of materials allowed to be disposed of in the spoil pile.
- Description of how organic materials will be treated.
- Soil protection and erosion control measures including revegetation of disturbed sites and spoil piles to avoid noxious weed infestation and erosion (using only certified weed-free straw).
- A Water Quality Monitoring Plan that includes runoff management.
- A Traffic Safety plan.
- An adaptive management component to allow changes should use or standards necessitate.

B. Project Road Rehabilitation.

General Items:

- Include limited operating periods (LOPs) for sensitive wildlife resources when planning rehabilitation projects (see Condition 23 (f) as well as provisions to prevent the infestation and spread of noxious weeds (Condition 23 (g)).
- Develop a road rehabilitation implementation schedule to bring existing roads and associated facilities (i.e. culverts, gates, bridges, crossings, cribwalls, etc.) into compliance with Forest Service standards that achieve the Forest Service's Road Management Objectives (RMOs) for each road as listed in TABLE 1 (below). The schedule shall bring existing roads into compliance within 5 years of license issuance, with health and safety items shall be completed within the first year of implementation, water passage for resource objectives within the second year of implementation, road surfacing items within the third year of implementation, and all lower priority projects in year four and five after license issuance. Specifically:
 - Construct and maintain crossings to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
 - Prevent chronic erosion to stream channels by installing proper drainage e.g. French drains, outsloping, rolling dips, waterbars, etc.
 - Provide for fish passage and proper stream function for all stream crossings that are identified as fish habitat areas.
 - All intermittent and perennial stream crossings shall accommodate a 100-year storm event and associated bedload and debris. Provide hydrologic information to verify calculations where requested by Forest Service.
 - All bridges shall be replaced or reconstructed to conform to AASHTO Standard specifications for Highway Bridges (latest edition) including guardrails. All bridge approaches must be paved to 50 feet either side.
 - Gates on NFS lands shall comply with FS standards for construction and signing.
 - Replace rotting log parking barriers with standard parking barrier devices, e.g. guardrails, concrete stops, etc.
 - Removal of all road spoil piles not currently located in approved areas on NFSL to a location either off the Forest, or to a Forest Service approved disposal site. Removal area shall be revegetated with approved native (locally collected) seed to reduce invasion of noxious weeds. Monitor and eradicate noxious weeds as specified in the "Noxious Weeds Management Plan" license condition.
 - Reconstruct project roads to meet Forest Service road standards consistent with "Road Management Objectives", including shoulders, installing additional turnouts (with material matching that of the main roadbed), reconstructing sharp curves to meet standards for clearance and sight distance, and stabilizing cutbanks/fillslopes with cribwalls and other

retaining structures to prevent road failure and excessive sedimentation to waterways.

Specific Items:

- At Ruling Creek curve, stabilize the riverbank to protect the road from failure at flood flows.
- Expand existing paved road from the Pit 3 Powerhouse (M.P. 5.8) to the Gravel Bar turn-off in the Pit 4 reach (M.P. 8.8).
- Bring the Pit 3 and 4 reach roads into compliance with above general conditions and Forest Service RMO's.

C. Road Operation & Maintenance (O&M):

- Develop an annual road operation and maintenance schedule for on-going needs to maintain Project roads on NFSL to comply with Forest Service standards and RMOs.
- Complete normal maintenance activities on an annual basis including: repair and replacement of damaged culverts identified in road logs, removal of existing vegetation to allow adequate sight distances, etc.
- Include any required LOPs for wildlife species and noxious weed prevention provisions in planning and performing maintenance activities.

Specific Items:

- Traffic use surveys shall be scheduled on a 6-year basis at Forest Service specified locations to determine the number and type of vehicles per day, describe study periods and reporting requirements, and to determine use trends. A minimum of 60 survey days/year shall be required. A road capacity and use review shall be conducted every 10 years to determine if the roads continue to meet current road management objectives.

Off-Highway Vehicle (OHV) and Vehicle Management Plan –

The Licensee shall within one year of the license issuance develop an Off-Highway Vehicle (OHV) and Vehicle Management plan in consultation with the Forest Service and the Pit River Tribe. At a minimum, the plan shall include:

- Identification of existing use patterns creating resource damage within the project area, including archaeological site disturbance.

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- Restrictions and controls including seasonal closures to protect sensitive resources such as bald eagles, cultural resources, upland oak and riparian habitats.
- Rehabilitation of areas damaged by OHV use.
- Specifically address the Hat Creek Fishing barrier area where resource disturbance is occurring on Project lands and adjacent National Forest System lands, and the need for any permanent road closures.

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Table 1 – Pit 3 and 4 Project Roads which are on or affecting NFSL

Road Name	FS Road Number	Location	Remarks
Pit 3 Reach Road	37N60Y	From 5 Corners to Pit 3 PH (Lassen National Forest-LNF))	Update Road Maintenance Objectives (RMO), Under special use permit
Rock Creek Penstock Road	37N60YA	From Pit 3 Reach Road to Penstock crossing (LNF)	RMO, Rolling dips
Pit 3 Surge Tank Road	360209UC01	Road behind Pit 3 powerhouse to surge tank (LNF)	Need to GPS road location. Need RMO.
River Road (Pit 4 Reach Road), FS#50	37N60Y	From Pit 3 PH to Pit 4 PH (Shasta-Trinity National Forest- STNF)	Needs RMO
Pit 4 Reservoir Spur 01	37N60Y A & B	Spurs extending north from Pit 4 reservoir in Township 36N, R2E, sections 4 & 9 (STNF)	Need RMO, possible disposal pile site.
Pit 4 Dam Spoil Pile Road	360208UC01	From Pit 4 Reach Road to the river on top of spoil pile #4D (STNF)	Need RMO
Ruling Creek Dispersed Site Road	360217UC01	From River Road (Pit 4 Reach Rd) through the Ruling Creek dispersed area (STNF)	Need RMO
Big Pine Deer Camp Road	360217UC03	From Pit 4 Reach Rd west of Ruling Creek into Big Pine Deer Camp (STNF)	FS System Road Level 2, need RMO
Gravel Bar Road	360217UC02	Off the Pit 4 Reach Rd just west of Pit 4 gage station (STNF)	Need RMO
Pit 4 Valve House Road	360115UC01	From Pit 4 Reach Rd to spoil pile #4P near Pit 4 Valve House (STNF)	Need RMO
Pit 4 Surge Tank Road	360115UC02	Spur from Valve House road to Pit 4 surge tank (STNF)	Need RMO.
North Shore Campground Road	37N61	From Clark Creek Road to North Shore Campground (LNF)	Under special use permit, needs RMO. Needs larger CG sign.
Dusty Campground Rd	37N59Y	From Hwy 89 through Dusty Campground (LNF)	Needs RMO. "Trailers not recommended" sign.
Lower Hat	36N09	From Hwy 299 to Hat Creek	Needs RMO

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Creek "Loop" Road		parking area adjacent to Hat Creek Fish Barrier (LNF)	
Bald Eagle Mgt Area Road	37N59Y	Between Warner Grade Road and Dusty CG, extension of FS road 37N59Y (LNF)	Closed at both ends – Level 1 road RMO needed
Gas Line Drafting Road	360312UC01	Road to the water drafting site on south side of Pit River near the PG&E DE mine (LNF)	Need RMO

APPENDIX C
U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL OPINION
INCIDENTAL TAKE STATEMENT

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the bald eagle:

1. Minimize the effects of Project impacts on the bald eagle throughout the Project area.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Commission must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. The Commission shall implement the proposed action as described in the DEIS, except as modified by terms and conditions below.
2. The Commission shall ensure that the licensee complies with the following terms and conditions implementing reasonable and prudent measure number one:
 - A. Within six months of license issuance, the licensee shall begin the revision of the IBEMP, in cooperation with the Service, and other interested stakeholders. This plan will be updated every 5 years in consultation with the Service and other interested stakeholders. The plan will be completed within 2 years of license issuance, and filed with the Commission for approval.
 - B. Within one year of license issuance, the licensee shall file with the Commission, for approval, a water quality monitoring plan, in cooperation with the Service, and other interested stakeholders. The plan shall include, but not be limited to, sampling of water, sediment, invertebrates, and fish, with the appropriate temporal, spatial, and taxonomic composition to adequately represent conditions. The plan should also be designed to adequately characterize areas of methylmercury production, as well as mercury loading into the ecosystem. The former goal should include a focus on identifying those aspects of Project operations and management that may affect methylmercury dynamics in the Lake Britton ecosystem.

- C. Within one year of license issuance, the licensee shall file with the Commission, for approval, a fire management and response plan, developed in coordination with the Service and other stakeholders. The plan shall include, but not be limited to, measures for fuel treatments, prevention, and emergency response procedures as they pertain to the bald eagle.
- D. For any future actions the Commission proposes to take under the license or future actions to amend the license that may affect listed species, the Commission shall consult with the Service pursuant to Section 7.
- E. Any new owners of lands in the Project area previously owned by the licensee, including holders of any conservation easements must agree in writing to abide by the Terms and Conditions of this biological opinion.
- F. All protective measures described in the DEIS for the northern spotted owl and valley elderberry longhorn beetle will be fully implemented and enforced.

The Commission shall ensure compliance with the Reporting Requirements below.

Reporting Requirements

The Sacramento Fish and Wildlife Office is to be notified within three working days of the finding of any listed species not addressed in this biological opinion or any unanticipated harm to the bald eagle. The Service contact person for this the Division Chief for Endangered Species at (916) 414-6600. Quarterly or annual written reports (as appropriate) on the status of compliance with reasonable and prudent measures, terms and conditions, and conservation recommendations should be submitted to the Service.