Attachment 4:
Mitigation Monitoring or Reporting Program

Order Granting In Part and Denying In Part Petitions for Reconsideration and Certifying a Final Subsequent Environmental Impact Report

Attachment 4: Mitigation Monitoring or Reporting Program

Introduction

The State Water Resources Control Board (State Water Board) has prepared a subsequent environmental impact report (SEIR) in accordance with the California Environmental Quality Act (CEQA) for the Clean Water Act section 401 water quality certification (Certification) for the McCloud-Pit Hydroelectric Project Relicensing (Federal Energy Regulatory Commission (FERC) Project No. 2106) (Proposed Project) that identifies three required mitigation measures to reduce the Proposed Project's potentially significant environmental impacts.

When a public agency finds that mitigation measures are necessary to reduce a project's potentially significant environmental impacts CEQA requires the agency to adopt a program for monitoring or reporting on the measures it has imposed to mitigate or avoid significant environmental effects. (Cal. Code Regs., tit. 14, § 15097.) Please note that due to the preemptive effect of the Federal Power Act, the State Water Board is unable to impose mitigation measures or conditions of water quality certification for all potentially significant impacts. Please see Attachment 5: California Environmental Quality Act Findings and Statement of Overriding Considerations for the Board's findings regarding potentially significant CEQA impacts.

The section 401 water quality certification process is different from CEQA in that CEQA's focus is only the impacts that would result from changes to the environmental baseline associated with a project. Section 401 water quality certification conditions are not aimed solely at mitigating impacts resulting from changes to the environmental baseline but are more broadly directed at achieving water quality objectives and protecting designated beneficial uses. Accordingly, for some impact areas the Certification for the McCloud-Pit relicensing establishes conditions even though mitigation measures are not required under CEQA.

This Mitigation Monitoring or Reporting Program is prepared in accordance with CEQA to establish monitoring or reporting for the mitigation measures imposed by the SEIR. It also identifies conditions of the Certification that are related to implementation of the mitigation measures and to protection of water quality even where the Proposed Project was not found to have a potentially significant impact as defined by CEQA.

Mitigation Measures

Subdivision (c) of section 15097 of the CEQA Guidelines states in part:

> The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and

reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both.

Monitoring and/or reporting requirements for the mitigation measures imposed by the SEIR are set forth below.

Mitigation Measure BIO-1: Whitewater Flow Seasonality

Mitigation Measure BIO-1 requires that whitewater boating flows below McCloud Dam be restricted to winter/spring, initiated before foothill yellow-legged frog (FYLF) breeding, and be monitored to ensure avoidance of breeding timing and to guide future flow releases.

Monitoring: During the first three years in which any whitewater boating flows are implemented under the Proposed Project, PG&E shall conduct monitoring for FYLF breeding. Monitoring shall take place within 0.5 miles of FYLF monitoring Site 120 and shall include a minimum of six data points collected over a period of at least three days and no more than seven days, e.g., one data point collected in the morning and evening of each day over a three-day period. When required, annual monitoring shall occur prior to commencement of whitewater boating flows but shall not begin more than ten days prior to commencement of whitewater boating flows.

Reporting: In the three years when monitoring is required as described above, PG&E shall submit monitoring results to the State Water Board staff within 30 days of completing the monitoring. Monitoring results shall include information regarding the dates and times of data collection and observations of FYLF breeding behavior and the presence of FYLF egg masses, and FYLF tadpoles. After the three years of required monitoring, PG&E shall submit a report to the Deputy Director of the Division of Water Rights (Deputy Director) summarizing FYLF monitoring results and proposing any changes, if necessary, to whitewater boating flows and/or FYLF monitoring.

In addition, in any year in which whitewater boating flows occur PG&E shall submit a report of the dates and volumes of whitewater boating flows to the State Water Board staff within 30 days after the whitewater boating flows cease.

Mitigation Measure WATER-1: Long-term Turbidity Control

Mitigation Measure WATER-1 requires monitoring and management of sediment accumulation in McCloud and Iron Canyon reservoirs to prevent the release of sediment downstream, in coordination with relevant agencies.

Monitoring: Within the first full calendar year following license acceptance and every five years thereafter PG&E shall monitor sediment accumulation in McCloud and Iron Canyon reservoirs. Monitoring results shall include total accumulated sediment, percentage of reservoir volume lost to sediment accumulation, and quantification of any increases compared to the most recent monitoring results.

Reporting: PG&E shall submit a report of monitoring results to the State Water Board staff within 30 days of completing the required monitoring. Monitoring results shall include total accumulated sediment, percentage of reservoir volume lost to sediment accumulation, and quantification of any increases compared to the most recent monitoring results. This reporting requirement will be deemed satisfied by the inclusion of the required information in any reporting submitted in accordance with Condition 3(B) of the Certification.

Mitigation Measure WATER-2: Turbidity Measurement and Monitoring

Mitigation Measures WATER-2 requires continuous monitoring of water turbidity and temperature in the McCloud Reservoir and River, development of a numerical model, and identification and implementation of action to ensure project operations do not violate applicable standards for turbidity in the affected watersheds.

Monitoring: Within one year of license acceptance PG&E shall include in its Erosion and Sediment Management Plan provisions for the following monitoring protocol:

1. Continuous monitoring of inflow turbidity from, at minimum, Mud Creek and the McCloud River upstream of the Mud Creek inflow. Other McCloud Reservoir inflow sources (e.g., Huckleberry Creek) may be included if appropriate.
2. Continuous monitoring of discharge of the monitored turbidity inflow sources.
3. Monitoring of McCloud Reservoir profiles of turbidity and temperature at minimum monthly April – November and more frequently if more frequent monitoring is necessary to characterize turbidity conditions within the reservoir sufficiently to achieve compliance with the reporting requirement below.
4. Continuous monitoring of outflow turbidity and discharge from McCloud reservoir.

Reporting: At a minimum of every five years after Deputy Director approval of the Reservoir Turbidity Monitoring and Management Plan PG&E shall submit a report of monitoring results to the Deputy Director. The reports shall depict, on a monthly basis, the data collected under the monitoring protocol set forth above. If data indicates that the Proposed Project operations are resulting in exceedances of the Central Valley Regional Water Quality Control Board's *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Central Valley Basin Plan) standard for turbidity in the Lower McCloud River the report shall identify management actions PG&E will implement to avoid future exceedances of the standard. If a report identifies management actions, subsequent reports shall include information regarding implementation of the management actions in addition to the other required information. This reporting requirement will be deemed satisfied by the inclusion of the required information in any reporting submitted in accordance with Condition 3(B) of the Certification.

Mitigation Measure TRIBAL-4

Mitigation Measures TRIBAL-4 requires PG&E to comply with the State Water Board's Construction General Permit (*General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*. Water Quality Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006- DWQ) and amendments thereto for construction and maintenance activities to which the Construction General Permit applies and to develop and implement site-specific Water Quality Monitoring and Protection Plans (WQMP Plans) approved by the Deputy Director prior to beginning any construction and maintenance activities that are not subject to the Construction General Permit.

Monitoring and Reporting:

When compliance with the Construction General Permit is required, PG&E shall comply with all applicable monitoring and reporting requirements established by the Construction General Permit and future amendments thereto.

When a WQMP Plan is required, PG&E shall submit it to the Deputy Director for review and approval at least 60 days prior to the start date of the subject construction or maintenance activity. PG&E shall comply with the monitoring, maintenance, and reporting schedule included in the approved WQMP Plan.

Water Quality Certification Conditions

As explained above, CEQA mitigation measures are different from certification conditions because mitigation measures are focused on reducing or avoiding significant adverse impacts that would result from changes to the environmental baseline caused by a project and certification conditions are more broadly aimed at ensuring the licensed action will comply with Clean Water Act requirements including water quality standards adopted by the state.

Below, this MMRP describes conditions of the Certification that PG&E will be required to implement related to impacts analyzed in the EIR even where the EIR impact was not found to be potentially significant. The Certification also includes water quality certification Conditions 16 through 37, which are general in nature and are not included below.

CONDITION 1: Minimum Instream Flows and Ramping Rates

Condition 1(A) requires PG&E to determine water year types and define the water year types on a monthly basis based on the California Department of Water Resources Bulletin 120 forecast. PG&E must provide written notice of the water year type determination within 15 days of making each determination.

Condition 1(B)(1) requires PG&E to implement minimum instream flows (MIFs) and ramping rates in the McCloud River below McCloud Dam to the extent possible using existing facilities prior to completion of facility modifications under Condition 2 and to

fully implement the MIFs no later than 30 days following completion of facility modifications. PG&E must implement year-round MIFs in accordance with Table 1 of the Certification.

MIFs must be measured at two sites: (i) In the McCloud River below McCloud Dam (United States Geological Survey [USGS] Gage No. 11367760, Pacific Gas and Electric Company [PG&E] Gage No. MC-7); and (ii) Ah-Di-Na (USGS Gage No. 11367800, PG&E Gage No. MC-1). PG&E must also install a new gage in or adjacent to McCloud Dam within three years following license issuance and must begin using the gage within 30 days of installation. This new gage will replace Gage No. MC-7 for compliance purposes.

PG&E must ramp down all natural and operational spill events, once controllable by MIF valve operation, in increments of no more than 150 cubic feet per second (cfs) each 48-hour period until the required MIF is reached.

Prior to completion of facility modifications pursuant to Condition 2, to determine if revised ramping rates are necessary to protect aquatic resources in the McCloud River below McCloud Dam, PG&E must consult with agencies to determine whether revised ramping rates are necessary, and if so, must develop a Long-term Ramping Rates Plan that includes, at minimum, the following:

(i) Purpose of the LTRR Plan;
(ii) Aquatic species for which ramping rates will be developed;
(iii) An assessment of which flows require ramping rates (e.g., MIFs, boating flows, spills);
(iv) Methods for determining long-term ramping rates (e.g. studies, tests, monitoring, etc.);
(v) Criteria for evaluating the effectiveness of the ramping rates; (vi) Schedule for reporting study and or monitoring results to Forest Service, CDFW, USFWS, and State Water Board staff;
(vi) Proposed interim ramping rates for the McCloud River below McCloud Dam, if applicable;
(vii) Timeframe for implementing the LTRR Plan and submittal of a Long-term Ramping Rates Report (LTRR Report) to the Deputy Director for review and approval. The LTRR Report shall include the Licensee's proposed long-term ramping rates and supporting documentation;
(viii) A plan for how modifications to the LTRR Plan and LTRR Report will be implemented to address the need for updates to ramping rates throughout the term of the FERC license and any extensions; and
(ix) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the LTRR Plan and LTRR Report, and a description of how it incorporates or addresses the comments and recommendations.

Condition 1(B)(2) requires PG&E to implement MIFs and ramping rates in Iron Canyon Creek below Iron Canyon Dam as provided in Table 2 of the Certification no later than

30 days following license issuance. If gage modifications are required to ensure compliance with the required MIFs, PG&E must: (1) demonstrate compliance with the required MIFs within the capabilities of the existing gaging equipment prior to completing gage modifications and no later than 30 days following license issuance; and (2) demonstrate compliance with the required MIFs no later than 30 days following completion of gage modifications or three years following license issuance, whichever comes first.

Condition 1(C) requires PG&E to measure MIFs for the McCloud River and Iron Canyon Creek as a 24-hour average flow and as an instantaneous flow recorded at 15-minute intervals. PG&E must measure and document all MIF releases and associated streamflows, as measured at the gages required by the Certification, in a publicly available and readily accessible format and must catalogue and provide data to the United States Geological Service. PG&E must make flow values used to construct the 24-hour average flows available to resource agencies upon request.

Condition 1(D) requires PG&E to schedule maintenance or other planned powerhouse outages in a way that avoids negative ecological impacts from the resultant spills and to provide written notification to the Deputy Director at least 90 days prior to any planned or scheduled powerhouse outages that would affect stream flows in the Pit River, McCloud River, or Iron Canyon Creek stream reaches.

Condition 1(E) requires PG&E to submit proposed temporary MIF variances for non-emergency facility construction, modification, or maintenance to the Deputy Director for approval as far in advance as practicable, but no less than four months in advance of the desired effective date, and to notify the Forest Service, CDFW, and USFWS of the proposed temporary MIF variances. The Deputy Director may require modifications as part of any approval.

Condition 1(F) requires PG&E to notify the Deputy Director prior to a temporary emergency MIF modification when possible, and in all instances to notify the Deputy Director within 24 hours of the beginning of any unplanned temporary streamflow modification and to provide the Deputy Director with an update of the conditions associated with the modification and an estimated timeline for returning to the required MIFs within 96 hours of beginning the modification.

In addition, within 30 days of any unplanned temporary MIF modification, PG&E must provide the Deputy Director with: (1) a written description of the modification and reason(s) for its necessity; (2) photo documentation of the emergency or reason for the stream flow modification; (3) a timeline for returning to the required MIFs or timeline when the MIFs resumed; (4) a description of corrective actions taken in response to an unplanned under-release of flow; and (5) a plan to prevent the need for modification of minimum instream flows resulting from a similar emergency or event in the future.

CONDITION 2: Gaging and Facilities Modifications

Condition 2 requires PG&E to submit a Gaging and Facilities Modification Plan that includes, at minimum, the following:

(i) Purpose of the Gaging and Facilities Modification Plan;
(ii) List, map, and detailed description of existing and proposed new gages associated with the Project. The description shall include: (a) type of gages; (b) frequency of data collection and data QA/QC procedures; (c) where data for the gages will be stored and made publicly available; and (d) gage maintenance.
(iii) Detailed descriptions of proposed facility and gage modifications necessary to comply with this certification, including relevant maps and designs;
(iv) Schedule for installation of new gage(s) and facilities modifications, and reporting upon completion of construction and modifications associated with the plan;
(v) Measures that will be implemented to protect water quality and beneficial uses during: (a) installation/construction, operation, and maintenance of gages over the term of the license and any extensions, and (b) construction of proposed facilities modifications to comply with MIFs;
(vi) Monitoring and reporting that will be implemented during construction and modifications of gages and facilities;
(vii) A plan for how modifications to the Gaging and Facilities Modification Plan will be implemented to address gaging-related changes throughout the term of the FERC license and any extensions; and
(viii) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the Gaging and Facilities Modification Plan, and a description of how it incorporates or addresses the comments and recommendations.

PG&E shall submit the Gaging and Facilities Modification Plan required by Condition 2 to the Deputy Director within one year following license issuance.

CONDITION 3: Water Quality Monitoring and Management

Condition 3(A) requires PG&E to submit a Water Quality Monitoring and Management Plan that includes, at minimum, the following:

(i) List of water quality parameters to be monitored, as appropriate, that may include, but are not limited to: water temperature, dissolved oxygen, turbidity, and bacteria. The list shall also include current Central Valley Regional Water Board's *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Central Valley Basin Plan) water quality objectives for the parameters;
(ii) Proposed monitoring plan, including monitoring locations with a map, sampling protocols, analytical methods, QA/QC procedures, and the schedule and frequency;
(iii) Specific monitoring that shall be performed includes:

a. Bacterial monitoring in all Project reservoirs during the recreation season and monitoring of other potential contaminants (e.g.,for recreation-related aquatic invasive species (e.g., quagga mussels, etc.) at key recreation locations including, but not limited to: boat ramps; day use areas; and near campgrounds. At a minimum, the Licensee shall monitor contaminants in Project reservoirs for the first five years following Water Quality Plan approval and the first two years following completion of each recreation facility construction and/or improvement. Following each monitoring period, the Licensee shall consult with Forest Service, CDFW, USFWS, Central Valley Regional Water Board, Winnemem Wintu Tribe, and State Water Board staff during or prior to the subsequent annual consultation meeting (see Condition 13) to determine whether: (1) the Licensee must take corrective measures to reduce contaminant levels; or (2) contaminant monitoring at Project reservoirs can be reduced. The Licensee shall consult with Forest Service, CDFW, USFWS, Central Valley Regional Water Board, Winnemem Wintu Tribe, and State Water Board staff to develop corrective measures and/or a revised monitoring schedule, if necessary. The Licensee shall submit proposed corrective measures and/or revised monitoring schedule to the Deputy Director for review and approval no later than six months following consultation;
b. Monitoring of dissolved oxygen in McCloud, Iron Canyon, Pit 6, and Pit 7 Reservoirs;
c. Water temperature monitoring from May 1 through September 30, for a minimum of 10 years following implementation of MIFs (Condition 1); and
d. Turbidity monitoring for the term of the license in the Lower McCloud River (at PG&E Gage Nos. MC-7 or MC-1) from April 25 through November 15 (i.e., the fishing season) for the purposes of recreational use (i.e., fishing). The Licensee shall notify the Deputy Director 10 days in advance, or as soon as feasible, if routine sensor maintenance or deployment in the spring is delayed due to late snows or high flows. If turbidity sensor deployment is delayed, the Licensee shall implement sensor deployment as soon as feasible, but no later than June 1 of each year, unless an alternative sensor deployment schedule is approved by the Deputy Director. Turbidity levels shall be available in real-time from the date of deployment through November 15 on the Licensee's public Project website;

(iv) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The Licensee shall propose any updates to the Water Quality Plan based on the monitoring results. Reports shall be submitted to State Water Board staff, Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and the Central Valley Regional Water Board;
(v) Provisions to monitor turbidity during construction or other soil disturbing activities; and
(vi) Documentation of consultation with Forest Service, CDFW, USFWS, Central Valley Regional Water Board, Winnemem Wintu Tribe, and State Water Board staff, comments and recommendations made in connection with the Water

Quality Plan, and a description of how the Water Quality Plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Water Quality Monitoring and Management Plan to the Deputy Director within one year following license issuance.

Condition 3(B) requires PG&E to submit a Reservoir Turbidity Monitoring and Management Plan that, includes, at minimum and consistent with Mitigation Measures WATER-1 and WATER-2, the following:

(i) Identification of locations and frequency of turbidity monitoring that will be performed. At a minimum monitoring shall be performed to measure turbidity inputs from Mud Creek, the McCloud River upstream of McCloud Reservoir, and other tributaries as appropriate (e.g., Huckleberry Creek);
(ii) Identification of location(s) and frequency of turbidity monitoring for flows below McCloud Dam;
(iii) Protocols for assessing sediment accumulation in McCloud and Iron Canyon Reservoirs, including total amount of sediment accumulated and the percentage of reservoir volume lost since reservoir construction. Sediment accumulation shall be monitored in the first full calendar year following Deputy Director approval of the Turbidity Plan and at least every five years thereafter;
(iv) Protocols for and frequency of monitoring McCloud Reservoir turbidity and temperature profiles. Turbidity and temperature profiles shall be monitored at least monthly from April through November;
(v) Timeframes for development of:
    a. A numerical model of McCloud Reservoir turbidity and temperature;
    b. A description of how Project operations affect turbidity, including anticipated effects of climate change; and
    c. Identification of potential management actions the Licensee could implement to manage turbidity, sediment accumulation, and releases, as appropriate, with the Licensee's recommendation of actions to implement, if appropriate, or support for why no actions are needed;
(vi) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The frequency with which the Licensee shall evaluate the Turbidity Plan and propose any updates to the Deputy Director for review and approval based on the monitoring results. Reports shall be submitted to Forest Service, CDFW, USFWS, Central Valley Regional Water Board, Winnemem Wintu Tribe, Pit River Tribe, TNC, and State Water Board staff; and
(vii) Documentation of consultation with Forest Service, CDFW, USFWS, Central Valley Regional Water Board, Winnemem Wintu Tribe, Pit River Tribe, TNC, and State Water Board staff, comments and recommendations made in connection with the Turbidity Plan, and a description of how the Turbidity Plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Reservoir Turbidity Monitoring and Management Plan to the Deputy Director within one year following license issuance. Submission of and compliance with the Reservoir Turbidity Monitoring and Management Plan shall be

deemed to satisfy the reporting requirements for Mitigation Measures WATER-1 and WATER-2, provided that the Plan includes reporting of the information required by Mitigation Measures WATER-1 and WATER-2.

CONDITION 4: Large Woody Material

Condition 4 requires PG&E to submit a Large Woody Material Plan (LWB Plan) that includes, at minimum, the following:

(i) Specific objectives, including a description of: (a) what constitutes large woody material (i.e., size criteria) that will be captured, removed, stored, and placed as part of this condition; and (b) how other woody material will be handled or disposed of as part of Project operations;
(ii) Proposed monitoring to assess the effectiveness of the plan (e.g., mobilization and distribution of large woody material);
(iii) Detailed description of the methods, locations, and volume and frequency of large woody material capture, removal, storage, and placement;
(iv) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The Licensee shall propose any updates to the LWM Plan based on the monitoring results. Reports shall be submitted to State Water Board staff, Forest Service, CDFW, and USFWS; and
(v) Documentation of consultation with Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff, comments and recommendations made in connection with the LWM Plan, and a description of how the LWM Plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Large Woody Material Plan to the Deputy Director within one year following license issuance.

CONDITION 5: Erosion and Sediment Management

Condition 5 requires PG&E to submit an Erosion and Sediment Control Management Plan that includes, at minimum, the following:

(i) Purpose of the Erosion and Sediment Plan;
(ii) A proposal to address the 188 specific sites identified in the erosion and sediment relicensing study GS-S127 (GS-SI) as well as the sites identified by FERC and the Forest Service. The proposal shall include:
    a. Any new information on the sites since the original study was conducted;
    b. How the Licensee will address the existing and potential future erosion and sedimentation issues at each site. This includes corrective measures to address existing impacts as well as stabilization to address future erosion and sedimentation problems;
    c. Measures the Licensee will implement to protect water quality and beneficial uses while conducting the proposed work;

d. Prioritization of and a timeline to address all sites by no later than five years following license issuance. Priority shall be placed on the 56 sites ranked with high erosion potential per the results from the GS-S1;
e. Post-implementation monitoring that will be performed to ensure effective stabilization; and
f. Format, schedule, and reporting to document and summarize the work and monitoring results. The report(s) shall identify any additional follow up or long-term actions (e.g., vegetation maintenance and/or monitoring) that need to be implemented to ensure the stabilization work remains effective. Reports shall be submitted to State Water Board staff, Forest Service, CDFW, Winnemem Wintu Tribe, and USFWS;

(iii) Periodic inventories of the entire Project area to identify and assess sites with erosion and sedimentation issues. The Erosion and Sediment Plan shall identify a timeline for the inventories. At a minimum, the inventory work shall meet the following:
a. Use protocols established in the GS-S1 unless otherwise approved by the Deputy Director in writing;
b. The initial inventory shall include sites not identified under Item (ii) above. The inventory shall include Project roads, facilities, infrastructure, reservoir shorelines, recreational use areas, and areas of mass wasting, erosion, or sedimentation that are Project-related or affected by Project roads, facilities, and operations; and
c. Periodic monitoring, inventory, and reporting that: update site conditions, record the effectiveness of erosion treatment measures, and identify new erosion sites;

(iv) Criteria for ranking and treating erosion sites identified as part of the inventories, including a risk rating and hazard assessment for scheduling erosion treatment measures and monitoring at each erosion site, using protocols developed in the GS-S1;

(v) Protocols for monitoring completed erosion control treatment measures for a period of up to three years after treatment to determine the effectiveness of erosion control measures and if further erosion control measures are necessary;

(vi) Process and timeline for periodic submittals of the inventory (see iii above), including associated information and monitoring of existing sites, to the Deputy Director. If the inventory indicates existing or new sites with Project-related erosion and sedimentation issues, the Licensee shall prepare an amendment to the Erosion and Sediment Plan for Deputy Director review and approval. The plan amendment shall be prepared in consultation with the Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff and submitted to the Deputy Director within six months of submitting the inventory to the Deputy Director. The plan amendment shall include: (a) a ranking of the sites based on the criteria outlined in (iv) above; (b) a timeline for addressing sites with erosion and sedimentation issues; (c) measures/treatments that will be implemented to address erosion and sedimentation issues at each site; (d) measures that will be implemented to protect water quality and beneficial uses;

(e) monitoring of sites to evaluate effectiveness of implemented measures/treatments as outlined in (v), above; and (f) reporting;

(vii) Site-specific temporary erosion control measures that will be implemented during construction-related activities;

(viii) Protocols for emergency erosion and sediment control that would be implemented upon notice to the Deputy Director, outside of the timeline and process outlined in (vi) above;

(ix) Protocols for daily monitoring of turbidity for a minimum of five years after license issuance in Iron Canyon Creek below Iron Canyon Dam (PG&E Gage No. MC-10) to ensure that the Licensee's erosion control measures have reduced sedimentation into Iron Canyon Creek and improved water quality below the dam. If after five years of monitoring elevated turbidity (i.e., above Central Valley Basin Plan standards) is still occurring at PG&E Gage No. MC 10, the Licensee shall, no later than six months following this determination, propose and implement continued and/or additional erosion control treatment measures and turbidity monitoring as part of the periodic inventories and associated erosion control treatments; and

(x) Documentation of consultation with Forest Service, CDFW, USFWS, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Erosion and Sediment Control Management Plan to the Deputy Director within one year following license issuance.

CONDITION 6: Gravel Augmentation

Condition 6 requires PG&E to submit a Gravel Augmentation Plan that includes, at minimum, the following:

(i) The purpose of the Gravel Augmentation Plan;

(ii) Method for removal, sorting, and cleaning of the source gravel, as well as disposal of any biproducts associated with the process;

(iii) Identification of location(s) and methods for gravel introduction/placement, and any facilities or improvements necessary to access the McCloud River below McCloud Dam and place gravel;

(iv) Identification of gravel storage sites;

(v) A schedule for gravel placement;

(vi) Method for placement;

(vii) Schedule and methods for monitoring mobilization of gravel dispersal;

(viii) Any measures the Licensee will implement to protect water quality and beneficial uses;

(ix) Adaptive management component to allow for: non-delivery of gravel in non spill years, or in years when spring flows are insufficient to mobilize the gravel from the placement site(s); and increased gravel placement above the target period addition of 150 to 600 metric tons, if mobilization occurs and results from

gravel dispersal monitoring indicate the river has capacity to transport greater gravel quantities;

(x) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The Licensee shall propose any updates to the Gravel Augmentation Plan based on the monitoring results. Reports shall be submitted to State Water Board staff, Forest Service, CDFW, Winnemem Wintu Tribe, and USFWS; and

(xi) Documentation of consultation with Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff, comments and recommendations made in connection with the Gravel Augmentation Plan, and a description of how the Gravel Augmentation Plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Gravel Augmentation Plan to the Deputy Director within one year following license issuance.

CONDITION 7: Biological Resources

Condition 7 requires PG&E to submit a Biological Resources Monitoring Plan that includes, at minimum, the following:

(i) The purpose of the Biological Resources Monitoring Plan;

(ii) Biological resources monitoring performed on an annual basis for the first five years after implementation of MIFs (Condition 1 of this certification). Thereafter, biological monitoring shall occur once every five years throughout the term of the new license, unless an alternative monitoring schedule is approved by the Deputy Director;

(iii) Standardized sampling and data protocols consistent with relicensing studies to ensure comparability of survey results with existing data;

(iv) Fish population trend assessments. At a minimum, assessments shall include locations in: (1) the McCloud River below McCloud Dam; (2) Iron Canyon Creek below Iron Canyon Dam; and (3) Pit 7 Reservoir;

(v) Benthic macroinvertebrate (BMI) monitoring using the Surface Water Ambient Monitoring Program Protocols or its successor program, or an alternative methodology approved by the Deputy Director. The protocols shall include population heterogeneity, composition, and trends. Locations of BMI monitoring shall include, at a minimum, reaches in: (1) McCloud River below McCloud Dam; and (2) Iron Canyon Creek below Iron Canyon Dam;

(vi) Monitoring of state and/or federally listed amphibian and turtle species. Monitoring locations of state and/or federally listed amphibian and turtle species shall include, at a minimum, reaches in: (1) McCloud River below McCloud Dam; (2) Iron Canyon Creek below Iron Canyon Dam; (3) Pit 6 Reservoir; and (4) Pit 7 Reservoir;

(vii) Protocols to monitor for and prevent introduction or spread of invasive aquatic species. At a minimum, the Licensee shall comply with the State Water Board's Statewide National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and

Aquatic Weed Control Applications. If invasive aquatic species are found in the Project area, the Licensee shall consult with the Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff to determine if management measures are necessary. If necessary, the Licensee shall develop management measures in consultation with the Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff and submit the proposed management measures to the Deputy Director for review and approval. The Licensee shall implement the management measures upon receipt of Deputy Director approval and any other required approvals;

(viii) Monitoring of resident fish passage conditions at Gap Creek, Deadlun Creek, and Cedar Salt Log Creek road crossings around Iron Canyon Reservoir;

(ix) Format, schedule, and reporting to document, summarize, and analyze monitoring results. The reports shall include identification of any impacts to biological resources and recommendations to address such impacts. The Deputy Director may direct the Licensee to implement measures to address impacts associated with the Project. The Licensee shall propose any updates to the Biological Resources Monitoring Plan based on the monitoring results. Reports shall be submitted to State Water Board staff, Forest Service, CDFW, Winnemem Wintu Tribe, and USFWS; and

(x) Documentation of consultation with Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff, comments and recommendations made in connection with the Biological Resources Monitoring Plan, and a description of how the Biological Resources Monitoring Plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Biological Resources Monitoring Plan to the Deputy Director within one year following license issuance.

CONDITION 8: Fish Stocking

Condition 8 requires PG&E to implement fish stocking as outlined in Recommendation 3 of the CDFW 10(j) Recommendations, dated January 28, 2010, and the Staff Alternative in FERC's final EIS in the first full calendar year following license issuance. PG&E shall notify the Deputy Director of any proposed updates to the fish stocking provisions prior before implementing the updates and shall, if requested, submit such updates to the Deputy Director for review and approval.

CONDITION 9: Recreation Facilities Management

Condition 9 requires PG&E to submit a Recreation Facilities Management Plan that includes, at minimum, the following:

(i) A description of operations and maintenance activities associated with the Project recreation facilities that have the potential to impact water quality, and measures that will be implemented to address any impacts;

(ii) Identification of recreation use surveys that will be conducted as part of the Project and submittal of the associated results to State Water Board staff. If

results of the survey indicate an increase in recreation use, the Licensee shall evaluate the potential effects to determine whether modifications to Project facilities are needed to protect water quality and beneficial uses and provide the Deputy Director with the analysis and any associated recommendations for review and approval. The Deputy Director may make modifications as part of any approval;

(iii) A list, description, and schedule for modifications to existing and construction of new recreation facilities associated with the Project. For each facility modification or construction, the Licensee shall prepare and implement, once approved by the Deputy Director, a Water Quality Monitoring and Protection Plan (Condition 11) that outlines measures and monitoring the Licensee will implement to protect water quality, beneficial uses, and aquatic biological resources;

(iv) Format, schedule, and reporting to document, summarize, and analyze completion of recreation facility construction or modification and associated monitoring results; and

(v) Documentation of consultation with Forest Service, CDFW, USFWS, Winnemem Wintu Tribe, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Recreation Facilities Management Plan to the Deputy Director within one year following license issuance.

CONDITION 10: Whitewater Recreation

Condition 10 requires PG&E to submit a Whitewater Recreation Management Plan that includes, at minimum, the following:

(i) Magnitude of whitewater recreation flows;

(ii) Duration of whitewater recreation flows. The duration may include all or portions of ramp-up and ramp-down periods if the magnitude requirement is met;

(iii) Frequency and timing of whitewater recreation flows. The Licensee shall provide whitewater recreation flows at least once every four years. When determining timing, the Licensee shall consider potential impacts of whitewater recreation flows to special-status species and angling in the McCloud River reach. Whitewater recreation flow releases below McCloud Dam shall occur only during the winter/spring high flow season (i.e., consistent with natural hydrologic timing of high flows). Whitewater recreation flows shall occur before the FYLF breeding season (e.g., when McCloud River temperatures reach 12 degrees Celsius, typically mid-spring but varies depending on the water year type and water temperature);

(iv) Protocols for monitoring FYLF breeding during the first three years of whitewater recreation flows to verify that FYLF egg masses and tadpoles are not being scoured, washed out, or dewatered. The Licensee shall conduct

(v) Potential situations in which the Licensee may be excused from providing all or a portion of whitewater recreation flows (e.g., if flows in the previous year were large enough to provide whitewater recreation opportunities, or if the Licensee can supplement natural rational flows would result in adverse impacts to FYLFs);
(vi) Measures the Licensee will implement to facilitate whitewater boating opportunities (e.g., improved access to put-ins and take-outs such as snow plowing of access roads);
(vii) Monitoring of whitewater boating use;
(viii) Noticing to inform the Forest Service, CDFW, USFWS, California Sportfishing Protection Alliance, California Trout, Trout Unlimited, Winnemem Wintu Tribe, State Water Board staff, and the public when the Licensee plans to release whitewater recreation flows;
(ix) Format, schedule, and reporting to document whitewater boating opportunities and use., as well as the results of FYLF monitoring in item (iv) above. The Licensee shall propose any updates to the Whitewater Plan based on the monitoring results and other related information; and
(x) Documentation of consultation with Forest Service, CDFW, USFWS, California Sportfishing Protection Alliance, California Trout, Trout Unlimited, Winnemem Wintu Tribe, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

PG&E shall submit the Whitewater Recreation Management Plan to the Deputy Director within one year following license issuance.

CONDITION 11: Construction and Maintenance

Condition 11 requires PG&E to comply with the State Water Board's Construction General Permit, Dredge or Fill Procedures, and amendments thereto or to develop and implement site-specific Water Quality Monitoring and Protection Plans (WQMP Plans) for any construction and maintenance activities with the potential to impact water quality or beneficial uses. WQMP Plans shall include, at minimum, the following:

(i) Description of site conditions and the proposed activity;
(ii) Detailed descriptions, design drawings, and specific topographic locations of all control measures in relation to the proposed activity, which may include:
    a. Measures to divert runoff away from disturbed land surfaces;
    b. Measures to collect and filter runoff from disturbed land surfaces, including sediment ponds at the diversion and powerhouse sites; and
    c. Measures to dissipate energy and prevent erosion;
(iii) Revegetation measures for disturbed areas, which shall include use of native plants and locally-sourced plants and seeds;
(iv) Measures for complying with the Dredge or Fill Procedures and Central Valley Basin Plan water quality objectives, as applicable; and
(v) A monitoring, maintenance, and reporting schedule.

PG&E shall submit WQMP Plans to the Deputy Director at least 60 days prior to the desired start date of the applicable construction or maintenance activity.

CONDITION 12: Reintroduction of Anadromous Fish Species

Condition 12(A) requires PG&E to engage in consultation with agencies and tribes to evaluate available information and determine the need for studies related to winter-run Chinook salmon in the Lower McCloud River and the Proposed Project's potential impacts to winter-run Chinook salmon that are present in the McCloud River. Consultation shall include, at minimum, the following:

(i) Identification of and a summary of existing information related to winter-run Chinook salmon in the McCloud River;
(ii) Identification and development of any study plans to identify Project potential impacts to Chinook salmon. Study plans shall consider Project operations, flow releases, water quality, and aquatic habitat impacts;
(iii) Documentation of consultation with NMFS, Forest Service, CDFW, USFWS, the Winnemem Wintu Tribe, Pit River Tribe, and State Water Board staff, comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.

PG&E shall submit study plans developed through consultation to the Deputy Director within two years of license issuance.

Condition 12(B) requires PG&E to prepare a report in consultation with agencies and tribes that includes, and minimum, the following:

(i) Results of completed and/or ongoing approved studies identifying any Project-related impacts to winter-run Chinook salmon habitat and populations in the McCloud River below McCloud Dam;
(ii) Recommendations, if appropriate, for additional data collection to better inform Project impacts;
(iii) Identification of adaptive management measures, if appropriate, to address Project impacts based on study plan(s) results. Adaptive management measures may include changes to the required flows, habitat restoration, access to McCloud River tributaries, or other protective measures;
(iv) Proposed changes, as appropriate, to update certification conditions to protect salmon, including conditions related to flows (Condition 1), water quality monitoring (Condition 3), large woody material (Condition 4), gravel augmentation (Condition 6), biological resources monitoring (Condition 7), and fish stocking (Condition 8); and
(v) Documentation of consultation with NMFS, Forest Service, CDFW, USFWS, the Winnemem Wintu Tribe, Pit River Tribe, and State Water Board staff, comments and recommendations made in connection with the report, and a description of how the report incorporates or address the comments and recommendations.

PG&E shall submit the report within one year of completing any studies required by Condition 12(A).

Condition 12(C) provides that if any authorized federal agency requires fish passage or related actions, the Deputy Director may require the Licensee to develop and submit a plan for Deputy Director review and consideration of approval to ensure adequate protection of Central Valley Basin Plan water quality objectives and beneficial uses applicable to anadromous fish. PG&E shall submit the plan in accordance with the timeframe identified by the Deputy Director.

CONDITION 13: Annual Consultation Meetings

PG&E shall submit a report that summarizes each annual consultation meeting required by Condition 13 to State Water Board staff no later than 60 days following each annual consultation meeting.

CONDITION 14: Extremely Dry Conditions

In the event PG&E requests modification of flow requirements due to extremely dry conditions pursuant to Condition 14, PG&E shall submit its proposed Revised Operations Plan to the State Wate Board's Deputy Director for Water Rights for review and approval and shall provide a summary of any comments received from interested parties regarding the proposed Revised Operations Plan and how the comments were addressed.