

BATTLE CREEK HYDROELECTRIC PROJECT

FERC NO. 1121

LICENSE AMENDMENT APPLICATION

APPENDIX 4

PROPOSED LICENSE ARTICLES

**Proposed Ordering Paragraphs and License Conditions
for the Battle Creek Project License Amendment**

The Commission orders:

(A) Pacific Gas and Electric Company's (PG&E's) application to amend its license for the Battle Creek Project to implement Phase 1A of the Battle Creek Salmon and Steelhead Restoration Project as described in Appendix A attached to this Order (Phase 1A) is approved subject to the conditions specified herein. PG&E is hereby authorized to enter into an agreement(s) with the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), to utilize the services of Reclamation to implement any component of Phase 1A. Any such agreement must contain provisions specifying that Reclamation activities implementing Phase 1A are subject to the terms and conditions hereof and applicable regulations and orders of the Commission, and that PG&E may at any time have access to project lands and facilities to ensure compliance with said terms, conditions, regulations, and orders. Notwithstanding the foregoing, the responsibility for complying with said terms, conditions, regulations, and orders remains with PG&E.

(B) The implementation of Phase 1A activities is subject to: (1) the conditions of the water quality certification issued on ___ by the California State Water Resources Control Board pursuant to section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1) (attached as Appendix B to this Order); (2) the Reasonable and Prudent Measures and Terms and Conditions of the Biological Opinion issued on June 20, 2005, by the U.S. Fish and Wildlife Service (USFWS) (attached as Appendix C to this Order); (3) the Reasonable and Prudent Measures and Terms and Conditions of the Biological Opinion issued on June 22, 2005, by the National Marine Fisheries Service (NMFS) (attached as Appendix D to this Order); and (4) the Reasonable and Prudent Measures

and Terms and Conditions of the Biological Opinion issued on _____, by the NMFS (attached as Appendix E to this Order).

(C) Exhibits A, F, and G, as set forth below, filed as part of PG&E's application to amend its license, are hereby approved and made a part of the license.

(D) Article 33 of the license for the Battle Creek Project, as amended, is hereby deleted in its entirety and replaced with the following:

(a) *Minimum Instream Flows.* Pending further order by the Commission on its own motion or at the request of others, after notice and opportunity for hearing, the Licensee shall, at the completion of installation of the appropriate facilities of the Phase 1A Battle Creek Salmon and Steelhead Restoration Project, maintain the minimum instream flow releases specified in Tables 1 and 2 except as noted and,

Additionally, that the minimum instream flows set forth in the tables may be (1) modified temporarily for major repairs on dams or outlet structures or for fish management purposes upon mutual agreement between the Licensee and the California Department of Fish and Game (CDFG), NMFS, and USFWS, and (2) reduced or suspended in response to an emergency.

TABLE 1. INSTREAM FLOW RELEASES BELOW DAMS IN NORTH AND SOUTH FORKS OF BATTLE CREEK

	Minimum Instream Flow Releases by Month (cfs)											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
North Fork Battle Creek												
North Battle Creek Reservoir Dam ¹	0	0	0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0	0
Macumber Reservoir Dam ²	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Al Smith Diversion Dam	3	3	3	3	3	3	3	3	3	3	3	3
Keswick Diversion Dam ³	3	3	3	3	3	3	3	3	3	3	3	3
North Battle Creek Feeder Diversion Dam ⁴	88	88	88	67	47	47	47	47	47	47	47	88
Eagle Canyon Diversion Dam ⁵	46	46	46	46	35	35	35	35	35	35	35	46
South Fork Battle Creek												
South Diversion Dam ⁶	5	5	5	5	5	5	5	5	5	5	5	5
Inskip Diversion Dam	5	5	5	5	5	5	5	5	5	5	5	5
Coleman Diversion Dam ⁷	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)	5 (30)

Notes:

1. To be measured at the existing weir below the dam.
2. Seepage or a controlled release may account for this flow.
3. As this release is made from the canal, it will not be required when flows are not being diverted from North Fork Battle Creek.
4. On occasion the release is not attainable because of the quantity of inflow reaching the dam. Additional flows to the North Battle Creek Feeder Diversion Dam reach are occasionally received from the junction box of the Volta 2 Powerhouse tailrace and Cross Country Canal a short distance downstream. In the event that the inflow is below the instream flow requirement, the Licensee shall pass all inflow.
5. Release requirement is met by water released from dam and from Eagle Canyon Springs.
6. This requirement is subject to interruption during radial gate operations when the water level above the dam is drawn below the invert elevation of the release point.
7. Instream flow has been temporarily modified from 5 cfs to 30 cfs under the Interim Flow Agreement with the Bureau of Reclamation.

TABLE 2. INSTREAM FLOW RELEASES BALDWIN AND BATTLE CREEKS

	Minimum Instream Flow Releases by Month (cfs)											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Baldwin Creek												
Asbury Diversion Dam ¹	5	5	5	5	5	5	5	5	5	5	5	5
Battle Creek												
Coleman Powerhouse ²	150	150	150	150	150	150	150	150	150	150	150	150

Note:

1. The Licensee is not required to meet this requirement immediately following low-level outlet operations when the water level above the dam is drawn below the invert elevation of the release point.
2. This requirement is subject to temporary interruption (less than 2 hours) attributable to equipment malfunction when instream flow in Battle Creek above the powerhouse is less than 150 cfs (typically in the summer months). The Licensee shall notify the resource agencies as soon as possible and no later than 24 hours from the time that any temporary interruption has occurred.

Furthermore, all minimum instream flows are the average of seven days of the mean daily flow. Individual mean daily flows may be less than the required minimum instream flows. The instantaneous, 15-minute instream flow releases shall be at least 90 percent of the required minimum instream flow.

(b) *Minimum Reservoir Elevations.* The Licensee shall maintain North Battle Creek Reservoir at or above 1,039 acre-feet capacity from June 1 through September 10, and at or above a minimum pool of 75 acre-feet (elevation 5,544 feet USGS datum) from September 11 through May 31. Exceptions to this regime may be made: (1) for purposes of providing instream flow releases required below North Battle Creek Reservoir, maintaining or repairing project facilities, or responding to emergencies; or (2) if late runoff or heavy snow pack precludes road access by truck and, thereby, flashboard placement to maintain the reservoir at or above 1,039 acre-feet capacity. When the dam access problem occurs, the Licensee shall place the flashboards as soon as the roads to the dam are passable by truck to ensure that the reservoir is

maintained at 1,039 acre-feet by July 1. If the Licensee is unable to comply with the June 1 date, the Licensee shall notify the Forest Supervisor of Lassen National Forest 5 business days prior to June 1 and, subsequently, when the reservoir is at or above 1,039acre-feet. Further, the Licensee shall notify the Forest Supervisor of Lassen National Forest at least 30 days in advance of a scheduled drawdown below the minimum elevations specified above.

Provided further, the Licensee shall maintain Macumber Reservoir at full capacity (428 acre-feet) from April 1 through September 10. Exceptions may be made for maintaining the instream flow release below the dam; for maintenance and repair of project facilities; or for emergencies.

(c) *Ramping Rates.* The Licensee, when returning the North Battle Creek Feeder, Cross Country Canal, Eagle Canyon Canal, and Coleman Canal back to service following forced or scheduled outages during which the flow that had been available for diversion into the water conveyance facility had instead been released to the natural stream channel, shall divert water from the natural stream channel back into the water conveyance facility at a target ramping rate in the natural stream channel of 0.1 ft/hour. This ramping rate shall not apply to South Fork Battle Creek when flows in the South Fork of Battle Creek are greater than 460 cfs. In addition, with the concurrence of the CDFG, NMFS, and USFWS, the Licensee may establish and submit to the Commission for its approval threshold flows for any of the above-referenced locations at which the ramping rate restriction shall no longer apply. The Licensee shall be deemed in compliance with the above-specified 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.

Additionally, when returning Coleman Powerhouse back to service following forced or scheduled outages, during which the flow was being bypassed through the Coleman Forebay spillway, the Licensee shall divert water from the spillway back through the powerhouse at a target ramping rate of 0.1 ft/hour. In addition, with the concurrence of the CDFG, NMFS, and USFWS, the Licensee may establish and submit to the Commission for its approval threshold flows in mainstem Battle Creek at which the ramping rate restriction shall no longer apply. The Licensee shall be deemed in compliance with the above-specified 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.

Additionally, controlled spillway releases from the North Battle Creek Reservoir Dam will not exceed 40 cfs. Changes in any 1-hour period in the rate of release shall not increase by twice nor decrease by one-half the previously prevailing hourly rate, except that increases or decreases up to 5 cfs in any 1-hour period are permitted.

(d) *Planned maintenance.* Planned maintenance of North Battle Creek Feeder, Cross Country Canal, Eagle Canyon Canal, and Coleman Canal and Coleman Powerhouse, that requires dewatering shall be scheduled during the period of February 1 through April 30, or at a mutually agreeable time, upon consultation with CDFG, NMFS, USFWS, and the Coleman National Fish Hatchery in order to minimize potential effects

on anadromous fish life stages that may be present in the affected stream reaches. For the canals, the duration of such dewatering shall be that necessary to complete the work associated with the water conveyance facility itself.

(E) The amended license is subject to the following additional articles:

Article 303. The Licensee shall install fish ladders and screens at Eagle Canyon and North Battle Creek Feeder Diversion Dams, remove Wildcat Diversion Dam and appurtenant conveyance systems, and implement the other components of Phase 1A of the Battle Creek Salmon and Steelhead Restoration Project described in Appendix A to the Order adding this article to the license as specified herein consistent with (1) the conditions of the water quality certification (WQC) issued on ____ by the California State Water Resources Control Board pursuant to section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), as those conditions are set forth in Appendix B to the Order adding this article to the license; (2) the Reasonable and Prudent Measures and Terms and Conditions (collectively, RPMs) of the Biological Opinion (BiOp) issued on June 20, 2005, by the USFWS, as those RPMs are set forth in Appendix C to the Order adding this article to the license; (3) the RPMs of the BiOp issued on June 22, 2005, by NMFS, as those RPMs are set forth in Appendix D to the Order adding this article to the license; and (4) the RPMs of the BiOp issued on ____, by NMFS, as those RPMs are set forth in Appendix E to the Order adding this article to the license; *provided, however,* that the Licensee shall not be required to begin implementation of any component of Phase 1A unless and until the Licensee has received from the CDFG assurance of funding of not less than \$49.2 (2008 dollars) to implement Phase 1A.

Article 304. Within 90 days from the date of this Order, the Licensee shall file with the Commission for approval a proposed Implementation Schedule for the Phase 1A activities described in Appendix A. The schedule shall be consistent with any environmental timeframe requirements specified in the conditions of the WQC or in the RPMs of the BiOps referenced in Article 303.

The Licensee shall prepare the proposed Implementation Schedule in consultation with Reclamation, CDFG, NMFS, and USFWS. The Licensee shall include with the proposed Implementation Schedule documentation of consultation, copies of comments and recommendations on the completed schedule after it has been prepared and provided to the aforementioned agencies, and specific descriptions of how the agencies' comments are accommodated by the schedule. The Licensee shall allow the agencies a minimum of 30 days to comment and to make recommendations before filing the schedule with the Commission. If an agency recommendation is not adopted, the filing shall include the reasons, based on project-specific information.

After filing the proposed Implementation Schedule, the Licensee shall provide the Commission with quarterly updates to the Implementation Schedule that reflect any changes to the schedule based on factors such as environmental permitting constraints, site conditions, availability of funding from CDFG, and other factors outside of the Licensee's control.

Article 305. Before beginning implementation of any component of Phase 1A, the Licensee shall review and approve by letter the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting

construction of a cofferdam, the Licensee shall submit one copy to the Commission's San Francisco Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Director, Division of Dam Safety and Inspections) of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 306. At least 60 days prior to beginning implementation of any component of Phase 1A, the Licensee shall submit one copy of the plans and specifications for all components of Phase 1A to the Commission's San Francisco Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Director, Division of Dam Safety and Inspections). The Commission reserves the right to require changes in the plans and specifications to ensure a safe and adequate project. The Licensee may not begin implementation of any component of Phase 1A until the Regional Engineer has approved in writing the submitted plans and specifications.

Article 307. Within 180 days of completion of construction of all components of Phase 1A, the Licensee shall file, for Commission approval, revised Exhibits A, F, and G, as applicable, to describe and show the Phase 1A components as built. Courtesy copies of such exhibits shall be filed with the Commission's San Francisco Regional Engineer and with the Director, Division of Dam Safety and Inspections.

Article 404. Within 1 year from the date of the Order adding this article to the license, the Licensee shall file, for Commission approval, a Facility Monitoring Plan that contains the following information:

- (1) a description of the gaging devices, sensors, monitoring and recording equipment, alarms, control systems, and underwater video cameras to be installed in order to comply with the Facility Monitoring Plan;
- (2) a schedule for installing the above-referenced devices and equipment;
- (3) the proposed locations of the above-referenced devices and equipment; and
- (4) a description of how data will be collected, maintained, and distributed.

The Licensee shall prepare the above-referenced materials in consultation with CDFG, NMFS, and the USFWS. The Licensee shall include with its filing documentation of consultation, copies of comments and recommendations on the completed materials after they have been prepared and provided to the aforementioned agencies, and specific descriptions of how the agencies' comments are accommodated by the filed materials. The Licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the materials with the Commission. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on site-specific information.

As specified in the Facility Monitoring Plan, the Licensee shall monitor compliance with the minimum flow requirements set forth in paragraph (a) of Article 33 hereof, the ramping rate requirements of Article 403 hereof, operation and maintenance of the fish ladders and fish screens installed pursuant to Phase 1A, and, during the initial

3-year period of their operation or longer upon mutual agreement of the Licensee, CDFG, NMFS, and USFWS, movement of adult and jack anadromous salmonids through those fish ladders.

The Licensee shall file with the Commission copies of the facility monitoring reports required by the Facility Monitoring Plan at the same time it provides such reports to the resource agencies identified therein. In addition to any notification requirements otherwise applicable pursuant to Commission regulations, the Licensee shall notify the Commission of the occurrence of any event listed in the Facility Monitoring Plan at the same time it provides such notification to the resource agencies identified therein.

The Commission reserves the right to require changes in the filed materials. The Licensee shall not install the above-referenced devices and equipment until the Licensee is notified by the Commission that the filed materials have been approved. Upon Commission approval, the Licensee shall install, operate, and maintain such devices and equipment consistent with any changes required by the Commission.

Article 405. At least 90 days prior to undertaking any structural or ground-disturbing activities associated with implementation of Phase 1A, the Licensee shall submit, for Commission approval, the following plans and programs pertaining to Phase 1A activities developed pursuant to the conditions included in the WQC issued by the Board as those conditions are set forth in Appendix B to the Order adding this article to the license and the RPMs included in the BiOps issued by NMFS and USFWS as those RPMs are set forth in Appendices C through E to the Order adding this article to the license:

- (1) Worker Environmental Education Program;
- (2) Vegetation Protection Plan;
- (3) Stormwater Pollution Prevention Plan that includes an Erosion and Sediment Control Plan;
- (4) Spill Pollution Prevention Plan;
- (5) Environmental Monitoring Program Implementation Plan;
- (6) Construction-Area Fish Management Program;
- (7) Erosion and Sediment Control Plan;
- (8) Dam Decommissioning Plan;
- (9) Comprehensive Habitat Mitigation and Monitoring Plan that includes a Riparian Restoration Plan, a Corps Jurisdictional HMMP, and an Oak Planting Plan; and
- (10) Blast Noise Mitigation and Notification Plan.

The Commission reserves the right to require changes in any of the above-referenced plans and programs. The Licensee shall not undertake any structural or ground-disturbing activities associated with Phase 1A until such plans and programs have been approved by the Commission or such approval otherwise has been waived by the Commission. The Licensee shall implement such plans and programs consistent with any changes required by the Commission.

Article 406. The Licensee shall comply with the _____, 2006 Memorandum of Understanding between the Licensee and CDFG as to the Darrah Springs State Fish Hatchery regarding the Licensee's notification to CDFG of the water

height at the Asbury Diversion Dam, the Licensee's use of flashboards and slide gate, and the movement of sediments downstream.

Article 407. (a) The Licensee shall conduct the monitoring activities required of it in lines 2, 7c, 7d, 7e, 7k, 9, 9a, 9b, 9c, 12, 14-19, and 25 of Table 25 of the Adaptive Management Plan for the Battle Creek Salmon and Steelhead Restoration Project (AMP) submitted as Appendix 2 to the Licensee's ___ 2008 application for amendment of license and shall allow the other parties to the AMP to have appropriate access to project lands and facilities to conduct the monitoring, studies, evaluations, and assessments agreed to by them as specified in Table 25 of the AMP.

(b) If subsequent to initiation of the instream flows specified in Article 33(a) hereof as amended by the Order adding this article to the license it is determined by CDFG, NMFS, and USFWS pursuant to the procedures and protocols of the AMP that such instream flows have not met the objectives set forth in the AMP and that increasing such instream flows will benefit anadromous fish and help achieve such objectives, the Licensee shall increase such instream flows as specified by CDFG, NMFS, and USFWS, subject to the conditions and limitations set forth in the AMP, and provide the Commission with written notification of any such increases; *provided, however*, that if a consensus of the parties to the AMP (as defined in the AMP [Section III.D.11]) has not been reached as to whether such increases are appropriate, any such party may petition the Commission in writing to resolve the matter, and the Licensee, following such resolution, shall provide the instream flows specified by the Commission.

Article 408. Following the installation, testing, and initiation of operation of the fish screens and ladders required as part of Phase 1A, the Licensee shall be

responsible for ensuring that such screens and ladders meet the Fail-Safe criteria as defined in the AMP.

Article 409. The Licensee shall file with the Commission a copy of the Adaptive Management Report prepared each year pursuant to the provisions of the AMP.

Article 410. Prior to undertaking any ground-disturbing Phase 1A activities at Eagle Canyon Diversion Dam and Wildcat Diversion Dam, the Licensee shall file with the Commission a copy of the Report referenced in Stipulation 1 of the February 25, 2003, Memorandum of Agreement among the Bureau of Reclamation, the Federal Energy Regulatory Commission, and the California State Historic Preservation Officer Regarding the Battle Creek Salmon and Steelhead Restoration Project (MOA). The Commission reserves its right to object to such Report as set forth in Stipulation 4 to the MOA.

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