



Pacific Gas and Electric Company®

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STATE WATER RESOURCES CONTROL BOARD
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 DIV. OF WATER RIGHTS
 SACRAMENTO

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Via U.P.S. Next Day Air

Mr. Thomas Howard, Executive Director
 STATE WATER RESOURCES CONTROL BOARD
 1001 "I" Street
 Sacramento, CA 95814-2828

**Re: Chili Bar Hydroelectric Project, FERC Project No. 2155
 Request for Preparation of State Board Staff Record in Connection with
 Pacific Gas and Electric Company's Petition for Reconsideration of the Water
 Quality Certification for the Chili Bar Hydroelectric Project**

Dear Mr. Howard:

Pacific Gas and Electric Company ("PG&E") has filed its *Petition for Reconsideration of the Water Quality Certification for the Chili Bar Hydroelectric Project*, Federal Energy Regulatory Commission ("FERC") Project No. 2155. The Water Quality Certification was issued by you on November 9, 2012. As required by 23 California Code of Regulations § 3867(d)(9), PG&E requests that the State Water Board prepare the Staff Record, if available, for the Water Quality Certification in regard to PG&E's Chili Bar Hydroelectric Project which is designated as FERC Project No. 2155. This request for the Staff Record is a necessary part of the Petition for Reconsideration under the State Water Board's Regulations.

Any additional communications regarding this request should be directed to me at my telephone number listed above.

Thank you for your attention to this matter.

Very truly yours,

Matthew A. Fogelson
 Law Department

MAF:bd

- cc: Andrew H. Sawyer, SWRCB Asst. Chief Counsel – Water Rights & Tanks Branch,
 Via U.P.S. Next Day Air
- ✓ Mr. Les Grober, Division of Water Rights - SWRCB, Via U.P.S. Next Day Air
- Ms. Erin Ragazzi, Division of Water Rights - SWRCB, Via U.P.S. Next Day Air

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**BEFORE THE STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD**

**In the Matter of
Water Quality Certification for the
Chili Bar Hydroelectric Project**

FERC Project No. 2155

**PACIFIC GAS AND ELECTRIC COMPANY'S
PETITION FOR RECONSIDERATION
OF THE WATER QUALITY CERTIFICATION
FOR THE CHILI BAR HYDROELECTRIC PROJECT**

INTRODUCTION

On November 9, 2012, the Executive Director of the State Water Resources Control Board ("State Water Board"), acting pursuant to Section 401 of the federal Clean Water Act, 33 U.S.C. § 1341, issued a water quality certification ("Certification") for Pacific Gas and Electric Company's ("PG&E") Chili Bar Hydroelectric Project, Federal Energy Regulatory Commission ("FERC") Project No. 2155 ("Project"). The Certification was issued in draft form on January 11, 2012. By letter dated February 10, 2012, PG&E timely submitted comments on the draft Certification. PG&E recognizes and appreciates that several of its comments on the draft Certification were appropriately addressed in the final Certification. However, a few key comments were not. Consequently, PG&E is filing this Petition for Reconsideration ("Petition"), pursuant to Title 23 of the California Code of Regulations, § 3867(c).

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I. NAME AND ADDRESS OF PETITIONERS.

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II. SPECIFIC ACTION OF THE STATE WATER BOARD.

As noted above, on November 9, 2012, the State Water Board's Executive Director issued a Section 401 Certification for PG&E's Chili Bar Hydroelectric Project, FERC Project No. 2155. The Certification is Attachment A hereto. PG&E is also attaching the State Water Board's January 11, 2012 draft Certification as Attachment B hereto. PG&E's February 10, 2012 comments on the January 11, 2012 draft Certification is Attachment C hereto.

III. DATE ON WHICH THE STATE WATER BOARD ACTED.

The Certification is dated November 8, 2012, but was formally issued on November 9, 2012. PG&E is filing this Petition for Reconsideration on December 7, 2012 in compliance with the thirty (30) day deadline for filing such Petitions set forth at Title 23, § 3867(c) of the California Code of Regulations.

IV. STATEMENT OF REASONS WHY THE ACTION WAS INAPPROPRIATE OR IMPROPER.

On July 15, 2005, PG&E filed with FERC an application for new license for its existing Chili Bar Hydroelectric Project, a 7-megawatt project on the South Fork American River in El Dorado County. On September 18, 2006, PG&E filed with the State Water Board an application for water quality certification for the Project pursuant to Section 401 of the federal Clean Water Act, 33 U.S.C. § 1341. At the State Water Board's request, PG&E withdrew and simultaneously

re-filed its application for water quality certification on an annual basis each of the next six years.¹

The State Water Board issued the current Certification in draft form on January 11, 2012. By letter dated February 10, 2012, PG&E submitted comments on the draft Certification. PG&E was concerned, among other things, that the draft Certification was inconsistent with certain provisions of the Settlement Agreement for the Upper American River Project and the Chili Bar Hydroelectric Project, submitted to FERC on February 1, 2007, as well as with the Draft Water Quality Certification issued by the State Water Board for the Upper American River Project, FERC Project No. 2101. PG&E was also concerned that several of the conditions stated in the draft Certification were vague, unduly burdensome or without legal basis.

After PG&E submitted its comments on the draft Certification by letter dated February 10, 2012, PG&E spoke by telephone with State Water Board staff concerning its comments. While several of PG&E's comments were adequately addressed in the final Certification, other important comments were not. Consequently, PG&E is filing the instant Petition for Reconsideration.

V. MANNER IN WHICH THE PETITIONER IS AGGRIEVED.

A. Conditions 12, 17-21, 26 and 32-33 – Reservations of Authority

Conditions 12, 17, 18, 19, 20, 21, 26, 32, and 33 contain reservations of authority that purport to allow the State Water Board to change unilaterally the requirements of PG&E's FERC license. Such reservations of authority appear to contravene the express terms of the Federal

¹ The State Water Board requested that PG&E serially withdraw and re-file its certification application because the State Water Board's failure to act on a certification application within one year constitutes a waiver of § 401's certification requirement. 33 U.S.C. §1341(a)(1). PG&E accommodated the State Water Board's request by letters dated May 22, 2007; May 7, 2008; April 23, 2009; April 6, 2010; March 25, 2011; and February 27, 2012.

Power Act, which provides in relevant part that “Licenses . . . may be altered . . . only upon mutual agreement between the Licensee and the Commission. . . .” 16 U.S.C. § 799. Moreover, Section 401 of the federal Clean Water Act, 33 U.S.C. § 1341, does not allow a water quality certification to be withdrawn once it is issued. Consequently, PG&E questions whether these Conditions are permissible expressions of the State Water Board’s authority and respectfully requests that they be re-drafted to conform to such authorities.

B. Condition 32 – Due Process

At a minimum, sufficient due process must be afforded PG&E before the State Water Board acts to change any certification conditions. Condition 32 is lacking in this regard. It provides as follows: “The State Water Board **may** provide notice and an opportunity to be heard in exercising its authority to add or modify any of the conditions of this certification” (emphasis supplied). To ensure that PG&E is afforded legally sufficient due process protections consistent with other water quality certifications issued by the State Water Board, PG&E respectfully requests that Condition 32 be amended to read: “The State Water Board **shall** provide notice and an opportunity to be heard in exercising its authority to add or modify any of the conditions of this certification” (emphasis supplied). Similar language conferring an unconditional right to receive notice and an opportunity to be heard before the State Water Board acts to modify a water quality certification is found in numerous water quality certifications issued by the State Water Board.² There can be no justification for its exclusion here.

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² See e.g. *Water Quality Certification for the Spring Gap-Stanislaus Hydroelectric Project*, FERC Project No. 2130, Condition 33 (Order WR 2009-0039); *Water Quality Certification for the Pit 3, 4 & 5 Hydroelectric Project*, FERC Project No. 233, Condition 25 (Order WQ 2007-001); *Water Quality Certification for the Department of Water Resources Oroville Facilities*, FERC Project No. 2100, Condition G12 (Order WQ 2010-0016).

C. Condition 33 -- Revocation

Condition 33 states that “this certification is subject to modification or revocation upon administrative or judicial review, . . .” (emphasis supplied). As noted above, Section 401 of the federal Clean Water Act, 33 U.S.C. § 1341, does not allow a water quality certification to be withdrawn once it is issued. Consequently, PG&E requests that the State Water Board delete the language “or revocation” from this condition. State Water Board staff previously agreed to delete this language from the corresponding conditions in the Water Quality Certifications for both PG&E’s Pit 3, 4 & 5 Project and Spring Gap-Stanislaus Project.³ PG&E respectfully requests the same consideration here.

D. Condition 22 - Basin Plan

Condition 22 provides as follows: “This certification is contingent on compliance with all applicable requirements of the Basin Plan.”

PG&E objects to this condition as unduly vague since it purports to require PG&E to comply with “all applicable requirements” of the water quality plan for the Sacramento and San Joaquin River Basins, yet fails to state which of the literally hundreds of requirements contained in that Basin Plan are in fact “applicable” to PG&E. As a result, PG&E would essentially have to guess as to what the “applicable requirements” were at any given time. In addition to being unworkable, PG&E believes it is unfair for a compliance determination to hinge on the opinion of future regulators as to what may or may not have been intended as an “applicable requirement” of such a lengthy document, particularly one that is routinely changed from time to time.

³ See *Water Quality Certification for the Spring Gap-Stanislaus Hydroelectric Project*, FERC Project No. 2130, Condition 29 (Order WR 2009-0039); *Water Quality Certification for the Pit 3, 4 & 5 Hydroelectric Project*, FERC Project No. 233, Condition 21 (Order WQ 2007-001).

Importantly, State Water Board staff agreed to delete this condition from the final water quality certifications issued for both the Spring Gap-Stanislaus and Pit 3, 4 & 5 projects after PG&E objected (on the same grounds) to their inclusion in the draft certifications for those projects.⁴ PG&E respectfully requests similar consideration here.

D. Condition 12 – Reintroduction of Anadromous Fish

Condition 12 states that “[i]t is possible that anadromous fish passage will be restored at Nimbus and/or Folsom Dams on the American River downstream of Chili Bar during the course of the Commission license term.” The Condition requires PG&E “prior to the restoration of fish passage” to consult with the resource agencies and the State Water Board “to determine whether changes are needed in the certification conditions to protect beneficial uses associated with anadromous fish.” The Condition further reserves to the Deputy Director authority to modify or add conditions to the certification based on the outcome of the consultation process.

As authority for this Condition, the Certification cites to the National Marine Fisheries Service’s (“NMFS”) March 2009 Biological and Conference Opinion on the Long-term Operation of the Central Valley Project and State Water Project (“Biological Opinion”). The Certification notes that the NMFS Biological Opinion includes a measure to evaluate the feasibility of providing access for steelhead to habitat above Nimbus and Folsom Dams.

PG&E objects to this Condition on several grounds and respectfully requests that it be withdrawn. First, the March 2009 NMFS Biological Opinion on which the Draft Condition is based was found by the U.S. District Court for the Eastern District of California to be “arbitrary,

⁴ Compare *Draft Water Quality Certification for the Spring Gap-Stanislaus Project*, FERC Project No. 2130, Draft Condition 23, with *Water Quality Certification for the Spring Gap-Stanislaus Hydroelectric Project*, FERC Project No. 2130 (Order WR 2009-0039); and *Draft Water Quality Certification for the Pit 3, 4 & 5 Project*, FERC Project No. 233, Draft Condition 13 with *Water Quality Certification for the Pit 3, 4 & 5 Hydroelectric Project*, FERC Project No. 233 (Order WQ 2007-001).

capricious, and unlawful,” and was remanded to NMFS. *See In re Salmonid Consolidated Cases*, 791 F.Supp.2d 802, 959 (E.D.Cal. 2011). The Court further ordered NMFS to submit a revised final Biological Opinion by February 1, 2016. *Id.*, 1:09-CV-01053 LJO DLB (E.D. Cal., Dec. 12, 2011). PG&E suggests that, given its legal infirmities, the relied-upon Biological Opinion does not provide a sufficient legal basis for the imposed Condition.

Second, PG&E believes the Condition is unduly vague. The requirement that PG&E consult with the resource agencies and the State Water Board “prior to the restoration of fish passage” fails to provide a comprehensible standard. An appropriate standard, if this condition remains, would be for the licensee to consult with the resource agencies and the State Water Board within 120 days after physical completion and initiation of operation of fish passage facilities at Nimbus and/or Folsom Dams.

Finally, as noted above, PG&E questions whether the State Water Board has the statutory authority to change unilaterally the requirements of a FERC license by imposing additional requirements sometime in the future.

E. Condition 21 – Climate Change

Condition 21 provides as follows:

Future changes in climate projected to occur during the license term may significantly alter the baseline assumptions used to develop the conditions in this certification. The State Water Board reserves authority to modify or add conditions in this certification to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water quality objectives and protect the beneficial uses assigned to Project-affected stream reaches.

PG&E objects to this Condition on the grounds that it is inappropriate to require PG&E to mitigate for a harm to which the Project is not contributing. There must be some nexus

between the condition and a project effect that is contributing to the identified harm. Given that the Project is not a cause of climate change, that nexus is lacking here.

In addition, and as noted above, PG&E questions whether the State Water Board has the statutory authority to change unilaterally the requirements of a FERC license by imposing additional requirements sometime in the future.

At a minimum, PG&E respectfully requests that the first sentence of Condition 21 be stricken.

VI. SPECIFIC ACTION OF THE STATE WATER BOARD REQUESTED BY THE PETITIONERS.

PG&E requests that the final Certification be modified in the manner described in Section V above.

VII. LIST OF INTERESTED PARTIES.

Please see attached Certificate of Service representing designated parties to the State Water Board proceedings.

VIII. STATEMENT THAT COPIES OF THIS PETITION HAVE BEEN SENT TO THE REGIONAL WATER BOARD.

A true and correct copy of this Petition for Reconsideration was sent, *via U.P.S. Next Day Air*, on December 6, 2012 to the Central Valley Regional Water Quality Control Board at the following address:

Mr. Robert Busby
Supervising Water Resources Control Engineer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Also, please see the attached Certificate of Service.

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IX. A COPY OF A REQUEST TO THE EXECUTIVE DIRECTOR TO PREPARE THE STATE WATER BOARD RECORD.

PG&E has submitted a request, dated December 6, 2012, to the Executive Director of the State Water Board for the preparation of the Staff Record related to the Certificate, if available, in connection with this Petition. A copy of this Request for Preparation of a State Board Staff Record, as required by 23 CCR § 3867(d)(9), is Attachment D hereto.

X. SUMMARY OF THE MANNER IN WHICH THE PETITIONER PARTICIPATED IN ANY PROCESS LEADING TO THE ACTION IN QUESTION.

PG&E explained its participation in the process leading to issuance of the final Certification in Section IV above.

Respectfully submitted,

By:



MATTHEW A. FOGELSON

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Dated: December 6, 2012

ATTACHMENT A

**SWRCB's
Water Quality Certification for
Federal Permit or License for
Pacific Gas and Electric Company's
Chili Bar Hydroelectric Project
November 8, 2012**

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for

**PACIFIC GAS AND ELECTRIC COMPANY'S
CHILI BAR HYDROELECTRIC PROJECT
FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2155**

Sources: South Fork American River

County: El Dorado County

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

BY THE EXECUTIVE DIRECTOR:

I. Project Description

Pacific Gas and Electric Company (PG&E or Licensee) owns and operates the Chili Bar Hydroelectric Project (Project), Federal Energy Regulatory Commission (Commission) Project No. 2155 located on the South Fork American River (SF American River) in El Dorado County near the city of Placerville, as shown in Attachment A.

The Project was constructed in 1964 by the Sacramento Municipal Utility District (SMUD) as compensation for the loss of the Licensee's American River Project (Commission Project No. 78), which is now inundated by SMUD's Upper American River Hydroelectric Project (UARP) due to the construction of Slab Creek Dam. SMUD's interest in the Project was transferred to the Licensee on March 22, 1965. The initial Commission license for the Project was issued on July 31, 1962, for a term ending July 31, 2007, and has operated under annual licenses since that time.

The Project is located in the foothills of the Sierra Nevada mountain range in the SF American River watershed, which drains approximately 598 square miles at a location just downstream of the Project. The 19.1 mile section of the SF American River from the Project downstream to Folsom Lake is one of the most popular whitewater rafting river reaches in the country. The reach ranges in elevation from 960 feet above mean sea level (MSL) at the base of Chili Bar Dam to 470 feet above MSL at the bottom of the reach, which is the normal maximum water surface elevation for Folsom Lake. Folsom Lake is part of the United States Bureau of Reclamation's Central Valley Project.

The current Project boundary encompasses 254.63 acres, of which the Licensee owns 191.76 acres, the United States Bureau of Land Management (BLM) owns 47.81 acres, and other private parties own 15.06 acres. The Licensee proposes to revise the Project boundaries by reducing the Project area to 103.14 acres. The Licensee's license application states that the new Project boundaries are consistent with the Commission's regulations and that the proposed boundaries enclose all land and structures necessary

for the operation and maintenance of the Project. The proposed changes in land ownership are shown in Table 1 below.

Table 1. Current and Proposed Project Property Ownership		
Ownership	Existing Project Acreage	Proposed Project Acreage
BLM	47.81	15.02
Licensee	191.76	87.04
Private	15.06	1.08
Total	254.63	103.14

The Project facilities consist of:

- A 126-foot (ft) high by 380-ft long concrete gravity dam on the SF American River;
- A 170-ft long dam spillway that has a crest elevation of 997.5 feet (National Geodetic Vertical Datum [NGVD]) located 31 feet below the top of the dam;
- A reservoir with a surface area of 110 acres and a useable storage capacity of 1,339 acre-feet at the spillway crest elevation; and
- An 80-square-ft powerhouse containing a single turbine unit with a normal maximum gross head of 60 feet, a maximum hydraulic capacity of 1,979 cubic feet per second (cfs), and an installed capacity of seven megawatts.

The Licensee first applied for water quality certification for the Project on September 18, 2006. The Licensee subsequently withdrew and simultaneously re-filed its application on May 22, 2007, May 7, 2008, April 23, 2009, April 6, 2010, March 25, 2011, and February 27, 2012. The State Water Resources Control Board (State Water Board) provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 on June 2, 2009, and posted information describing the Project on the Division of Water Rights' website. No comments were received on the Project application.

II. Project Operations

The Project utilizes water from the SF American River for power generation under a claim of riparian rights filed with the State Water Board, Division of Water Rights under Statement of Water Diversion and Use No. 10399. In addition, SMUD and PG&E are jointly named on two state-issued water rights (License Nos. 11073 and 11074) and the Licensee is partially assigned the use of SMUD's water rights License Nos. 10513, 10495, and 10496, for which Chili Bar Powerhouse is listed as a point of rediversion and place of use. Chili Bar Powerhouse is also listed as a point of rediversion and place of use on two new water rights permits issued to SMUD in 2011 (Permit Nos. 21261 and 21262). These water rights include water diverted from the Rubicon River watershed that would normally flow into the Middle Fork American River.

Chili Bar Reservoir has no seasonal or long-term storage capability. Operation of the Project is largely controlled by SMUD's UARP facilities via releases from Slab Creek Dam (located 7.5 miles upstream on the SF American River) and White Rock Powerhouse (located at the upstream end of Chili Bar Reservoir), except during winter storms, and spring snowmelt flood events that may cause spills upstream of the Project. White Rock Powerhouse has a peak flow capacity almost twice that of the Project's powerhouse; consequently spill events at Chili Bar Dam are common.

Current Commission license conditions do not require formal operational coordination between the Licensee and SMUD; however the two projects have at times been coordinated in response to requests from recreational boating interest groups and agencies. In general, SMUD typically forecasts recreational streamflow availability for the SF American River downstream of the Project in the spring with estimates of minimum streamflow magnitude and days of the week that recreational streamflows can be expected. Without the seasonal storage of water made possible by the UARP, boatable flows (i.e., flows greater than 1,300 cfs) would generally not occur in the SF American River below the Project much beyond early June in dry years and late July in wet years.

In 1982, SMUD became a signatory to an agreement with the California Department of Boating and Waterways (*Agreement for Operation of Slab Creek Reservoir, July 15, 1982*) that calls for SMUD to make good faith efforts to provide sufficient water to the Project to enable the release of recreational rafting flows between April 1 and September 30 when the California Department of Water Resources' (DWR) forecast for total unimpaired runoff into Folsom Reservoir is greater than 50 percent of the long-term average.

III. Commission Proceeding and Settlement Agreement

The Licensee used a modified Traditional Licensing Process for the relicensing proceeding that involved public input and collaboration. Due to the existence of many overlapping relicensing issues that are common to the Project and the UARP proceedings, many studies and technical reports were developed and coordinated through the Licensee's participation in the UARP's Alternative Licensing Process. The Licensee filed an application for a new license with the Commission on July 15, 2005. Settlement negotiations between the Licensee, SMUD and state and federal resources agencies and other interested stakeholders (Settlement Negotiation Group or SNG) began prior to submittal of the Licensee's license application; however, the SNG did not reach settlement prior to the statutory deadline for filing the license application with the Commission.

Following the state and federal agencies filing of recommendations, prescriptions, and terms and conditions with the Commission, the SNG reconvened to continue negotiating a comprehensive settlement in the relicensing of the UARP and the Project, which led to an Agreement in Principle that was filed with the Commission on November 16, 2006. A final *Relicensing Settlement Agreement for the Upper American River Project and Chili Bar Hydroelectric Project (SA)* was filed with the Commission on January 31, 2007. The Settling Parties consist of PG&E, SMUD, California Department of Fish and Game (CDFG), California Department of Parks and Recreation (CDPR), United States Forest Service (USFS), BLM, United States Fish and Wildlife Service (USFWS), National Park Service, American River Recreation Association and Camp Lotus, California Outdoors, California Sportfishing Protection Alliance, Friends of the River, American Whitewater, Foothill Conservancy, Theresa Simsiman, Hilde Schweitzer, and Rich Platt. Although not a signatory to the SA, State Water Board staff participated in the settlement discussions for the purpose of providing information and guidance.

The SA includes approval by multiple agencies for many of its provisions, including many that affect water quality; however, this water quality certification does not require approvals by agencies outside of the State Water Board. The settlement process and water quality certification are distinct processes, and the State Water Board has an independent responsibility to ultimately ensure that the Licensee implements the certification conditions necessary to protect water quality standards. The State Water

Board requires consultation with the agencies with approval authority under the SA, and expects that the parties will fulfill their contractual obligations and go through the approval process when there are multiple agencies with jurisdiction over various measures.

As part of the SA, the Licensee agreed to construct the following recreation improvements at Chili Bar Reservoir within three years of license issuance:

- A gravel parking area for three to four vehicles off Rock Creek Road;
- A 36-inch-wide trail that has a slope of five percent or less from the parking area to Chili Bar Reservoir;
- A kiosk sign along the trail near the beginning of the trail, explaining the rules of the area; and
- One picnic table of coated wire-mesh material in a leveled out area that is outside of the Chili Bar Reservoir floodplain.

In addition to the measures contained in the SA, the Licensee included, as part of the proposed Project, measures to assure that impacts to air quality and cultural resources associated with the construction of the recreation improvements at Chili Bar Reservoir are minimized. The proposed Project includes measures to reduce fugitive dust during the construction period and to address the potential discovery of human remains during construction of the recreation improvements.

IV. Rationale for Water Quality Certification Conditions

In making its decision, the State Water Board reviewed and considered: (a) the SA; (b) the Licensee's Application for New License; (c) BLM Final Section 4(e) Mandatory Conditions¹; (d) the Commission's Environmental Impact Statement (EIS) for UARP and the Project prepared jointly with USFS pursuant to the National Environmental Policy Act; (e) comments on the License Application and draft EIS by agencies and interested parties; (f) the Initial Study and Negative Declaration prepared for the State Water Board; and (g) public comments received on the draft water quality certification and the Initial Study and Draft Negative Declaration. Further, the State Water Board considered the Central Valley Regional Water Quality Control Board's (Central Valley Water Board) *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan)², the existing water quality conditions, and Project-related controllable factors.

The Basin Plan identifies the following beneficial uses for the SF American River from the source to Placerville, and from Placerville to Folsom Reservoir (which includes the Project): municipal and domestic supply; irrigation; hydropower generation; water contact recreation; canoeing and rafting; non-contact water recreation; cold freshwater habitat; warm freshwater habitat; and wildlife habitat.

Resource objectives for the SF American River downstream of Chili Bar Dam identified by state and federal agencies during the relicensing proceeding include: maintaining adequate habitat for Foothill Yellow Legged-Frogs (FYL frogs) and Western Pond Turtles; minimizing the negative effect of fluctuating flows associated with fish stranding;

¹ The Federal Power Act provides that federal land management agencies can prescribe mandatory conditions on hydroelectric projects that inhabit federal land. (16 USC § 797)

² The Basin Plan can be found on the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml (last visited August 22, 2012).

maintaining connectivity with tributary streams; reducing or eliminating water quality conditions that encourage algal growth; maintaining adequate quantities of large woody debris in the river channel; and assuring that sediment is adequately distributed throughout the reach. Resource objectives for Chili Bar Reservoir also include maintaining adequate habitat for native hardhead (*Mylopharodon conocephalus*), a fish species of special concern.

The SF American River downstream of the Project is subject to daily flow fluctuations due to UARP operations and streamflow management that is focused on recreational use. These flow fluctuations may limit feeding behavior in fish and increase the risks of stranding during rapid dewatering. Minimum streamflows proposed for the SF American River downstream of the Project were designed to provide access into tributary streams with perennial connectivity to the river, to maintain spawning and nursery habitat, and to maintain refugia for fish and other aquatic species. The minimum streamflows were also developed to increase the wetted perimeter to provide more suitable habitat for benthic macroinvertebrates, the primary food for fish. The ramping rates were developed to preclude abrupt flow fluctuations that may adversely affect aquatic species and lead to stranding.

The recreational streamflow schedule for the Project was developed based on recognition of the regional importance of whitewater recreation on the SF American River downstream of Chili Bar Dam. The flow schedule addresses the need to have reliable, boatable flows of sufficient duration to provide for a quality river experience, to reduce crowding, to address potential safety concerns, and to reduce resource impacts associated with boating activities.

The water quality monitoring program will provide data to assess compliance with state and federal water quality standards. The monitoring data will provide regulatory agencies the ability to identify water quality trends over time, assess risks to human health and wildlife, and assure that measures to intervene are implemented if water quality degradation is observed. Annual water temperature monitoring will provide information to determine whether the cold freshwater habitat beneficial use is adequately protected in the SF American River.

Fish population monitoring will be conducted for two consecutive years at defined intervals during the license term to provide a two-year mean value for comparison to fish biomass objectives. Periodic monitoring for the presence and distribution of special-status amphibian and reptile species and identification of breeding and larval periods provides information to evaluate potential impacts resulting from streamflow modifications (particularly short-term fluctuations) and to assess population trends during the license term.

Periodic monitoring of riparian vegetation species composition is important to determine whether riparian areas are in proper functioning condition or if riparian areas need restoration. Monitoring for the presence of *Didymosphenia geminata* (also commonly known as rock snot) will indicate whether this invasive algal species is creating nuisance conditions or causing adverse impacts to the aquatic ecosystem. In addition, the adaptive management program requires the Licensee to develop and implement measures to reduce nuisance algae in the event that monitoring indicates adverse impacts to water quality are occurring.

Reservoirs have the potential to impound sediments and organic materials that may contain heavy metals which can bioaccumulate in resident fish populations. Periodic monitoring for silver, mercury, copper and lead bioaccumulation in fish tissues during the license term will provide updated information regarding health risks to humans and wildlife due to changes in the concentrations of heavy metals.

The Project is located upstream of Nimbus and Folsom Dams, which are part of the federally-operated Central Valley Project. The National Marine Fisheries Service (NMFS) issued its Biological and Conference Opinion on the Long-term Operation of the Central Valley Project and State Water Project (NMFS B.O.) in March 2009. The NMFS B.O. contains measures that are deemed necessary to avoid jeopardizing the continued existence of the Central Valley California Steelhead Evolutionary Significant Unit, which includes the American River. Those measures include a provision to evaluate the feasibility of providing access for steelhead to their historic coldwater habitat above Nimbus and Folsom Dams. Consultation between the Licensee, fisheries agencies, and the State Water Board, prior to any restoration of fish passage, is included as a condition of this certification to determine whether changes in the certification conditions are needed to protect beneficial uses associated with anadromous fish.

V. Regulatory Authority

The Federal Clean Water Act (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 101 of the Clean Water Act (33 U.S.C. § 1251) requires federal agencies to "co-operate with the state and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."

Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the Clean Water Act, including water quality standards and implementation plans promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Section 401 of the Clean Water Act directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the Clean Water Act and with any other appropriate requirement of state law. Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the project. The State Water Board is the state agency responsible for such certification in California. (Wat. Code § 13160.) The State Water Board has delegated this function to the Executive Director by regulation. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

The Central Valley Water Board adopted, and the State Water Board and the United States Environmental Protection Agency (USEPA) approved, the Basin Plan. The Basin Plan designates the beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. Section 303 of the Clean Water Act requires the states to develop and adopt water quality standards. (33 U.S.C. § 1313.) The beneficial uses together with the water quality objectives that are contained in the basin plans and state and federal anti-degradation requirements constitute California's water quality standards.

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT OPERATION OF THE CHILI BAR HYDROELECTRIC PROJECT BY PACIFIC GAS AND ELECTRIC COMPANY will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if the Licensee complies with the following terms and conditions during the Project activities certified herein.

CONDITION 1. Minimum Instream Flows to Protect Aquatic Life Beneficial Uses

Within three months of license issuance, the Licensee, in consultation with the UARP Licensee (SMUD), shall maintain streamflows in the SF American River below Chili Bar Dam as set forth in the schedule in Table 2, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows³. The compliance point for the measurement of the required minimum streamflows shall be United States Geological Survey (USGS) gage 11444500 (PG&E gage A49). All specified streamflows are in cfs. The schedule specifies minimum streamflows by month and six water year types denoted as: Wet, Above Normal (AN), Below Normal (BN), Dry, Critically Dry (CD), and Super Dry (SD). Water year types are described further in the next section.

Month	Minimum Streamflow by Water Year Type (cfs)*					
	SD	CD	DRY	BN	AN	WET
October	150	185	200	250	250	250
November	150	185	200	200	200	250
December	150	185	200	200	200	250
January	150	185	200	200	200	250
February	150	185	200	200	200	250
March	150	185	200	200	200	250
April	150	200	250	250	300	350
May	150	200	250	250	350	500
June	200	200	250	250	350	500
July	150	185	200	250	300	350
August	150	185	200	250	300	300
September	150	185	200	250	250	250

*As measured at USGS gauge 11444500 (PG&E gauge A49)

The minimum streamflows specified in the schedule may be temporarily modified if required by equipment malfunction, operating emergencies or public safety emergencies, which are reasonably beyond the control of the Licensee. If the streamflow is so modified, the Licensee shall provide Notice to the Commission, BLM, CDFG, USFWS, and the State Water Board's Deputy Director of the Division of Water Rights (Deputy Director) as soon as possible, but no later than 10 days after such an incident. The minimum streamflows specified may also be

³ To comply with the flow requirements of the water quality certification (i.e., minimum instream flows, ramping rates, recreational flows), the Project generally must receive adequate inflows of water in a timely manner from SMUD's UARP. As noted in Condition 4 of this certification (Coordination with UARP Licensee), the Licensee shall develop a plan and coordinate Project operations with the UARP Licensee (SMUD) to enable compliance with Conditions 1-3 of this certification.

temporarily modified for short periods in non-emergency situations five days after Notice to the Commission, and upon approval by the Deputy Director.

Where facility modification is needed to maintain the specified minimum streamflows, the Licensee shall complete such modifications as soon as reasonably practicable and no later than three years after license issuance. Prior to such facility modifications, the Licensee shall make a good-faith effort to provide the specified minimum streamflows within the capabilities of the existing facilities.

In order for the Licensee to adjust operations to meet the required minimum streamflows, the Licensee shall have a three-year period after the license is issued or three years after completion of necessary facility modifications, whichever is later, in which daily mean streamflows may vary up to 10 percent below the amounts specified in the minimum streamflow schedules, provided that the average monthly streamflow in any given month equals or exceeds the required minimum streamflow for the month. After the applicable three-year period, the Licensee shall meet the minimum streamflow requirements specified in the minimum streamflow schedules, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows.

Water Year Types. The Licensee shall determine the water year type based on the water year forecast of unimpaired runoff in the American River below Folsom Lake that is published near the beginning of each month from February through May in DWR's Bulletin 120 "*Report of Water Conditions in California.*" Specifically, the "American River Below Folsom Lake" forecast is currently shown in the "Water Year Forecast" column of the "Water Year Unimpaired Runoff" table in Bulletin 120. The water year types are defined as follows:

<u>Year Type</u>	<u>American River Water Year Forecast</u>
Wet	greater than or equal to 3.500 million acre-feet (MAF)
AN	greater than or equal to 2.600 MAF but less than 3.500 MAF
BN	greater than or equal to 1.700 MAF but less than 2.600 MAF
Dry	greater than or equal to 0.900 MAF but less than 1.700 MAF
CD	less than 0.900 MAF
SD	any CD year that is immediately preceded by a Dry or CD year or any Dry year that is immediately preceded by any combination of two Dry or CD years

Each month from February through May the Licensee shall determine the water year type based on the DWR Bulletin 120 forecast and shall operate for that month based on the most recent forecast beginning three days after issuance of the forecast and continuing until two days after issuance of the subsequent monthly forecast. The May forecast shall be used to establish the final water year type for the remaining months of the water year and the month of October. The water year type for the months of November through January shall be based on DWR's Full Natural Flow record for the American River at Folsom (California Data Exchange Center site AMF sensor 65) for the preceding water year, and the Licensee shall operate based on that record beginning November 1. The Licensee shall provide Notice to the Commission, CDFG, USFWS, and the Deputy Director of the final water year type determination within 30 days of the May forecast.

CONDITION 2. Ramping Rates to Protect Aquatic Life Beneficial Uses

As early as is reasonably practicable and within three months after license issuance the Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall use the

ramping rates shown in Table 3 for Licensee-controlled streamflow releases, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these ramping rates³:

Table 3. SF American River below Chili Bar Dam Ramping Rates*	
Ramp Up	Ramp Down
Streamflow change of 500 cfs or less per hour for flows between 150 cfs and 1,000 cfs	Stage change of 1 foot or less per hour for flows between 1,950 cfs and 1,000 cfs
Stage change of 1 foot or less per hour for flows above 1,000 cfs and below 1,950 cfs	Streamflow change of 500 cfs or less per hour for flows below 1,000 cfs and above 600 cfs
	Streamflow change of 250 cfs or less per hour for flows between 600 cfs and 150 cfs

* As measured at USGS gauge 11444500 (PG&E gauge A49).

Where facility modification is needed to provide the specified ramping rates, the Licensee shall complete such modification as soon as reasonably practicable and no later than three years after license issuance. Prior to facility modifications, the Licensee shall make every reasonable effort to provide the specified ramping rates within the capabilities of the existing facilities. The Licensee shall make the streamflow records related to ramping available to BLM, CDFG, USFWS, and the Deputy Director, upon request.

Should the ramping rates specified in Table 3 be infeasible due to equipment malfunction, operating emergencies or public safety emergencies reasonably beyond the control of the Licensee, or whenever water spills occur over Chili Bar Dam, the Licensee shall provide Notice to the Commission, BLM, CDFG, USFWS and the Deputy Director as soon as possible, but no later than 10 days after such incidents. The Licensee may also request short-term modification of the ramping rates in non-emergency situations by providing Notice to the Commission and obtaining approval from the Deputy Director for a temporary deviation from the required ramping rates.

The Licensee shall provide notice of non-spill emergencies to BLM, CDFG, USFWS and the Deputy Director within 10 days after such an event occurs and shall provide a report documenting the reason that ramping rates were not followed within one month after the event occurs.

CONDITION 3. Recreational Streamflows to Protect Recreational Use

As early as is reasonably practicable and within three months after license issuance, the Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall maintain minimum recreational streamflows in SF American River below Chili Bar Reservoir Dam as set forth in Table 4, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these flows³. For compliance purposes, the point of measurement for the required minimum streamflows shall be USGS gage 11444500 (PG&E gage A49). All specified recreational streamflows are in cfs. The schedule specifies minimum recreational streamflows, by season, day of the week, and water year type. The water year types are the same as those defined in Condition 1 (Minimum Instream Flows). Although the required minimum streamflow duration can extend beyond the times shown below, they must be provided during the specific times as follows:

- A. Minimum recreational streamflows scheduled for three hours shall meet or exceed the specified minimum from 9:00 am until at least noon.

- B. Minimum recreational streamflows scheduled for four hours shall meet or exceed the specified minimum from 8:00 am until at least noon.
- C. Minimum recreational streamflows scheduled for five hours shall meet or exceed the specified minimum from 7:00 am until at least noon on Saturdays and 8:00 am until at least 1:00 pm on Sundays.
- D. Minimum recreational streamflows scheduled for six hours shall meet or exceed the specified minimum from 7:00 am until at least 1:00 pm.

If, as a result of consultation with CDPR and BLM, the Deputy Director determines that changes are needed in the timing of the recreational streamflow releases shown above, the Deputy Director will direct the Licensee to implement a new schedule. The Licensee shall adjust the timing of the recreational streamflow releases to meet the new schedule provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these flows.

The minimum recreational streamflows specified in the schedules may be temporarily modified upon the occurrence of the following events:

- A state or federal electrical emergency is declared by an appropriate authority where specific orders are issued or specific actions are mandated by said authority that require the Licensee to produce electricity outside normal planned operations;
- System events cause the Operating Reserves to drop below the Western Energy Coordinating Council Minimum Operating Reliability Criteria; or
- Equipment malfunction, public safety emergency, or law enforcement activity.

Additionally, recreational streamflows specified at 1,750 cfs may be reduced to 1,500 cfs during scheduled unit outages. However, the Licensee shall make a good faith effort to avoid scheduling unit outages when recreational streamflows of 1,750 cfs are required. If the recreational streamflow is so modified, the Licensee shall provide Notice to the Commission, BLM, CDPR, and the Deputy Director as soon as possible, but no later than 10 days after such incident.

Where facility modification is required to maintain the specified minimum recreational streamflows, the Licensee shall complete such modifications as soon as reasonably practicable and no later than three years after license issuance. Prior to such required facility modifications, the Licensee shall make every reasonable effort to provide the specified minimum recreational streamflows within the capabilities of the existing facilities.

CONDITION 4. Coordination with UARP Licensee (SMUD)

The Licensee shall coordinate operation of the Project with the Licensee of the UARP (SMUD) to enable the Licensee to comply with Condition 1 (Minimum Instream Flows), Condition 2 (Ramping Rates), and Condition 3 (Recreational Streamflows) in this water quality certification. Each Licensee's responsibilities for achieving coordinated operations of the two projects are described in the *Cooperation Agreement Between Sacramento Municipal Utility District and Pacific Gas and Electric Company Regarding Upper American River Project and Chili Bar Project (Cooperation Agreement)*⁴.

⁴ As stated in the Coordination Agreement, "SMUD agrees to provide to Company [PG&E] Operational Guidance and sufficient water inflows into Chili Bar Reservoir to enable Company to comply with the conditions of the Chili Bar license, and Company agrees to follow such Operational Guidance in a manner that will comply with the flow-related Chili Bar license conditions."

Table 4. Minimum Recreational Flow for SF American River below Chili Bar Dam by Water Year Type, Duration and Flow in cfs

Water Year Type	Period	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Super Dry	April 1 - Friday before Memorial Day	3 Hrs @ 1300	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300
	Memorial Day - Labor Day ¹	3 Hrs @ 1300	---	---	3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1300	5 Hrs @ 1300
	Tuesday after Labor Day - September 30	---	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300
	October 1 - March 31	---	---	---	---	---	3 Hrs @ 1300	---
Critically Dry	March 1 - Friday before Memorial Day	3 Hrs @ 1300	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300
	Memorial Day - Labor Day ¹	3 Hrs @ 1300	---	---	3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1500	5 Hrs @ 1500
	Tuesday after Labor Day - September 30	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300
	October 1 - February 28/29	---	---	---	---	---	3 Hrs @ 1300	---
Dry	March 1 - Friday before Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300	---	---	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	Memorial Day - Labor Day ¹	3 Hrs @ 1300	3 Hrs @ 1300	---	3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1500	5 Hrs @ 1500
	Tuesday after Labor Day - September 30	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300
	October 1 - February 28/29	---	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300
Below Normal	March 1 - Friday before Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300	---	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	Memorial Day - Labor Day ¹	3 Hrs @ 1300	3 Hrs @ 1300	---	3 Hrs @ 1300	3 Hrs @ 1300	6 Hrs @ 1500	6 Hrs @ 1500
	Tuesday after Labor Day - September 30	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	October 1 - 31	3 Hrs @ 1300	---	---	---	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November 1 - February 28/29	---	---	---	---	---	3 Hrs @ 1300	3 Hrs @ 1300
Above Normal	March 1 - Friday before Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	4 Hrs @ 1750	4 Hrs @ 1750
	Memorial Day - Labor Day ¹	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Tuesday after Labor Day - September 30	---	---	---	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500
	October 1 - 31	3 Hrs @ 1300	---	---	---	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November 1 - February 28/29	---	---	---	---	---	3 Hrs @ 1500	3 Hrs @ 1500
Wet	March 1 - Friday before Memorial Day	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Memorial Day - Labor Day ¹	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Tuesday after Labor Day - September 30	---	---	---	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500
	October 1 - 31	3 Hrs @ 1300	---	---	---	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November 1 - February 28/29	---	---	---	---	---	3 Hrs @ 1500	3 Hrs @ 1500

¹ The "Memorial Day -- Labor Day" period refers to Saturday of Memorial Day weekend through Monday of Labor Day weekend.

As specified in the SA, the Licensees of the UARP (SMUD) and the Project (PG&E) must jointly prepare and file with the Commission within 120 days after license issuance, a plan for coordinated operations of the two projects as described in the Cooperation Agreement. To provide the opportunity for review and approval of the Plan by the Deputy Director prior to submittal to the Commission, PG&E shall submit the Plan to the Deputy Director within 90 days after issuance of the UARP and Project licenses, or if the licenses are issued separately, the latter of the two. The Deputy Director may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. If Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the Plan with the Commission; however, Deputy Director approval is required prior to Plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval. The Licensee shall implement the Plan upon receiving all necessary approvals. Amendments or modifications to the approved Plan shall be approved by the Deputy Director prior to implementation.

In addition to the coordination described above related to compliance with streamflow conditions, the Licensee shall consult and coordinate with the Licensee of the UARP in implementation of Condition 5 (Adaptive Management Program), Condition 6 (Monitoring Program), Condition 7 (Sediment Management Plan), and Condition 11 (Streamflow and Reservoir Level Public Information Services) of this water quality certification.

CONDITION 5. Adaptive Management Program

The Licensee shall, beginning as early as reasonably practicable and within three months after license issuance, in consultation and coordination with the UARP Licensee (SMUD), implement an adaptive management program as described below. The program shall generally consist of: (a) implementation of a monitoring program; (b) analysis of data for trends to identify and address Project-related impacts or effects on beneficial uses and/or water quality; and (c) specific adaptive management measures that shall be implemented if the monitoring program and other information indicate that the applicable resource objectives identified in the Rationale Report⁵ will likely not be met without adjustment of the initial conditions. Monitoring shall be conducted to determine if the applicable resource objectives are achievable and being met.

Analysis of the monitoring results shall be used to determine the need for adaptive management measures. Adaptive management decisions shall be made in conjunction with the USFS, BLM, CDFG, and State Water Board staff as part of the Annual Review of Ecological Conditions (Condition 10) based on monitoring results and other scientific information and a determination that the applicable ecological resource objectives identified in the Rationale Report are not being met and will likely not be met without application of the adaptive management measures. For purposes of the adaptive management program, each year is defined on a calendar year basis (i.e., January through December). Year 1 is defined as the first year during which all initial streamflows required by the license are implemented by May 1.

⁵ *Rationale Report for Relicensing Settlement Agreement* submitted by CDFG to the Commission on January 29, 2007.

A. Coordinated Operations

Coordinated operations, described above in Condition 4 (Coordination with UARP Licensee), shall be reviewed annually to determine if the operations are effective in achieving the ecological and recreational streamflows in the SF American River downstream of Chili Bar Reservoir Dam, as defined previously in Condition 1 (Minimum Instream Flows), Condition 2 (Ramping Rates), and Condition 3 (Recreational Streamflows) of this certification. As outlined in Condition 4, any amendments or modifications to the approved coordination of operations plan shall be approved by the Deputy Director prior to implementation.

B. Invasive Algae

If the monitoring required in Condition 6.H. (Algae) indicates that invasive algae are present and are creating nuisance conditions, the Licensee shall develop adaptive measures to reduce or eliminate the problem, submit them to the Deputy Director for approval, and implement the measures upon approval. The Deputy Director may require modifications as part of the approval.

CONDITION 6. Monitoring Program

The Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall implement the following Monitoring Program after license issuance and throughout the term of the new license and any annual licenses, in coordination with BLM, CDFG, USFWS, and State Water Board staff.

The Licensee shall ensure that the final monitoring plan for each element of the Monitoring Program is provided for review to BLM, CDFG, USFWS, and the Deputy Director. Each element of the final monitoring plan must be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of the approval. Each monitoring element is described below.

BLM, CDFG, USFWS, and the Deputy Director may alter the monitoring program methodologies and frequencies of data collection if it is determined that: (a) there is a more appropriate or preferable methodology or site to use than that described in the individual elements of the monitoring program; or (b) monitoring may be reduced or terminated because the relevant ecological resource objectives have been met or no change in resource response is expected. Within the scope of the specified monitoring program, BLM, CDFG, USFWS, and the Deputy Director may select an equal number of alternative years to ensure that surveys occur during a range of water year types. Modifications made to the monitoring plans must be approved by the Deputy Director prior to implementing the modified monitoring plan.

The Licensee shall prepare an annual report that fully describes the monitoring efforts of the previous calendar year, which includes the data collected and associated analysis. BLM, CDFG, USFWS, and State Water Board staff shall have at least 30 days to review and comment on a draft report prior to the filing of the final report with the Commission. The Licensee shall provide copies of the final annual report to BLM, CDFG, USFWS, and the Deputy Director.

The following guidelines shall be used in implementing the monitoring program: (a) monitoring and studies shall be relevant to the Project; (b) monitoring and studies shall be conducted such that they provide useful information for management decisions or for establishing compliance with license conditions; and (c) monitoring and studies shall be as cost-effective as possible.

For purposes of the adaptive management program required in Condition 5, each year is defined on a calendar year basis (i.e., January through December). This monitoring program covers monitoring to be conducted during all years until a subsequent license is issued. Where years are specified, Year 1 is the first year during which all initial minimum instream flows required by the license are implemented by May 1.

6.A. Fish Populations

The Licensee shall develop a fish population monitoring plan in consultation with BLM, CDFG, USFWS, and the State Water Board. After agency consultation and within two years of license issuance, the Licensee shall submit the Plan to the Deputy Director for review and approval. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

Method: Electrofishing and/or snorkeling, as conducted by the Licensee in 2003-2004. Electrofishing shall be conducted along the stream margins at the snorkel survey sites as needed to verify species identifications made during snorkel surveys, to obtain length-weight relationships, and to capture species that are difficult to observe while snorkeling. Any hardhead that are detected shall be noted.

Locations⁶: SF American River below Chili Bar Reservoir Dam at upper and lower sample section of the following two snorkel sites: CB-F1 (approximately 1.7 miles downstream at the "Old Flume" memorial); and CB-F4 (near the confluence with Weber Creek).

Frequency: Years 5, 6, 10, 11, 15, 16, and thereafter for two consecutive years every 10 years for the term of the license and any annual extensions.

6.B. Aquatic Macroinvertebrates

The Licensee shall develop an aquatic macroinvertebrate monitoring plan in consultation with BLM, CDFG, USFWS, and State Water Board staff. After agency consultation and within two years of license issuance, the Licensee shall submit the Plan to the Deputy Director for review and approval. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

Method: A method accepted by BLM, CDFG, USFWS, and State Water Board staff. The results shall be compared to an aquatic health index specified in the Plan approved by the Deputy Director.

⁶ Sample site designations are the same as those used in the technical reports that were completed and filed with the Commission during the relicensing proceeding.

Locations⁶: SF American River below Chili Bar Reservoir Dam at CB-I1 (downstream of Georgetown Road Bridge) and CBI4 (near Camp Lotus).

Frequency: Years 5, 6, 10, 11, 15, 16, and thereafter for two consecutive years every 10 years for the term of the license and any annual extensions.

6.C. Amphibians and Reptiles

The Licensee shall develop an amphibian and reptile habitat evaluation and species presence monitoring plan in consultation with BLM, CDFG, USFWS, and State Water Board staff. After agency consultation and within one year of license issuance, the Licensee shall submit the Plan to the Deputy Director for review and approval. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the plan upon receiving all necessary approvals.

Method: Conduct protocol surveys for FYL frogs (special status, sensitive species); and California Red-Legged Frogs (CRL frogs, a federal Endangered Species Act (ESA)-listed amphibian species) using the procedures of the USFWS⁷ and the Licensee⁸, or the most current survey protocol approved by the Deputy Director. The surveys shall be conducted in a sub-sample of appropriate habitat types to document species presence and distribution. The Licensee shall also survey for Western Pond Turtle during FYL frog surveys.

The Licensee shall identify amphibian breeding and larval periods in the SF American River downstream of the Project by surveying locations where amphibians are known to occur during spring/summer. The first iteration of surveys shall be used to determine the timing and success of the following life stages of any existing known FYL frog populations: egg laying; tadpole rearing; metamorphosis; and size/condition of metamorphs in late September to estimate the probability of overwintering success. Based on review of the first year's data, for subsequent years the Deputy Director, after consultation with BLM, USFWS, and CDFG, may approve a subset of survey sites or a less intensive program. In the future, BLM, USFWS, CDFG, or the Deputy Director may request additional breeding site habitat data to assess the cause of unexpected or chronic reproductive failures that may be related to Project operations.

Locations⁶: SF American River below Chili Bar Reservoir Dam along the entire reach from CB-A15 (near Scott Road) downstream to Ponderosa Campground (near Highway 49 Bridge) on the right and left banks.

Frequency: Years 2, 3, 5, 6, 10, 11, 15, 16, and thereafter for two consecutive years every five years for the term of the license and any annual extensions.

⁷ USFWS. 1997. Guidance on site assessment and field surveys for California red-legged frogs (*Rana aurora draytonii*).

⁸ Seltenrich, C. P. and A. C. Pool. 2002. A standardized approach for habitat assessments and visual encounter surveys for the foothill yellow-legged frog (*Rana boylei*). PG&E.

6.D. Riparian Vegetation Species Composition

The Licensee shall develop a riparian vegetation monitoring plan in consultation with BLM, CDFG, USFWS, and State Water Board staff. After agency consultation and within two years of license issuance, the Licensee shall submit the Plan to the Deputy Director for review and approval. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

Method: Aerial photo flights and greenline method.⁹ The data collected at each site will include transects to document species composition, percent cover, and quantification of length and width of riparian community.

Locations: The five Intensive Field Study Sites (riparian) that were surveyed in the Riparian Report filed with the Commission as part of the Licensee's application for new license on July 15, 2005.

Frequency: Years 5, 10 and 15 after license issuance. Thereafter every 10 years (e.g., Years 25, 35, 45, etc.) for the term of the license and any annual extensions.

6.E. Water Temperature

Within three months of license issuance, the Licensee shall consult with State Water Board staff, BLM, USFWS, and CDFG on the development of a Water Temperature Monitoring Plan consistent with the method and frequencies described below. After agency consultation and within one year of license issuance, the Licensee shall submit the Plan to the Deputy Director for review and approval. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. If Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the Plan with the Commission; however, Deputy Director approval is required prior to Plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

Method: Continuous temperature recording devices shall be installed and maintained at a minimum of four stream temperature stations as designated below. Reservoir temperature profiles may be added if BLM, CDFG, USFWS, and State Water Board staff determine that Chili Bar Reservoir temperatures are a controllable factor in the SF American River downstream of the Project or if water chemistry monitoring in the reservoir indicates a need for additional temperature information.

⁹ The *Riparian Vegetation and Wetlands Technical Report* (Riparian Report) defines the greenline as "...the first perennial vegetation that forms a lineal grouping of community types on or near the water's edge..." As presented in the Riparian Report, each greenline is described by the cumulative distance in feet occupied by each community type.

Locations: Initial monitoring sites shall be determined in consultation with BLM, CDFG, USFWS, and State Water Board staff. Up to two additional stream sites may be added if temperature problems are identified through review of monitoring data and annual consultation with USFS, CDFG, USFWS, and State Water Board staff (Condition 10). The final monitoring sites and any subsequent modifications shall be approved by the Deputy Director. At a minimum, the water temperature plan shall provide for monitoring at the following locations:

- A. SF American River immediately below Chili Bar Dam;
- B. SF American River upstream of Dutch Creek confluence;
- C. SF American River immediately upstream of Camp Lotus; and
- D. SF American River immediately upstream of Greenwood Creek.

Frequency: For the preceding monitoring sites (A – D above), the Licensee shall conduct continuous monitoring from March 15 through October 15 in all years after license issuance until a subsequent license is issued or until it can be demonstrated by the Licensee that operation of the Project reasonably protects the "cold freshwater" beneficial use as determined by BLM, the Deputy Director, USFWS, and CDFG.

If a determination is made that Chili Bar Reservoir temperature profiles are required, seasonal temperature profiles shall be collected at locations specified by the agencies during multiple water year types to develop data necessary for decision-making. Some temperature stations may be deleted if the Deputy Director, in consultation with BLM, USFWS, and CDFG, finds that sufficient temperature data have been collected and that no significant issues related to temperature are evident for the relevant area.

6.F. Water Quality

Within three months of license issuance, the Licensee shall consult with BLM, CDFG, State Water Board staff, USFWS, and the Central Valley Water Board on the development of a Water Quality Monitoring Program Plan (WQ Monitoring Plan). The WQ Monitoring Plan shall include the water quality monitoring elements listed below, and must: (1) provide detail on field sampling locations, sampling frequency, handling methods and quality assurance/quality control; and (2) define the laboratory analyses and associated method detection limits for all constituents and parameters to be monitored in the various elements of the monitoring program.

Following consultation and within six months of license issuance, the Licensee shall submit the WQ Monitoring Plan to the Deputy Director for review and approval. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. If Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the Plan with the Commission; however, Deputy Director approval is required prior to Plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

The approved WQ Monitoring Plan shall be implemented by the Licensee as described, throughout the term of the license and any annual extensions. The WQ Monitoring Plan may be modified pursuant to adaptive management program needs as recommended by State Water Board staff, BLM, CDFG, USFWS, and the Central Valley Water Board, and after approval by the Deputy Director.

Water Chemistry

The Licensee shall conduct a water chemistry sampling program designed to demonstrate seasonal conditions at Chili Bar Reservoir and stream locations affected by operation of the Project, as described in the relicensing Water Quality Study Plan (Plenary approval, January 8, 2003). Laboratory analyses shall be conducted using USEPA analytical methods or other methods that are sensitive enough for determination of compliance with recognized state and federal water quality criteria.

a. Annual In Situ Monitoring

- Method: Monitoring for physical parameters (pH, water temperature, dissolved oxygen, specific conductance, and turbidity) using USEPA analytical methods or other methods sensitive enough to determine compliance with recognized state and federal water quality criteria.
- Locations: SF American River downstream of Chili Bar Reservoir at representative locations as defined in the final WQ Monitoring Plan. In situ physical parameters shall be monitored in Chili Bar Reservoir as vertical profiles collected at one-meter intervals from surface to bottom.
- Frequency: For stream reaches, once seasonally in spring (April-May), summer (August), fall (November) and winter (January-February) each year after license issuance for the term of the license and any annual extensions. For Chili Bar Reservoir, spring (April-May) and fall (November) each year after license issuance for the term of the license and any annual extensions. When possible, in situ water quality monitoring should be completed coincident with amphibian, fisheries, and macroinvertebrate monitoring.

b. General Chemistry Monitoring

- Method: Measurement of in situ parameters and water sampling for the analysis of minerals, nutrients, metals (total and dissolved fractions), measured hardness, and petroleum products shall be conducted.
- Locations: General chemistry samples shall be collected from Chili Bar Reservoir and at a minimum of three representative sites along the SF American River between Chili Bar Dam and the confluence of Greenwood Creek. Reservoir samples shall be collected at the surface and near the bottom at multiple, representative locations, as defined in the final WQ Monitoring Plan.
- Frequency: Beginning in Year 3 after license issuance, and every five years thereafter for the term of the license and any annual extensions. Sampling shall be conducted in the spring, summer, fall, and immediately following either the second or third measurable rain event of the fall-winter period. After a minimum of three data

sets are collected, if it is demonstrated that constituents of concern do not exceed regulatory criteria at specific locations, the Licensee may request that the Deputy Director approve modifications to the sampling frequency. The Deputy Director may make modifications as part of the approval.

Bacteria

Method: The Licensee shall conduct bacterial monitoring for fecal coliform and/or *E.coli* consistent with Basin Plan objectives for protection of the REC-1 beneficial use. Five near-shore samples shall be collected at each of the eight sampling locations during the 30-day period that spans either the Independence Day Holiday (June-July) or the Labor Day Holiday (August-September), using the five samples in 30-day methodology or other protocol as amended in the Basin Plan.

Locations: Samples shall be collected at a minimum of eight shoreline recreational locations in the SF American River downstream of Chili Bar. Sampling locations shall be selected based on criteria that include: (1) swimming and other water contact recreation activities that are known to occur in the area; and (2) sources for potential introduction of pathogens to the water column in the immediate vicinity. Candidate sites for annual REC-1 pathogen monitoring will include developed recreation sites and frequently used white water boating take-out sites along the SF American River downstream of Chili Bar Reservoir Dam. The bacterial monitoring program shall include sampling at a minimum of four swim beach sites, including the Coloma and Camp Lotus areas, along with four other selected stations. The Licensee, in consultation with BLM, CDFG, State Water Board staff, USFWS, and the Central Valley Water Board shall determine sampling locations for each upcoming field season. The Licensee shall consult with State Water Board staff and other listed parties for final determination of the locations to be sampled no later than May 31 of each designated sampling year and shall submit the list of sampling locations to the Deputy Director for approval. The Deputy Director may make modifications as part of the approval.

Frequency: Bacterial monitoring shall be conducted annually for the first five years after license issuance. Upon approval by the Deputy Director, bacterial monitoring may be decreased in frequency to every other year if data demonstrates compliance with the Basin Plan bacteria objective for protection of REC-1 designated waters during Years 1 through 5. Monitoring shall continue through the term of the license and any annual extensions.

If data demonstrate that bacterial concentrations present risks to human health at specific stream sites, the Licensee shall notify the Central Valley Water Board and shall continue annual monitoring at those sites until such time that the Licensee consults with State Water Board staff (and any other interested parties) and agreement is reached that the monitoring frequency can be reduced and the Deputy Director has approved the change in monitoring frequency.

6.G. Metals Bioaccumulation

Method: The Licensee shall monitor for potential uptake of mercury, copper, lead, and silver through the aquatic food chain resident in Chili Bar Reservoir. Target fish species, numbers of individuals to be analyzed, sampling strategy, and analytical

methods used shall be consistent with the State Water Board's Surface Water Ambient Monitoring Program (or other water quality monitoring program approved by the Deputy Director). The metals bioaccumulation monitoring plan shall be submitted to the Deputy Director for review and approval prior to each sampling event after Licensee consultation with BLM, CDFG, State Water Board staff, Central Valley Water Board, USFWS, and the state Office of Environmental Health Hazard Assessment. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval.

Locations: Resident fish species shall be collected from Chili Bar Reservoir.

Frequency: Once every five years beginning in Year 2 following license issuance. Monitoring shall continue through the term of the license and any annual extensions.

6.H. Algae

Method: Monitoring for the presence of *Didymosphenia geminata* (invasive diatomaceous algae that is also known as rock snot) through visual observation.

Locations: At representative sites in the SF American River downstream of Chili Bar Reservoir Dam, in conjunction with the Annual In Situ Monitoring described in the Water Chemistry monitoring portion of Section 6.F. (Water Quality).

Frequency: The Licensee shall monitor for *Didymosphenia geminata* in stream reaches seasonally in conjunction with Annual In Situ Monitoring as described in the Water Chemistry monitoring portion of this certification (Section 6.F. Water Quality).

CONDITION 7. Sediment Management Plan

Within one year of license issuance, the Licensee shall, in consultation and coordination with the UARP Licensee (SMUD), plan and implement a geomorphology monitoring program to be performed once every five years for the duration of the license term and any annual extensions. The following data will be collected in the SF American River downstream of Chili Bar Reservoir Dam at three sites identified in the *2005 Channel Morphology Technical Report* as: CB-G1 (Upper Canyon Site); CB-G2 (Upper Coloma Site); and CB-G3 (Lower Coloma Site):

- A. Bed profile measurements at three cross-sectional transects.
- B. Longitudinal profile extending through the vicinity of the three cross-sectional transects.
- C. Bed characterization using pebble count to determine substrate composition at the three cross-sectional transects.
- D. Channel stability and bank characterization using Pfankuch characteristics.
- E. Large woody debris characterization within the site.

If the Licensee, in consultation with the UARP Licensee (SMUD), elects to dredge Chili Bar Reservoir, the Licensee will consult with the resource agencies (i.e., BLM, CDFG, USFWS and State Water Board staff) in the development of a Sediment Management Plan including

consideration of depositing the material in the SF American River downstream of Chili Bar Reservoir Dam. The Licensee shall submit the plan to the Deputy Director for review and approval, after consultation with the resource agencies. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval.

The Sediment Management Plan shall be implemented upon and after approval by the Deputy Director. Prior to initiating dredging, the Licensee shall consult with the United States Army Corps of Engineers to determine if a Clean Water Act Section 404 permit is required for the dredging activities, and if so, shall obtain said permit and a Clean Water Act Section 401 Water Quality Certification from the Central Valley Water Board.

CONDITION 8. Large Woody Debris for Protection of Aquatic Life Beneficial Uses

The Licensee shall ensure that mobile instream large woody debris in Chili Bar Reservoir continues downstream beyond Chili Bar Reservoir Dam. The mobilization of large woody debris shall be performed under circumstances that permit safe access and working conditions using reasonable means, which includes short-term spill flows at the dam. At a minimum, all large woody debris with dimensions greater than both 20 centimeters in width and 12 meters in length shall be allowed to continue downstream beyond the dam. Smaller sizes are also allowed but are not required to be moved beyond the dam. To assure compliance with this measure, the Licensee shall include in the annual monitoring report required in Condition 6 (Monitoring Program) a summary of the efforts made during the year to assure that large woody debris continues downstream beyond Chili Bar Reservoir Dam.

CONDITION 9. Streamflow and Reservoir Elevation Gaging

The Licensee shall, within one year of license issuance, develop and file for Commission approval a Streamflow and Reservoir Elevation Gaging Plan (Gaging Plan) that meets USGS standards. The Licensee shall develop the initial draft version of the Gaging Plan in consultation with the USGS. The Licensee shall provide copies of the draft Gaging Plan and USGS review results to BLM, CDFG, USFWS, the Commission, and State Water Board staff for review and comment. Following agency consultation, the Gaging Plan and any comments received from the agencies shall be submitted to the Deputy Director for review and approval prior to filing the plan with the Commission. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. If Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the Gaging Plan with the Commission; however, Deputy Director approval is required prior to Gaging Plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval. The Licensee shall implement the Gaging Plan upon receiving all necessary approvals.

At a minimum, the Gaging Plan shall address compliance gaging at the following locations:

- A. Streamflow Gaging at SF American River below Chili Bar Reservoir Dam (existing USGS gage number 11444500 or its successor).
- B. Reservoir Elevation Gaging at Chili Bar Reservoir.

CONDITION 10. Annual Review of Ecological Conditions

Each calendar year, by April 1, the Licensee shall schedule and facilitate a meeting with the CDFG, BLM, USFWS, and State Water Board staff to review and discuss the results of implementing the conditions in this certification. The meeting shall also include discussion of other issues related to restoring and protecting ecological values affected by the Project, including implementation of Condition 5 (Adaptive Management Program).

The Licensee shall provide CDFG, BLM, USFWS, and State Water Board staff with an operations and maintenance plan for the coming year at least two weeks prior to the meeting. The Licensee shall also make every effort to provide the agencies with the annual monitoring report (required per Condition 6) at least 10 days prior to the meeting. If the annual monitoring report is not available, the Licensee shall provide available information and data to the agencies at least 10 days prior to the meeting.

CONDITION 11. Streamflow and Reservoir Level Public Information Services

The Licensee shall, in consultation and coordination with the UARP Licensee (SMUD), BLM, State Water Board staff, and the Consultation Group¹⁰, prepare a plan to provide public information on streamflow and reservoir level. The Licensee shall file the plan with the Commission within six months of license issuance. The plan shall be submitted to the Deputy Director for review and approval prior to filing with the Commission. The Licensee shall provide the Deputy Director with any comments received during the consultation process. The Deputy Director shall be provided with a 60-day review and approval period. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. If Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the Plan with the Commission; however, Deputy Director approval is required prior to Plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

The plan shall include at a minimum, the following components:

- A. Real-time lake stage height and storage information for Chili Bar Reservoir.
- B. Installation of up to two simple staff gages for use by the public.
- C. Real-time streamflow and reservoir level information that is available to the public year-round via a toll-free telephone number or other appropriate technology approved by BLM.
- D. Streamflow information on a website, which is collected consistent with standard USGS gaging practices for the existing stream gage facilities downstream of Chili Bar Reservoir Dam (USGS gage 11444500 or its successor) that includes 15-minute increments and stream flows releases from the past seven days.

Following approval of the plan by the Deputy Director, the minimum streamflow and recreational streamflow schedules from Conditions 1 and 3 (Minimum Instream Flows and Recreational Streamflows), as well as the current water year type designation, shall be published via the website.

¹⁰ The SA defines the Consultation Group as including all parties to the SA with the addition of the State Water Board, the Central Valley Water Board, and El Dorado County.

CONDITION 12. Reintroduction of Anadromous Fish

It is possible that anadromous fish passage will be restored at Nimbus and/or Folsom Dams on the American River downstream of the Project during the course of the Commission license term. Prior to the restoration of fish passage at Nimbus and/or Folsom Dams, the Licensee shall consult with CDFG, USFWS, NMFS and State Water Board staff to determine whether changes are needed in the certification conditions to protect beneficial uses associated with anadromous fish. The Deputy Director reserves authority to modify or add conditions to this certification based on the outcome of the consultation process.

CONDITION 13. Hazardous Materials Plan

Within one year of license issuance or prior to undertaking activities on BLM lands, whichever occurs first, the Licensee shall file with the Commission a plan approved by BLM and the Deputy Director for hazardous substances storage and spill prevention and cleanup. The plan shall be submitted to the Deputy Director for review and approval prior to filing the plan with the Commission. The Deputy Director shall be provided with a 90-day review and approval period. The Deputy Director may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. If Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the Plan with the Commission; however, Deputy Director approval is required prior to Plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

In addition, during planning and prior to any new construction or maintenance/repair activities not addressed in an existing plan approved by the Deputy Director, the Licensee shall notify the BLM and State Water Board staff. The BLM and the Deputy Director shall determine if an additional plan or updates for hazardous substances storage and spill prevention and cleanup are needed. Any such plan or updates shall be filed with the Commission following approval by the Deputy Director.

At a minimum, the plan must require the Licensee to: (1) maintain a contact list of names and numbers for the Licensee, and federal, state and local officials responsible for responding to hazardous waste spills; (2) maintain in the Project area a cache of spill cleanup equipment suitable to contain any spill from the Project; (3) periodically inform BLM of the location of the spill cleanup equipment on BLM lands and of the location, type, and quantity of oil and hazardous substances stored in the Project area; and (4) immediately inform the California Emergency Management Agency, BLM, El Dorado County, CDFG, Central Valley Water Board and the State Water Board of the magnitude, nature, time, date, location, and action taken for any spill. The plan shall identify the potential corrective actions and monitoring that will be implemented if a spill occurs.

CONDITION 14. Water Quality Protection During Recreation Facility Construction

The Licensee is required to construct new recreation facilities to provide access to Chili Bar Reservoir as part of the SA. These facilities are described above in Section III "Commission Proceeding and Settlement Agreement" of this certification. No later than four months prior to initiating construction activities for the new recreation facilities, the Licensee shall submit to the Deputy Director for review and approval a plan that describes the best management practices that will be taken to minimize impacts to water quality during construction. The Deputy Director

may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required Plan modifications, with the Commission. The Licensee shall implement the Plan upon receiving all necessary approvals. These measures should include the following, where applicable:

- Control measures for erosion, excessive sedimentations and turbidity shall be implemented and be in place at commencement of, during and after any ground clearing activities, excavation, or any other project activities that could result in erosion or sediment discharges to surface waters.
- Construction material, debris, spoils, soil, silt, sand, bark, slash, sawdust, rubbish, steel, or other organic or earthen material from any construction activity shall be prevented from entering surface waters.
- All equipment must be washed prior to transport to the project site and must be free of sediment, debris and foreign matter. All equipment using gas, oil, hydraulic fluid or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (motors, pumps, generator, etc.) shall be positioned over drip pans or other types of containment. Spill and containment equipment (oil spill booms, sorbent pads, etc.) shall be maintained onsite at all locations where such equipment is used or staged.
- All construction debris and trash shall be contained and regularly removed from the work area to the staging area during construction activities. Upon completion, all project-generated debris, building materials, excess material, waste, and trash shall be removed from all the project sites for disposal at an authorized landfill or other disposal site.
- Erosion control blankets, liners with berms, and/or other erosion control measures shall be used for any stockpile of excavated material to control runoff resulting from precipitation.

General Conditions

CONDITION 15. Unless otherwise specified in this water quality certification or at the request of the State Water Board, data and/or reports must be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.

CONDITION 16. The State Water Board's approval authority includes the authority to withhold approval or to require modification of a proposal or plan prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required plan in a timely manner.

CONDITION 17. The State Water Board reserves the authority to modify the conditions of this water quality certification to incorporate load allocations developed in a total maximum daily load developed by the State Water Board or a Regional Water Quality Control Board (Regional Water Board).

- CONDITION 18.** 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 implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.
- CONDITION 19.** The State Water Board may add to or modify the conditions of this certification as appropriate to coordinate the operations of the Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to achieve water quality objectives or protect beneficial uses of water.
- CONDITION 20.** The State Water Board reserves authority to modify this certification if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair the beneficial uses of the SF American River or its tributaries.
- CONDITION 21.** Future changes in climate projected to occur during the license term may significantly alter the baseline assumptions used to develop the conditions in this certification. The State Water Board reserves authority to modify or add conditions in this certification to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water quality objectives and protect the beneficial uses assigned to Project-affected stream reaches.
- CONDITION 22.** This certification is contingent on compliance with all applicable requirements of the Basin Plan. The Licensee must notify the Deputy Director and Central Valley Water Board's Executive Officer (Executive Officer) within 24 hours of any unauthorized discharge to surface waters.
- CONDITION 23.** 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 must take all reasonable measures to protect the beneficial uses of waters of the SF American River and tributaries.
- CONDITION 24.** This certification does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish & Game Code §§ 2050-2097) or the federal ESA (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 must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Licensee is responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.
- CONDITION 25.** In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is 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.

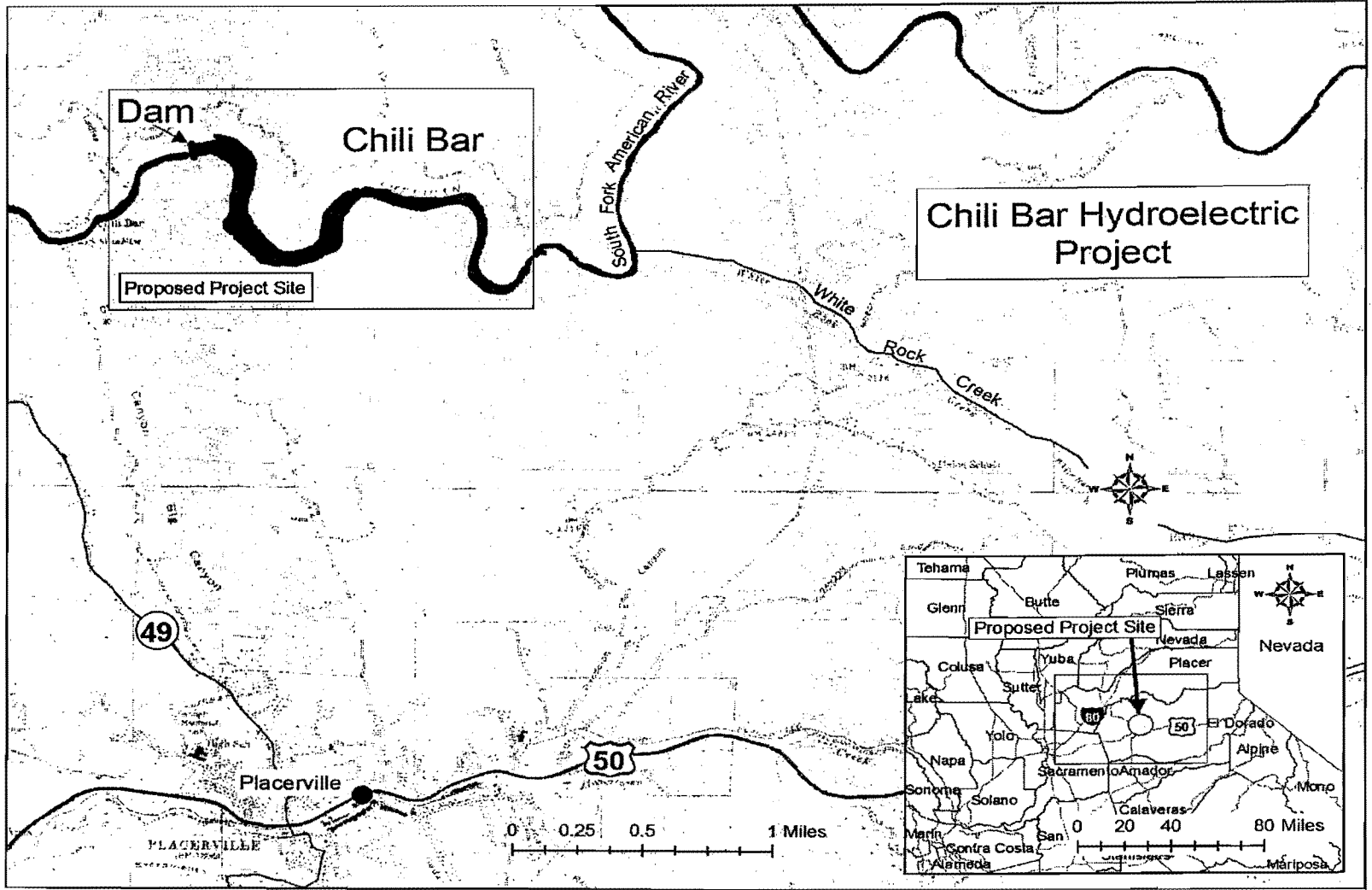
- CONDITION 26.** In response to a suspected violation of any condition of this certification, the State Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems 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 (California Water Code, §§ 1051, 13165, 13267 and 13383). The State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.
- CONDITION 27.** No construction shall commence until all necessary federal, state, and local approvals have been obtained.
- CONDITION 28.** Any requirement in this water quality certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.
- CONDITION 29.** The Licensee must submit any change to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. If such a change would also require submission to the Commission, the change must first be submitted and approved by the State Water Board, unless otherwise noted in this certification.
- CONDITION 30.** When Commission approval is required for a plan, if Deputy Director approval is not received 14 calendar days prior to an applicable Commission deadline, the Licensee may file the plan with the Commission; however, Deputy Director approval is required prior to plan implementation. The Licensee must amend its filing with the Commission if modifications are made as part of the Deputy Director's subsequent approval.
- CONDITION 31.** The Licensee must provide State Water Board staff access to Project sites to document compliance with this certification.
- CONDITION 32.** The State Water Board may provide notice and an opportunity to be heard in exercising its authority to add or modify any of the conditions of this certification.
- CONDITION 33.** This certification is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to California Water Code Section 13330 and California Code of Regulations, Title 23, Division 3, Chapter 28, Article 6 (commencing with Section 3867).
- CONDITION 34.** Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Commission license or an amendment to a Commission license unless the pertinent certification application was filed pursuant to Subsection 3855(b) of Article 4, Title 23 of the California Code of Regulations and that application specifically identified that a Commission license or amendment to a Commission license for a hydroelectric facility was being sought.
- CONDITION 35.** Certification is conditioned upon total payment of any fee required under Article 4, Title 23 of the California Code of Regulations.

CONDITION 36. Activities associated with operation or maintenance of the Project that threaten or potentially threaten water quality shall be subject to further review by the Deputy Director and the Executive Officer.

Thomas Howard
Thomas Howard
Executive Director

11/8/12
Date

Attachment A: Location Map



ATTACHMENT A - LOCATION MAP

ATTACHMENT B

**DRAFT of
SWRCB's
Water Quality Certification for
Federal Permit or License for
Pacific Gas and Electric Company's
Chili Bar Hydroelectric Project**

**Draft Released for Public Comment on
January 11, 2012**

DRAFT CHILI BAR WATER QUALITY CERTIFICATION

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

COPY

In the Matter of Water Quality Certification for

**PACIFIC GAS AND ELECTRIC COMPANY
CHILI BAR HYDROELECTRIC PROJECT
FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2155**

Sources: South Fork American River

Counties: El Dorado County

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

Draft released for public comment on **January 11, 2012**

Comments due by 12:00 PM on February 13, 2011 to:

Jennifer Watts
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 98512-2000

or by email to jwatts@waterboards.ca.gov

DRAFT CHILI BAR WATER QUALITY CERTIFICATION

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for

**PACIFIC GAS AND ELECTRIC COMPANY
CHILI BAR HYDROELECTRIC PROJECT
FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2155**

Sources: South Fork American River

County: El Dorado County

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

BY THE EXECUTIVE DIRECTOR:

Project Description

1. Pacific Gas and Electric Company (PG&E or Licensee) owns and operates the Chili Bar Hydroelectric Project (Chili Bar), Federal Energy Regulatory Commission (Commission) Project No. 2155 located on the South Fork American River (SF American River) in El Dorado County near the city of Placerville, as shown in Attachment A.
2. The Chili Bar hydroelectric facility was constructed in 1964 by the Sacramento Municipal Utility District (SMUD) as compensation for the loss of PG&E's American River Project (Project No. 78), which is now inundated by SMUD's Upper American River Hydroelectric Project (UARP) due to the construction of Slab Creek Dam. SMUD's interest in Chili Bar was transferred to PG&E on March 22, 1965. The initial Commission license for Chili Bar was issued on July 31, 1962, for a term ending July 31, 2007. Chili Bar has operated under annual licenses since that time.
3. Chili Bar is located in the foothills of the Sierra Nevada mountain range in the SF American River watershed, which drains approximately 598 square miles at a location just downstream of Chili Bar Dam. The 19.1 mile section of the SF American River from Chili Bar Dam downstream to Folsom Lake is one of the most popular whitewater rafting river reaches in the country. The reach ranges in elevation from 960 feet above mean sea level (MSL) at the base of Chili Bar Dam to 470 feet above MSL at the bottom of the reach, which is the normal maximum water surface elevation for Folsom Lake. Folsom Lake is part of the United States Bureau of Reclamation's Central Valley Project.

DRAFT CHILI BAR WATER QUALITY CERTIFICATION

4. The current Chili Bar project boundary encompasses 254.6 acres of which PG&E owns 192.6 acres, the United States Bureau of Land Management (BLM) owns 47.8 acres, and other private parties own 14.2 acres. PG&E proposes to revise the project boundary by reducing the acreage to 103.1 acres. PG&E's license application states that the new Chili Bar boundary is consistent with the Commission's regulations and that the proposed boundary encloses all land and structures necessary for the operation and maintenance of Chili Bar. The proposed changes in land ownership are shown in Table 1 below.

Ownership	Existing Project Acreage	Proposed Project Acreage
BLM	47.81	15.02
PG&E	191.75	87.04
Private	15.04	1.08
Total	254.60	103.14

5. Chili Bar facilities consist of:
- a 126-foot (ft) high by 380-ft long concrete gravity dam on the SF American River;
 - a 170-ft long dam spillway that has a crest elevation of 997.5 feet (National Geodetic Vertical Datum [NGVD]) located 31 feet below the top of the dam;
 - a reservoir with a surface area of 110 acres and a useable storage capacity of 1,339 acre-feet at the spillway crest elevation; and
 - an 80-square-ft powerhouse containing a single turbine unit with a normal maximum gross head of 60 feet, a maximum hydraulic capacity of 1,979 cubic feet per second (cfs), and an installed capacity of seven megawatts.
6. PG&E first applied for water quality certification for Chili Bar on September 18, 2006, and subsequently withdrew and simultaneously re-filed its application on May 22, 2007, and again on May 7, 2008, April 23, 2009, April 6, 2010, and March 25, 2011. The State Water Resources Control Board (State Water Board) provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 on June 2, 2009, and posted information describing Chili Bar on the Division of Water Rights' website. No comments were received on the Chili Bar application.

Project Operations

7. Chili Bar utilizes water from the SF American River for power generation under a claim of riparian rights filed with the State Water Board, Division of Water Rights under Statement of Diversion and Water Use No. 10399. In addition, SMUD and PG&E are jointly named on two state-issued water rights (License Nos. 11073, 11074) and PG&E is partially assigned the use of SMUD's water rights Licenses Nos. 10513, 10495, and 10496, for which Chili Bar Powerhouse is listed as a point

DRAFT CHILI BAR WATER QUALITY CERTIFICATION

of redirection and place of use. Chili Bar Powerhouse is also listed as a point of redirection and place of use on two new water rights permits issued to SMUD in 2011 (Permit Nos. 21261 and 21262). These water rights include water diverted from the Rubicon River watershed that would normally flow into the Middle Fork American River.

8. Chili Bar Reservoir has no seasonal or long-term storage capability. Operation of Chili Bar is largely controlled by SMUD's UARP facilities via releases from Slab Creek Dam (located 7.5 miles upstream on the SF American River) and White Rock Powerhouse (located at the upstream end of Chili Bar Reservoir), except during winter storms, and spring snowmelt flood events that may cause spills upstream of Chili Bar. White Rock Powerhouse has a peak flow capacity almost twice that of Chili Bar's powerhouse; consequently spill events at Chili Bar Dam are common.
9. Current Commission license conditions do not require formal operational coordination between PG&E and SMUD, however the two projects have at times been coordinated in response to requests from recreational boating interest groups and agencies. In general, SMUD typically forecasts recreational streamflow availability for the SF American River downstream of Chili Bar in the spring with estimates of minimum streamflow magnitude and days of the week that recreational streamflows can be expected. Without the seasonal storage of water made possible by the UARP, boatable flows (i.e. flows greater than 1,300 cfs) would generally not occur in the SF American River below Chili Bar Dam much beyond early June in dry years and late July in wet years.
10. In 1982, SMUD became a signatory to an agreement with the California Department of Boating and Waterways (*Agreement for Operation of Slab Creek Reservoir, July 15, 1982*) that calls for SMUD to make good faith efforts to provide sufficient water to the Chili Bar Reservoir to enable the release of recreational rafting flows between April 1 and September 30 when the California Department of Water Resources (DWR) forecast for total unimpaired runoff into Folsom Reservoir is greater than 50 percent of the long-term average.

Commission Proceeding and Settlement Agreement

11. PG&E used a modified Traditional Licensing Process for the relicensing proceeding that involved public input and collaboration. Due to the existence of many overlapping relicensing issues that are common to the Chili Bar and the UARP proceedings, many studies and technical reports were developed and coordinated through PG&E's participation in the UARP's Alternative Licensing Process. PG&E filed an application for a new license with the Commission on July 15, 2005. Settlement negotiations between PG&E, SMUD and state and federal resources agencies and other interested stakeholders (Settlement Negotiation Group or SNG) began prior to submittal of PG&E's application; however, the SNG

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did not reach settlement prior to the statutory deadline for filing the license application with the Commission.

12. Following the filing of recommendations, prescriptions, terms and conditions with the Commission by state and federal agencies, the SNG reconvened to continue negotiating a comprehensive settlement in the relicensing of the UARP and Chili Bar, which led to an Agreement in Principle that was filed with the Commission on November 16, 2006. A final *Relicensing Settlement Agreement for the UARP and Chili Bar (SA)* was filed with the Commission on January 31, 2007. The Settling Parties consist of PG&E, SMUD, California Department of Fish and Game (CDFG), California Department of Parks and Recreation (CDPR), United States Forest Service (USFS), BLM, United States Fish and Wildlife Service (USFWS), National Park Service, American River Recreation Association and Camp Lotus, California Outdoors, California Sportfishing Protection Alliance, Friends of the River, American Whitewater, Foothill Conservancy, Theresa Simsiman, Hilde Schweitzer, and Rich Platt. Although not a signatory to the SA, State Water Board staff participated in the settlement discussions for the purpose of providing information and guidance.
13. The SA includes approval by multiple agencies for many of its provisions, including many that affect water quality; however, this water quality certification does not require approvals by agencies outside of the State Water Board. The settlement process and water quality certification are distinct processes, and the State Water Board has an independent responsibility to ultimately ensure that the Licensee implements the certification conditions necessary to protect water quality. The State Water Board requires consultation with the agencies with approval authority under the SA, and expects that the parties will fulfill their contractual obligations and go through the approval process when there are multiple agencies with jurisdiction over various measures.
14. As part of the SA, PG&E agreed to construct the following recreation improvements at Chili Bar Reservoir within three years of license issuance:
 - A gravel parking area for three to four vehicles off Rock Creek Road;
 - A 36-inch-wide trail that has a slope of five percent or less from the parking area to Chili Bar Reservoir;
 - A kiosk sign along the trail near the beginning of the trail, explaining the rules of the area; and
 - One picnic table of coated wire-mesh material in a leveled out area that is outside of the Chili Bar Reservoir floodplain.
15. In addition to the measures contained in the SA, PG&E included, as part of the proposed project, measures to assure that impacts to air quality and cultural resources associated with the construction of the recreation improvements at Chili Bar Reservoir are minimized. The proposed project includes measures to reduce

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fugitive dust during the construction period and to address the potential discovery of human remains during construction of the recreation improvements.

Rationale for Water Quality Certification Conditions

16. In making its decision, the State Water Board reviewed and considered: (a) the SA; (b) PG&E's Application for New License; (c) BLM Final Section 4(e) Mandatory Conditions¹; (d) the Commission's Environmental Impact Statement (EIS) for UARP and Chili Bar prepared jointly with USFS pursuant to the National Environmental Policy Act; (e) comments on the License Application and draft EIS by agencies and interested parties; (f) the Initial Study and Negative Declaration prepared for the State Water Board; and (g) **placeholder for comments on the Initial Study and Draft Negative Declaration**. Further, the State Water Board considered the Central Valley Regional Water Quality Control Board's (Central Valley Water Board) *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan)², the existing water quality conditions, and Chili Bar-related controllable factors.
17. The Basin Plan identifies the following beneficial uses for the SF American River from the source to Placerville, and from Placerville to Folsom Reservoir (which includes Chili Bar): municipal and domestic supply, irrigation, hydropower generation, water contact recreation, canoeing and rafting, non-contact water recreation, cold freshwater habitat, warm freshwater habitat, and wildlife habitat.
18. Resource objectives for the SF American River downstream of Chili Bar Dam identified by state and federal agencies during the relicensing proceeding include maintaining adequate habitat for Foothill Yellow Legged-Frogs (FYL frogs) and Western Pond Turtles, minimizing the negative effect of fluctuating flows associated with fish stranding, maintaining connectivity with tributary streams, reducing or eliminating water quality conditions that encourage algal growth, maintaining adequate quantities of large woody debris in the river channel, and assuring that sediment is adequately distributed throughout the reach. Resource objectives for Chili Bar Reservoir include maintaining adequate habitat for native hardhead (*Mylopharodon conocephalus*), a fish species of special concern.
19. The SF American River downstream of Chili Bar is subject to daily flow fluctuations due to UARP operations and streamflow management that is focused on recreational use. These flow fluctuations may limit feeding behavior in fish and increase the risks of stranding during rapid dewatering. Minimum streamflows proposed for the SF American River downstream of Chili Bar were designed to provide access into tributary streams with perennial connectivity to the river, to maintain spawning and nursery habitat, and to maintain refugia for fish and other

¹ The Federal Power Act provides that federal land management agencies can prescribe mandatory conditions on hydroelectric projects that inhabit federal land. (16 USC § 797)

² The Basin Plan can be found on the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml.

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aquatic species. The minimum streamflows were also developed to increase the wetted perimeter to provide more suitable habitat for benthic macroinvertebrates, the primary food for fish. The ramping rates were developed to preclude abrupt flow fluctuations that may adversely affect aquatic species and lead to stranding.

20. The recreational streamflow schedule for Chili Bar was developed based on recognition of the regional importance of whitewater recreation in the SF American River downstream of Chili Bar Dam. The flow schedule addresses the need to have reliable, boatable flows of sufficient duration to provide for a quality river experience, to reduce crowding, to address potential safety concerns, and to reduce resource impacts associated with boating activities.
21. The water quality monitoring program will provide data to assess compliance with state and federal water quality standards. The monitoring data will provide regulatory agencies the ability to identify water quality trends over time, assess risks to human health and wildlife, and assure that measures to intervene are implemented if water quality degradation is observed. Annual water temperature monitoring will provide information to determine whether the cold freshwater habitat beneficial use is adequately protected in the SF American River.
22. Fish population monitoring will be conducted for two consecutive years at defined intervals during the license term to provide a two-year mean value for comparison to fish biomass objectives. Periodic monitoring for the presence and distribution of special-status amphibian and reptile species and identification of breeding and larval periods provides information to evaluate potential impacts resulting from streamflow modifications (particularly short-term fluctuations) and to assess population trends during the license term.
23. Periodic monitoring of riparian vegetation species composition is important to determine whether riparian areas are in proper functioning condition or if riparian areas need restoration. Monitoring for the presence of *Didymosphenia geminata* (also known commonly as rock snot) will indicate whether this invasive algal species is creating nuisance conditions or causing adverse impacts to the aquatic ecosystem. In addition, the adaptive management program requires the Licensee to develop and implement measures to reduce nuisance algae in the event that monitoring indicates adverse impacts to water quality are occurring.
24. Reservoirs have the potential to impound sediments and organic materials that may contain heavy metals which may bioaccumulate in resident fish populations. Periodic monitoring during the license term for metals bioaccumulation through fish tissue sampling will provide information regarding health risks to humans and wildlife and changes in fish tissue metals concentrations of silver, mercury, copper, and lead.
25. Chili Bar is located upstream of Nimbus and Folsom Dams, which are part of the federally-operated Central Valley Project. The National Marine Fisheries Service

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(NMFS) issued its Biological and Conference Opinion on the Long-term Operation of the Central Valley Project and State Water Project (NMFS B.O.) in March 2009. The NMFS B.O. contains measures that are deemed necessary to avoid jeopardizing the continued existence of the Central Valley California Steelhead Evolutionary Significant Unit, which includes the American River. Those measures include a provision to evaluate the feasibility of providing access for steelhead to their historic coldwater habitat above Nimbus and Folsom Dams. Consultation between the Licensee, fisheries agencies, and State Water Board, prior to any restoration of fish passage, is included as a condition of this certification to determine whether changes in the certification conditions are needed to protect beneficial uses associated with anadromous fish.

Regulatory Authority

26. The Federal Clean Water Act (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 101 of the Clean Water Act (33 U.S.C. § 1251) requires federal agencies to "co-operate with the state and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."
27. Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the Clean Water Act, including water quality standards and implementation plans promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Section 401 of the Clean Water Act directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the Clean Water Act and with any other appropriate requirement of state law. Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the Project. The State Water Board is the state agency responsible for such certification in California. (Wat. Code § 13160.) The State Water Board has delegated this function to the Executive Director by regulation. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)
28. The Central Valley Water Board adopted, and the State Water Board and the United States Environmental Protection Agency (USEPA) approved, the Basin Plan. The Basin Plan designates the beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. Section 303 of the Clean Water Act requires the states to develop and adopt water quality standards. (33 U.S.C. § 1313.) The beneficial uses together with the water quality objectives that are contained in the basin plans and state and federal anti-degradation requirements constitute California's water quality standards.

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California Environmental Quality Act

29. The State Water Board is the California Environmental Quality Act (CEQA) lead agency for purposes of the discretionary issuance of this water quality certification. On January 11, 2012, the State Water Board issued an Initial Study and Notice of Intent to Adopt a Draft Negative Declaration for public comment. After considering the documents and the public comments, the State Water Board hereby determines that the proposed Project will not have a significant effect on the environment. **{PLACE HOLDER FOR FINAL CEQA FINDINGS}**

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ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT OPERATION OF THE CHILI BAR HYDROELECTRIC PROJECT BY PACIFIC GAS AND ELECTRIC COMPANY will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if PG&E complies with the following terms and conditions during the project activities certified herein.

CONDITION 1. Minimum Instream Flows to Protect Aquatic Life Beneficial Uses

Within three months of license issuance, PG&E, in consultation with the UARP Licensee (SMUD), shall maintain streamflows in the SF American River below Chili Bar Dam as set forth in the schedule in Table 2, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows. The compliance point for the measurement of the required minimum streamflows shall be United States Geological Survey (USGS) gage 11444500 (PG&E gage A49). All specified streamflows are in cfs. The schedule specifies minimum streamflows by month and six water year types denoted as: Wet, Above Normal (AN), Below Normal (BN), Dry, Critically Dry (CD), and Super Dry (SD).

Table 2. SF American River below Chili Bar Dam						
	Minimum Streamflow by Water Year Type (cfs)					
Month	SD	CD	DRY	BN	AN	WET
October	150	185	200	250	250	250
November	150	185	200	200	200	250
December	150	185	200	200	200	250
January	150	185	200	200	200	250
February	150	185	200	200	200	250
March	150	185	200	200	200	250
April	150	200	250	250	300	350
May	150	200	250	250	350	500
June	200	200	250	250	350	500
July	150	185	200	250	300	350
August	150	185	200	250	300	300
September	150	185	200	250	250	250

The minimum streamflows specified in the schedules may be temporarily modified if required by equipment malfunction, operating emergencies or public safety emergencies, which are reasonably beyond the control of the Licensee. If the streamflow is so modified, the Licensee shall provide Notice to the Commission, USFS, CDFG, USFWS, and the State Water Board's Deputy Director of the Division of Water Rights (Deputy Director) as soon as possible, but no later than 10 days after such incident. The minimum streamflows specified may also be temporarily modified for short periods in non-emergency situations five days after Notice to the Commission, and upon approval by the Deputy Director.

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Where facility modification is needed to maintain the specified minimum streamflows, the Licensee shall complete such modifications as soon as reasonably practicable and no later than three years after license issuance. Prior to such facility modifications, the Licensee shall make a good-faith effort to provide the specified minimum streamflows within the capabilities of the existing facilities.

In order for the Licensee to adjust operations to meet the required minimum streamflows, the Licensee shall have a three-year period after the license is issued or three years after completion of necessary facility modifications, whichever is later, in which daily mean streamflows may vary up to 10 percent below the amounts specified in the minimum streamflow schedules, provided that the average monthly streamflow in any given month equals or exceeds the required minimum streamflow for the month. After the applicable three-year period, the Licensee shall meet the minimum streamflow requirements specified in the minimum streamflow schedules, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows.

Water Year Types. The Licensee shall determine the water year type based on the water year forecast of unimpaired runoff in the American River below Folsom Lake that is published near the beginning of each month from February through May in DWR's Bulletin 120 "Report of Water Conditions in California." Specifically, the "American River Below Folsom Lake" forecast is currently shown in the "Water Year Forecast" column of the "Water Year Unimpaired Runoff" table in Bulletin 120. The water year types are defined as follows:

<u>Year Type</u>	<u>American River Water Year Forecast</u>
Wet	greater than or equal to 3.500 Million Acre-Feet (MAF)
AN	greater than or equal to 2.600 MAF but less than 3.500 MAF
BN	greater than or equal to 1.700 MAF but less than 2.600 MAF
Dry	greater than or equal to 0.900 MAF but less than 1.700 MAF
CD	less than 0.900 MAF
SD	any CD year that is immediately preceded by a Dry or CD year or any Dry year that is immediately preceded by any combination of two Dry or CD years

Each month between February and May the Licensee shall determine the water year type based on the DWR Bulletin 120 forecast and shall operate for that month based on the most recent forecast beginning three days after issuance of the forecast and continuing until two days after issuance of the subsequent monthly forecast. The May forecast shall be used to establish the final water year type for the remaining months of the water year and the month of October. The water year type for the months of November through January shall be based on the DWR's Full Natural Flow record for the American River at Folsom (California Data Exchange Center site AMF sensor 65) for the preceding water year, and the Licensee shall operate based on that record beginning November 1. The Licensee shall provide Notice to the Commission, CDFG,

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USFWS, and the Deputy Director of the final water year type determination within 30 days of the May forecast.

CONDITION 2. Ramping Rates to Protect Aquatic Life Beneficial Uses

As early as is reasonably practicable and within three months after license issuance the Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall use the ramping rates shown in Table 3 for Licensee-controlled streamflow releases, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these ramping rates:

Ramp Up	Ramp Down
500 cfs per hour for flows between 150 cfs and 1,000 cfs	1 ft per hour for flows between 1,950 cfs and 1,000 cfs
1 ft per hour for flows above 1,000 cfs and below 1,950 cfs	500 cfs per hour for flows below 1,000 cfs and above 600 cfs
	250 cfs per hour for flows between 600 cfs and 150 cfs

Where facility modification is needed to provide the specified ramping rates, the Licensee shall complete such modification as soon as reasonably practicable and no later than three years after license issuance. Prior to facility modifications, the Licensee shall make every reasonable effort to provide the specified ramping rates within the capabilities of the existing facilities. The Licensee shall make the streamflow records related to ramping available to BLM, CDFG, USFWS, and the Deputy Director, upon request.

Should the ramping rates specified in Table 3 be infeasible to achieve due to equipment malfunction, operating emergencies or public safety emergencies reasonably beyond the control of the Licensee, or whenever water spills occur over Chili Bar Dam, the Licensee shall provide Notice to the Commission, BLM, CDFG, USFWS and the Deputy Director as soon as possible, but no later than 10 days after such incident. The Licensee may also request short-term modification of the ramping rates in non-emergency situations by providing Notice to the Commission and obtaining approval from the Deputy Director for a temporary deviation from the required ramping rates.

The Licensee shall provide notice of non-spill emergencies, to BLM, CDFG, USFWS and the Deputy Director within 10 days after such an event occurs and shall provide a report documenting the reason that ramping rates were not followed within one month after the event occurs.

³ The specified ramping rates correspond to the maximum allowable rate of change in either streamflow (cfs) or stream stage (ft) as shown in Table 3.

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CONDITION 3. Recreational Streamflows to Protect Recreational Use

As early as is reasonably practicable and within three months after license issuance the Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall maintain minimum recreational streamflows in SF American River below Chili Bar Reservoir Dam as set forth in Table 4, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these flows. For compliance purposes, the point of measurement for the required minimum streamflows shall be USGS gage 11444500 (PG&E gage A49). All specified recreational streamflows are in cfs. The schedule specifies minimum recreational streamflows, by season, day of week, and water year type. The water year types are the same as those defined in Condition 1 (Minimum Instream Flows). Although the required minimum streamflow duration can extend beyond the times shown below, they must be provided during the specific times as follows:

- A. Minimum recreational streamflows scheduled for three hours shall meet or exceed the specified minimum from 9:00 am until at least noon.
- B. Minimum recreational streamflows scheduled for four hours shall meet or exceed the specified minimum from 8:00 am until at least noon.
- C. Minimum recreational streamflows scheduled for five hours shall meet or exceed the specified minimum from 7:00 am until at least noon on Saturdays and 8:00 am until at least 1:00 pm on Sundays.
- D. Minimum recreational streamflows scheduled for six hours shall meet or exceed the specified minimum from 7:00 am until at least 1:00 pm.

If, as a result of consultation with CDPR and BLM, the Deputy Director determines that changes are needed in the timing of the recreational streamflow releases shown above, the Deputy Director will direct the Licensee to implement a new schedule. The Licensee shall adjust the timing of the recreational streamflow releases to meet the new schedule provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these flows.

The minimum recreational streamflows specified in the schedules may be temporarily modified upon the occurrence of the following events:

- A state or federal electrical emergency is declared by an appropriate authority where specific orders are issued or specific actions are mandated by said authority that require the Licensee to produce electricity outside normal planned operations;
- System events cause the Operating Reserves to drop below the Western Energy Coordinating Council Minimum Operating Reliability Criteria; or
- Equipment malfunction, public safety emergency, or law enforcement activity.

Additionally, recreational streamflows specified at 1,750 cfs may be reduced to 1,500 cfs during scheduled unit outages. However, the Licensee shall make a good faith effort to avoid scheduling unit outages when recreational streamflows of 1,750 cfs are required. If the recreational streamflow is so modified, the Licensee shall provide

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Notice to the Commission, BLM, CDPR, and the Deputy Director as soon as possible, but no later than 10 days after such incident.

Where facility modification is required to maintain the specified minimum recreational streamflows, the Licensee shall complete such modifications as soon as reasonably practicable and no later than three years after license issuance. Prior to such required facility modifications, the Licensee shall make every reasonable effort to provide the specified minimum recreational streamflows within the capabilities of the existing facilities.

CONDITION 4. Coordination with UARP Licensee (SMUD)

PG&E shall coordinate operation of Chili Bar with the Licensee of the UARP (SMUD) to enable PG&E to comply with Condition 1 (Minimum Instream Flows), Condition 2 (Ramping Rates), and Condition 3 (Recreational Streamflows) in this water quality certification. Each Licensee's responsibilities for achieving coordinated operations of the two projects are described in the *Cooperation Agreement Between Sacramento Municipal Utility District and Pacific Gas and Electric Company Regarding Upper American River Project and Chili Bar Project* (Cooperation Agreement).

As specified in the SA, the Licensees of the UARP and Chili Bar must jointly prepare and file with the Commission within 120 days after license issuance a plan for coordinated operations of the two projects, as described in the Cooperation Agreement. To provide the opportunity for review and approval by the Deputy Director prior to submittal to the Commission, PG&E shall submit the Plan to the Deputy Director within 75 days after issuance of the UARP and Chili Bar licenses, or if the licenses are issued separately, the latter of the two. The Deputy Director may require modifications as part of the approval. The approved Plan shall then be filed with the Commission and, upon receiving Commission approval, the Licensee shall implement the Plan, including any changes required by the Commission.

In addition to the coordination described above related to compliance with streamflow conditions, PG&E shall consult and coordinate with the Licensee of the UARP as described in the Cooperation Agreement in implementation of Condition 5 (Adaptive Management Program), Condition 6 (Monitoring Program), Condition 7 (Sediment Management Plan), and Condition 11 (Streamflow and Reservoir Level Public Information Services) of this water quality certification.

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Table 4. Minimum Recreational Flow for SF American River below Chili Bar Dam by Water Year Type , Duration and Flow in cfs								
Water Year Type	Period	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Super Dry	April – Friday before Memorial Day	3 Hrs @ 1300					3 Hrs @ 1300	3 Hrs @ 1300
	Memorial Day – Labor Day ¹	3 Hrs @ 1300			3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1300	5 Hrs @ 1300
	Tuesday after Labor Day - September						3 Hrs @ 1300	3 Hrs @ 1300
	October - March						3 Hrs @ 1300	
Critically Dry	March – Friday before Memorial Day	3 Hrs @ 1300					3 Hrs @ 1300	3 Hrs @ 1300
	Memorial Day – Labor Day ¹	3 Hrs @ 1300			3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1500	5 Hrs @ 1500
	Tuesday after Labor Day - September					3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300
	October - February						3 Hrs @ 1300	
Dry	March – Friday before Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300			3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	Memorial Day – Labor Day ¹	3 Hrs @ 1300	3 Hrs @ 1300		3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1500	5 Hrs @ 1500
	Tuesday after Labor Day - September					3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300
	October - February						3 Hrs @ 1300	3 Hrs @ 1300
Below Normal	March – Friday before Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300		3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	Memorial Day – Labor Day ¹	3 Hrs @ 1300	3 Hrs @ 1300		3 Hrs @ 1300	3 Hrs @ 1300	6 Hrs @ 1500	6 Hrs @ 1500
	Tuesday after Labor Day - September				3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						3 Hrs @ 1300	3 Hrs @ 1300
Above Normal	March – Friday before Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	4 Hrs @ 1750	4 Hrs @ 1750
	Memorial Day – Labor Day ¹	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Tuesday after Labor Day - September				3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						3 Hrs @ 1500	3 Hrs @ 1500
Wet	March – Friday before Memorial Day	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Memorial Day – Labor Day ¹	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Tuesday after Labor Day - September				3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						3 Hrs @ 1500	3 Hrs @ 1500

¹The "Memorial Day – Labor Day" period refers to Saturday of Memorial Day weekend through Monday of Labor Day weekend.

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CONDITION 5. Adaptive Management Program

The Licensee shall, beginning as early as reasonably practicable and within three months after license issuance, in consultation and coordination with the UARP Licensee (SMUD), implement an adaptive management program as described below. The program shall generally consist of: (a) implementation of a monitoring program; and (b) specific adaptive management measures that shall be implemented if the monitoring program and other information indicate that the applicable resource objectives identified in the Rationale Report⁴ will likely not be met without adjustment of the initial conditions. Monitoring shall be conducted to determine if the applicable resource objectives are achievable and being met.

Analysis of the monitoring results from a specified period shall be used to determine the need for adaptive management measures. Adaptive management decisions shall be based on monitoring results and other scientific information and a determination that the applicable ecological resource objectives identified in the Rationale Report are not being met and will likely not be met without application of the adaptive management measures. For purposes of the adaptive management program, each year is defined on a calendar year basis (i.e., January through December). Year 1 is defined as the first year during which all initial streamflows required by the license are implemented by May 1.

A. Coordinated Operations

Coordinated operations, described above in Condition 4 (Coordination with UARP Licensee), shall be reviewed annually to determine if they are effective in achieving the ecological and recreational streamflows in the SF American River downstream of Chili Bar Reservoir Dam, as defined previously in Condition 1 (Minimum Instream Flows) and Condition 3 (Recreational Streamflows) of this certification.

B. Invasive Algae

If the monitoring required in Condition 6.H. (Algae) indicates that invasive algae are present and are creating nuisance conditions, the Licensee shall develop adaptive measures to reduce or eliminate the problem, submit them to the Deputy Director for approval, and implement the measures upon approval. The Deputy Director may require modifications as part of the approval.

CONDITION 6. Monitoring Program

The Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall implement the following Monitoring Program after license issuance and through the term of the new license and any annual licenses, in coordination with BLM, CDFG, USFWS, and State Water Board staff.

⁴ Rationale Report for Relicensing Settlement Agreement, submitted by CDFG to the Commission on January 29, 2007.

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The Licensee shall ensure that the final monitoring plan for each element of the Monitoring Program is provided for review to BLM, CDFG, USFWS, and the Deputy Director. Each element of the final monitoring plan must be approved by the Deputy Director prior to implementation. The Deputy Director may require modifications as part of the approval. Each monitoring element is described below.

BLM, CDFG, USFWS, or the Deputy Director may alter the monitoring program methodologies and frequencies of data collection if it is determined that: (a) there is a more appropriate or preferable methodology or site to use than that described in the individual elements of the monitoring program; or (b) monitoring may be reduced or terminated because the relevant ecological resource objectives have been met or no change in resource response is expected. Within the scope of the specified monitoring program, BLM, CDFG, USFWS, or the Deputy Director may select an equal number of alternative years to ensure that surveys occur during a range of water year types. Modifications made to the monitoring plans must be approved by the Deputy Director prior to implementing the modified monitoring plan.

The Licensee shall file with the Commission by June 30 of each year an annual report fully describing the monitoring efforts of the previous calendar year. BLM, CDFG, USFWS, and State Water Board staff shall have at least 30 days to review and comment on a draft report prior to the filing of the final report with the Commission. The Licensee shall provide copies of the annual report to BLM, CDFG, USFWS, and the Deputy Director.

The following guidelines shall be used in implementing the monitoring program: (a) monitoring and studies shall be relevant to Chili Bar; (b) monitoring and studies shall be conducted such that they provide useful information for management decisions or for establishing compliance with license conditions; and (c) monitoring and studies shall be as cost-effective as possible.

For purposes of the adaptive management program required in Condition 5, each year is defined on a calendar year basis (i.e., January through December). This monitoring program covers monitoring to be conducted during all years until a subsequent license is issued. Where years are specified, Year 1 is the first year during which all initial minimum instream flows required by the license are implemented by May 1.

6.A. Fish Populations

Within two years of license issuance, the Licensee shall develop a fish population monitoring plan in consultation with BLM, CDFG, USFWS, and the State Water Board. The Licensee shall submit the Plan to the Deputy Director for approval within 60 days after agency consultation, or as otherwise agreed to during consultation. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

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Method: Electrofishing and/or snorkeling, as conducted by the Licensee in 2003-2004. Electrofishing shall be conducted along the stream margins at the snorkel survey sites as needed to verify species identifications made during snorkel surveys, to obtain length-weight relationships, and to capture species that are difficult to observe while snorkeling. Any hardhead that are detected shall be noted.

Locations: SF American River below Chili Bar Reservoir Dam at upper and lower sample section of the following two snorkel sites: CB-F1⁵ (approximately 1.7 miles downstream at the "Old Flume" memorial); and CB-F4 (near the confluence with Weber Creek).

Frequency: Years 5, 6, 10, 11, 15, 16, and thereafter for two consecutive years every 10 years for the term of the license

6.B. Aquatic Macroinvertebrates

Within two years of license issuance, the Licensee shall develop an aquatic macroinvertebrate monitoring plan in consultation with BLM, CDFG, USFWS, and State Water Board staff. The Licensee shall submit the Plan to the Deputy Director for approval within 60 days after agency consultation, or as otherwise agreed to during consultation. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

Method: A method accepted by BLM, CDFG, USFWS, and State Water Board staff. The results shall be compared to an aquatic health index specified in the Plan approved by the Deputy Director.

Locations: SF American River below Chili Bar Reservoir Dam at CB-I1 (downstream of Georgetown Road Bridge) and CBI4 (near Camp Lotus).

Frequency: Years 5, 6, 10, 11, 15, 16, and thereafter for two consecutive years every 10 years for the term of the license.

6.C. Amphibians and Reptiles

Within one year of license issuance, the Licensee shall develop an amphibian and reptile habitat evaluation and species presence monitoring plan in consultation with BLM, CDFG, USFWS, and State Water Board staff. The Licensee shall submit the Plan to the Deputy Director for approval within 60 days after agency consultation, or as otherwise agreed to during consultation. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

⁵ Sample site designations are the same as those used in the technical reports that were completed and filed with the Commission during the relicensing proceeding.

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Method: Conduct protocol surveys for FYL frogs (special status, sensitive species); and California Red-Legged Frogs (CRL frogs, an Endangered Species Act-listed amphibian species) using the procedures of the USFWS⁶ and PG&E⁷, or the most current survey protocol approved by the Deputy Director. The surveys shall be conducted in a sub-sample of appropriate habitat types to document species presence and distribution. The Licensee shall also survey for Western Pond Turtle during FYL frog surveys.

The Licensee shall identify amphibian breeding and larval periods in the SF American River downstream of Chili Bar by surveying locations where amphibians are known to occur during spring/summer. The first iteration of surveys shall be used to determine the timing and success of the following life stages of any existing known FYL frog populations: egg laying, tadpole rearing, metamorphosis, and size/condition of metamorphs in late September to estimate the probability of overwintering success. Based on review of the first year's data, for subsequent years the Deputy Director, after consultation with BLM, USFWS, and CDFG, may approve a subset of survey sites or a less intensive program. In the future, BLM, USFWS, CDFG, or the Deputy Director may request additional breeding site habitat data to assess the cause of unexpected or chronic reproductive failures that may be related to Chili Bar operations.

Locations: SF American River below Chili Bar Reservoir Dam along the entire reach from CB-A15 (near Scott Road) downstream to Ponderosa Campground (near Highway 49 Bridge) on right and left banks.

Frequency: Years 2, 3, 5, 6, 10, 11, 15, 16, and thereafter for two consecutive years every five years for the term of the license.

6.D. Riparian Vegetation Species Composition

Within two years of license issuance, the Licensee shall develop a riparian vegetation monitoring plan in consultation with BLM, CDFG, USFWS, and State Water Board staff. The Licensee shall submit the Plan to the Deputy Director for approval within 60 days after agency consultation, or as otherwise agreed to during consultation. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Plan upon receiving all necessary approvals.

⁶ USFWS. 1997. Guidance on site assessment and field surveys for California red-legged frogs (*Rana aurora draytonii*).

⁷ Seldenrich, C. P. and A. C. Pool. 2002. A standardized approach for habitat assessments and visual encounter surveys for the foothill yellow-legged frog (*Rana boylei*). PG&E.

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Method: Aerial photo flights and greenline method.⁸ The data collected at each site will include transects to document species composition, percent cover, and quantification of length and width of riparian community.

Locations: The five Intensive Field Study Sites (riparian) that were surveyed in the Riparian Report filed with the Commission as part of the Licensee's application for new license on July 15, 2005.

Frequency: Every five years for the first 15 years of the new license and thereafter every 10 years for the term of the license and any annual extensions.

6.E. Water Temperature

Within three months of license issuance, the Licensee shall consult with State Water Board staff, BLM, USFWS, and CDFG on the development of a Water Temperature Monitoring Plan consistent with the method and frequencies described below. Following consultation and within six months of license issuance, the Licensee shall submit the Plan to the Deputy Director for approval. The Deputy Director may require modifications as part of the approval. The Licensee shall file the approved Plan with the Commission within one year following license issuance. The Licensee shall implement the plan upon receiving all necessary approvals.

Method: Continuous temperature recording devices shall be installed and maintained at a minimum of four stream temperature stations as designated below. Reservoir temperature profiles may be added if BLM, CDFG, USFWS, and State Water Board staff determine that Chili Bar Reservoir temperatures are a controllable factor in the SF American River downstream of Chili Bar or if water chemistry monitoring in the reservoir indicates a need for additional temperature information.

Locations: Initial monitoring sites shall be determined in consultation with BLM, CDFG, USFWS, and State Water Board staff. Up to two additional stream sites may be added if temperature problems are identified. The final monitoring sites shall be approved by the Deputy Director. At a minimum, the water temperature plan shall provide for monitoring at the following locations:

- a. SF American River immediately below Chili Bar Dam
- b. SF American River upstream of Dutch Creek confluence
- c. SF American River immediately upstream of Camp Lotus
- d. SF American River immediately upstream of Greenwood Creek

⁸ The *Riparian Vegetation and Wetlands Technical Report* (Riparian Report) defines the greenline as "...the first perennial vegetation that forms a lineal grouping of community types on or near the water's edge..." As presented in the Riparian Report, each greenline is described by the cumulative distance in feet occupied by each community type.

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Frequency: For the preceding monitoring sites (a – d above), continuous monitoring from March 15 through October 15 in all years after license issuance until a subsequent license is issued or until it can be demonstrated by the Licensee that operation of Chili Bar reasonably protects the "cold freshwater" beneficial use as determined by BLM, the Deputy Director, USFWS, and CDFG.

If a determination is made that Chili Bar Reservoir temperature profiles are required, seasonal temperature profiles shall be collected at locations specified by the agencies during multiple water year types to develop data necessary for decision-making. Some temperature stations may be deleted if the Deputy Director, in consultation with BLM, USFWS, and CDFG, finds that sufficient temperature data have been collected and that no significant issues related to temperature are evident for the relevant area.

6.F. Water Quality

Within three months of license issuance, the Licensee shall consult with BLM, CDFG, State Water Board staff, USFWS, and the Central Valley Water Board on the development of a Water Quality Monitoring Program Plan (WQ Monitoring Plan). The WQ Monitoring Plan shall include the water quality monitoring elements listed below, and must: (1) provide detail on field sampling locations, sampling frequency, handling methods and quality assurance/quality control; and (2) define the laboratory analyses and associated method detection limits for all constituents and parameters to be monitored in the various elements of the monitoring program.

Following consultation, and within six months of license issuance, the Licensee shall submit the Plan for review and approval by the Deputy Director. The Deputy Director may require modifications as part of the approval. The approved WQ Monitoring Plan shall then be filed with the Commission for approval. The approved WQ Monitoring Plan shall be implemented by the Licensee as described, through the term of the license, and any annual extensions. The Plan may be modified pursuant to adaptive management program needs as recommended by State Water Board staff, BLM, CDFG, USFWS, and the Central Valley Water Board, and after approval by the Deputy Director.

Water Chemistry

The Licensee shall conduct a water chemistry sampling program designed to demonstrate seasonal conditions at Chili Bar Reservoir and stream locations affected by operation of Chili Bar, as described in the relicensing Water Quality Study Plan (Plenary approval, January 8, 2003). Laboratory analyses shall be conducted using USEPA analytical methods or other methods that are sensitive enough for determination of compliance with recognized state and federal water quality criteria.

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a. Annual In Situ Monitoring

Method: Monitoring for physical parameters (pH, water temperature, dissolved oxygen, specific conductance, and turbidity) using USEPA analytical methods or other methods sensitive enough to determine compliance with recognized state and federal water quality criteria.

Locations: SF American River downstream of Chili Bar Reservoir at representative locations as defined in the final WQ Monitoring Plan. In situ physical parameters shall be monitored in Chili Bar Reservoir as vertical profiles collected at one-meter intervals from surface to bottom.

Frequency: For stream reaches, once seasonally in spring (April-May), summer (August), fall (November) and winter (January-February) each year after license issuance. For Chili Bar Reservoir, spring (April-May) and fall (November) each year after license issuance. When possible, in situ water quality monitoring should be completed coincident with amphibian, fisheries, and macroinvertebrate monitoring.

b. General Chemistry Monitoring

Method: Measurement of in situ parameters and water sampling for the analysis of minerals, nutrients, metals (total and dissolved fractions), measured hardness, and petroleum products shall be conducted.

Locations: General chemistry samples shall be collected from Chili Bar Reservoir and at a minimum of three representative sites along the SF American River between Chili Bar Dam and the confluence of Greenwood Creek. Reservoir samples shall be collected at the surface and near the bottom at multiple, representative locations, as defined in the final WQ Monitoring Plan.

Frequency: Once every five years beginning in Year 3 after license issuance, sampling shall be conducted in the spring, summer, fall, and immediately following either the second or third measurable rain event of the fall-winter period. After a minimum of three data sets are collected, if it is demonstrated that exceedances are not occurring at specific locations, the collection frequency may be reviewed to determine if it may be modified.

Bacteria

Method: The Licensee shall conduct bacterial monitoring for fecal coliform and/or *E. coli* consistent with Basin Plan objectives for protection of the REC-1 beneficial uses. Five near-shore samples shall be collected at each of the eight sampling locations during the 30-day period that spans either the Independence Day Holiday (June-July) or the Labor Day Holiday (August-

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September), using the five samples in 30-day methodology or other protocol as amended in the Basin Plan.

Locations: Samples shall be collected at a minimum of eight shoreline recreational locations in the SF American River downstream of Chili Bar. Sampling locations shall be selected based on criteria that include: (1) swimming and other water contact recreation activities that are known to occur in the area; and (2) sources for potential introduction of pathogens to the water column in the immediate vicinity. Candidate sites for annual REC-1 pathogen monitoring will include developed recreation sites and frequently used white water boating take-out sites along the SF American River downstream of Chili Bar Reservoir Dam. The bacterial monitoring program shall include sampling at a minimum of four swim beach sites, including the Coloma and Camp Lotus areas, along with four other selected stations. The Licensee, in consultation with BLM, CDFG, State Water Board staff, USFWS, and the Central Valley Water Board shall determine sampling locations for each upcoming field season. The Licensee shall consult with State Water Board staff and other listed parties for final determination of the locations to be sampled no later than May 31 of each designated sampling year and shall submit the list of sampling locations to the Deputy Director for approval.

Frequency: Bacterial monitoring shall be conducted annually for the first five years after license issuance, and then may be decreased in frequency to every other year if data demonstrates compliance with the Basin Plan bacteria objective for protection of REC-1 designated waters during Years 1 through 5.

If data demonstrate that bacterial concentrations present risks to human health at specific stream sites, the Licensee shall notify the Central Valley Water Board and shall continue annual monitoring at those sites until such time that the Licensee consults with State Water Board staff (and any other interested parties) and agreement is reached that the monitoring frequency can be reduced and the Deputy Director has approved the change in monitoring frequency.

6.G. Metals Bioaccumulation

Method: The Licensee shall monitor for potential uptake of mercury, copper, lead, and silver through the aquatic food chain resident in Chili Bar Reservoir. Target fish species, numbers of individuals to be analyzed, sampling strategy, and analytical methods used shall be consistent with the State Water Board Surface Water Ambient Monitoring Program (or future water quality monitoring program). The metals bioaccumulation monitoring plan shall be submitted to the Deputy Director for review and approval prior to each sampling event and within 60 days after Licensee consultation with

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BLM, CDFG, State Water Board, Central Valley Water Board, USFWS, and the state Office of Environmental Health Hazard Assessment.

Locations: Resident fish species shall be collected from Chili Bar Reservoir.

Frequency: Once every five years beginning in Year 2 following license issuance. Monitoring shall continue through the term of the license and any annual extensions.

6.H. Algae

Method: Monitoring for the presence of *Didymosphenia geminata* (invasive diatomaceous algae that is also known as rock snot) through visual observation.

Locations: At representative sites in the SF American River downstream of Chili Bar Reservoir Dam, in conjunction with the annual in situ water quality monitoring described in the Water Chemistry Monitoring portion of Section 5.F. (Water Quality).

Frequency: The Licensee shall monitor for *Didymosphenia geminata* annually.

CONDITION 7. Sediment Management Plan

Within one year of license issuance, the Licensee shall, in consultation and coordination with the UARP Licensee (SMUD), plan and implement a geomorphology monitoring program to be performed once every five years for the duration of the license term and any annual extensions. The following data will be collected at three sites in the SF American River downstream of Chili Bar Reservoir Dam identified in the 2005 *Channel Morphology Technical Report* as CB-G1 (Upper Canyon Site), CB-G2 (Upper Coloma Site), and CB-G3 (Lower Coloma Site):

- A. Bed profile measurements at three cross-sectional transects.
- B. Longitudinal profile extending through the vicinity of the three cross-sectional transects.
- C. Bed characterization using pebble count to determine substrate composition at the three cross-sectional transects.
- D. Channel stability and bank characterization using Pfankuch characteristics.
- E. Large woody debris characterization within the site.

If the Licensee, in consultation with the UARP Licensee (SMUD), elects to dredge Chili Bar Reservoir, the Licensee will consult with the resource agencies (i.e., BLM, CDFG, USFWS and State Water Board staff) in the development of a Sediment Management Plan including consideration of depositing the material in the SF American River downstream of Chili Bar Reservoir Dam. The Licensee shall submit the plan to the Deputy Director for review and approval within 60 days of consultation with the resource agencies, or as otherwise agreed to during consultation. The Deputy Director may

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require modifications as part of the approval. The Sediment Management Plan shall be implemented upon concurrence by the UARP Licensee (SMUD), BLM, CDFG, USFWS, and after approval by the Deputy Director. Prior to initiating dredging, the Licensee shall consult with the United States Army Corps of Engineers to determine if a Clean Water Act Section 404 permit is required for the dredging activities, and if so, shall obtain said permit and a Clean Water Act Section 401 Water Quality Certification from the Central Valley Water Board.

CONDITION 8. Large Woody Debris for Protection of Aquatic Life Beneficial Uses

The Licensee shall ensure, provided conditions permit safe and reasonable access and working conditions, and using reasonable means that include short-term spill flows at the dam, that mobile instream large woody debris in Chili Bar Reservoir continues downstream beyond Chili Bar Reservoir Dam. At a minimum, all large woody debris with dimensions greater than both 20 centimeters wide and 12 meters in length shall be allowed to continue downstream beyond the dam. Smaller sizes are also allowed but are not required to be moved beyond the dam. To assure compliance with this measure, the Licensee shall include in the annual monitoring report required in Condition 6 (Monitoring Program) a summary of the efforts made during the year to assure that large woody debris continues downstream beyond Chili Bar Reservoir Dam.

CONDITION 9. Streamflow and Reservoir Elevation Gaging

The Licensee shall, within one year after license issuance, develop and file for Commission approval of a Streamflow and Reservoir Elevation Gaging Plan (Gaging Plan) that meets USGS standards. The Licensee shall provide copies of the Gaging Plan and USGS review results to BLM, CDFG, USFWS, the Commission, and State Water Board staff within nine months of license issuance. The Gaging Plan shall be submitted for review and approval to the Deputy Director prior to filing with the Commission. The Deputy Director may require modifications as part of the approval. The Licensee shall implement the Gaging Plan upon approval. At a minimum, the Gaging Plan shall address compliance gaging at the following locations:

- A. Streamflow Gaging at SF American River below Chili Bar Reservoir Dam (existing USGS gage number 11444500 or its successor).
- B. Reservoir Elevation Gaging at Chili Bar Reservoir.

CONDITION 10. Annual Review of Ecological Conditions

Each calendar year, by April 1, the Licensee shall schedule and facilitate a meeting with the CDFG, BLM, USFWS, and State Water Board staff to review and discuss the results of implementing the conditions in this certification, as well as to discuss other issues related to restoring and protecting ecological values affected by the Chili Bar Project. The Licensee shall make available an operations and maintenance plan for the coming year at least two weeks prior to the meeting with BLM, CDFG, USFWS, and State Water Board staff.

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CONDITION 11. Streamflow and Reservoir Level Public Information Services

The Licensee shall, in consultation and coordination with the UARP Licensee (SMUD), BLM, State Water Board staff, and the Consultation Group⁹, prepare a plan to provide public information on streamflow and reservoir level. The plan shall be submitted for review and approval to the Deputy Director within four months of license issuance, and filed with the Commission within six months of license issuance following Deputy Director approval. The plan shall include at a minimum, the following components:

- A. Real-time lake stage height and storage information for Chili Bar Reservoir.
- B. Installation of up to two simple staff gages for use by the public.
- C. Real-time streamflow and reservoir level information that is available to the public year-round via a toll-free telephone number or other appropriate technology approved by BLM.
- D. Streamflow information on a website, which is collected consistent with standard USGS gaging practices for the existing stream gage facilities downstream of Chili Bar Reservoir Dam (USGS gage 11444500) that includes 15-minute increments and stream flows/releases from the past seven days.

Following approval, the minimum streamflow and recreational streamflow schedules from Conditions 1 and 3 (Minimum Instream Flows and Recreational Streamflows), as well as the current water year type designation, shall be published via the website.

CONDITION 12. Reintroduction of Anadromous Fish

It is possible that anadromous fish passage will be restored at Nimbus and/or Folsom Dams on the American River downstream of Chili Bar during the course of the Commission license term. Prior to the restoration of fish passage at Nimbus and/or Folsom Dams, the Licensee shall consult with CDFG, USFWS, NMFS and State Water Board staff to determine whether changes are needed in the certification conditions to protect beneficial uses associated with anadromous fish. The Deputy Director reserves authority to modify or add conditions to this certification based on the outcome of the consultation process.

CONDITION 13. Hazardous Materials Plan

Within one year of license issuance or prior to undertaking activities on BLM lands, whichever occurs first, the Licensee shall file with the Commission a plan approved by BLM and the Deputy Director for hazardous substances storage and spill prevention and cleanup. The plan shall be submitted to the Deputy Director for review and approval within nine months of license issuance. The Deputy Director may require modifications as part of the approval. In addition, during planning and prior to any new construction or maintenance/repair activities not addressed in an existing plan approved

⁹ The SA defines the Consultation Group as including all parties to the SA with the addition of the State Water Board, the Central Valley Water Board, and El Dorado County.

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by the Deputy Director, the Licensee shall notify the BLM and State Water Board staff. The BLM and the Deputy Director shall determine if an additional plan or updates for hazardous substances storage and spill prevention and cleanup are needed. Any such plan or updates shall be filed with the Commission following approval by the Deputy Director.

At a minimum, the plan must require the Licensee to: (1) maintain a contact list of names and numbers for the Licensee, and federal, state and local officials responsible for responding to hazardous waste spills; (2) maintain in the Chili Bar area a cache of spill cleanup equipment suitable to contain any spill from Chili Bar; (3) periodically inform BLM of the location of the spill cleanup equipment on BLM lands and of the location, type, and quantity of oil and hazardous substances stored in the Chili Bar area; and (4) immediately inform the California Emergency Management Agency, BLM, El Dorado County, CDFG, Central Valley Water Board and the State Water Board of the magnitude, nature, time, date, location, and action taken for any spill. The plan shall identify the potential corrective actions and monitoring that will be implemented if a spill occurs.

CONDITION 14. Water Quality Protection During Recreation Facility Construction

The Licensee is required to construct new recreation facilities to provide access to Chili Bar Reservoir as part of the SA. These facilities are described in Finding No. 14 under the "Commission Proceeding and Settlement Agreement". No later than four months prior to initiating construction activities for the new recreation facilities, the Licensee shall submit to the Deputy Director for review and approval a plan that describes the best management practices that will be taken to minimize impacts to water quality during construction. The Deputy Director may require modifications as part of the approval. These measures should include the following, where applicable:

- Control measures for erosion, excessive sedimentations and turbidity shall be implemented and be in place at commencement of, during and after any ground clearing activities, excavation, or any other project activities that could result in erosion or sediment discharges to surface waters.
- Construction material, debris, spoils, soil, silt, sand, bark, slash, sawdust, rubbish, steel, or other organic or earthen material from any construction activity shall be prevented from entering surface waters.
- All equipment must be washed prior to transport to the project site and must be free of sediment, debris and foreign matter. All equipment using gas, oil, hydraulic fluid or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (motors, pumps, generator, etc.) shall be positioned over drip pans or other types of containment. Spill and containment equipment (oil spill booms, sorbent pads, etc.) shall be maintained onsite at all locations where such equipment is used or staged.
- All construction debris and trash shall be contained and regularly removed from the work area to the staging area during construction activities. Upon completion, all project-generated debris, building materials, excess material,

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waste, and trash shall be removed from all the project sites for disposal at an authorized landfill or other disposal site.

- Erosion control blankets, liners with berms, and/or other erosion control measures shall be used for any stockpile of excavated material to control runoff resulting from precipitation.

General Conditions

CONDITION 15. Unless otherwise specified in this water quality certification or at the request of the Deputy Director or designee, data and/or reports will be submitted electronically in a format accepted by the Deputy Director or designee to facilitate the incorporation of this information into the State Water Board's water quality database systems such as the Surface Water Ambient Monitoring Program or public reporting systems such as the Monitoring Council's "My Water Quality" webpage.

CONDITION 16. The Deputy Director's or State Water Board's approval authority includes the authority to withhold approval or to modify a proposal or required plan prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required plan in a timely manner.

CONDITION 17. Any requirement in this water quality certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

CONDITION 18. Notwithstanding any more specific conditions in this certification, Chili Bar 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 the SF American River watershed.

CONDITION 19. This certification is contingent on compliance with all applicable requirements of the Basin Plan.

CONDITION 20. This certification does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & Game 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 PG&E, PG&E shall obtain authorization for the take prior to any construction or operation of Chili Bar. PG&E shall be responsible for meeting all requirements of the applicable California and federal Endangered Species Acts for Chili Bar authorized under this certification.

CONDITION 21. The authorization to operate Chili Bar pursuant to this certification is conditioned upon payment of all applicable fees for review and processing of the

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application for water quality certification and administering the State's water quality certification program provided under California Code of Regulations, title 23, section 3833.

- CONDITION 22. 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 any 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.
- CONDITION 23. 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.
- CONDITION 24. 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.
- CONDITION 25. This certification is subject to modification or revocation 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).
- CONDITION 26. The Licensee must submit any change to Chili Bar, including Chili Bar operations that would adversely affect water quality, to the Deputy Director for review and written approval. If such a change would also require submission to the Commission, the change must first be approved by the Deputy Director.
- CONDITION 27. Activities associated with operation or maintenance of Chili Bar that threaten or potentially threaten water quality shall be subject to further review by the State Water Board and Central Valley Water Board.
- CONDITION 28. The State Water Board reserves authority to modify this certification if monitoring results indicate that Chili Bar would violate water quality objectives or impair the beneficial uses of the SF American River watershed.
- CONDITION 29. 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 implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

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CONDITION 30. The State Water Board may add to or modify the conditions of this certification as appropriate to coordinate the operations of Chili Bar and other water development projects, where coordination of operations is reasonably necessary to achieve water quality standards or protect beneficial uses of water.

CONDITION 31. Changes in climate projected to occur during the license term may significantly alter the baseline assumptions used to develop the conditions in this certification. The State Water Board reserves authority to modify or add conditions in this certification to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water quality objectives and protect the beneficial uses assigned to the Project-affected stream reaches.

CONDITION 32. When exercising its reserved authority as described in the General Conditions above, the State Water Board may provide notice and an opportunity for hearing.

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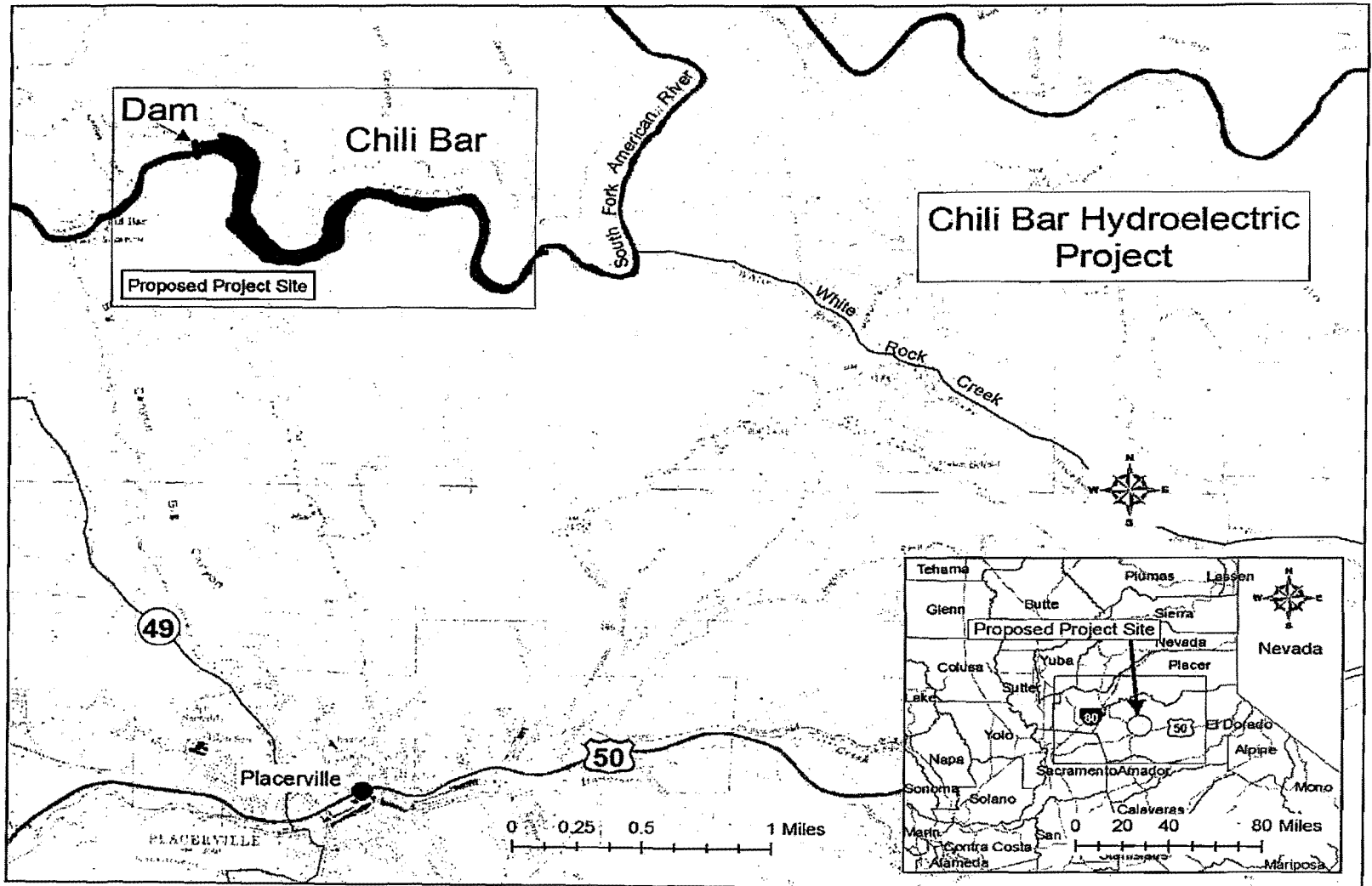
Thomas Howard
Executive Director

Date

Attachment A: Location Map

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ATTACHMENT A - LOCATION MAP

ATTACHMENT C

**PG&E's Letter to
Jennifer Watts, Division of Water Rights
Submitting PG&E's Comments on
DRAFT**

**Water Quality Certification for
Pacific Gas and Electric Company's
Chili Bar Hydroelectric Project
February 10, 2012**

COPY



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February 10, 2012

Via E-Mail and U. S. Mail
jwatts@waterboards.ca.gov

Ms. Jennifer Watts – Division of Water Rights
STATE WATER RESOURCES CONTROL BOARD
P. O. Box 100
Sacramento, CA 95812-0100

**Re: Draft Water Quality Certification for Pacific Gas and Electric Company's
Chili Bar Hydroelectric Project, FERC Project No. 2155**

Dear Ms. Watts:

Pacific Gas and Electric Company ("PG&E") hereby respectfully submits its comments on the January 11, 2012 Draft Water Quality Certification issued by the State Water Resources Control Board ("State Water Board") for PG&E's Chili Bar Hydroelectric Project, FERC Project No. 2155 ("Project").

PG&E joins the Sacramento Municipal Utility District ("SMUD")¹ in thanking the State Water Board staff for largely honoring the Relicensing Settlement Agreement for the Upper American River Project and the Chili Bar Hydroelectric Project ("Settlement Agreement").² As discussed herein, however, PG&E does have concerns with several conditions set forth in the Draft Water Quality Certification ("Draft Conditions"), in particular ones that PG&E believes are inconsistent with certain provisions of the Settlement Agreement as well as with the Draft Water Quality Certification issued for the Upper American River Project ("UARP").

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¹ See November 14, 2011 letter from Leslie A. Dunsworth, Chief Assistant General Counsel, SMUD, to Jennifer Watts, State Water Resources Control Board ("Comments on Draft 401 Water Quality Certification for SMUD's Upper American River Project, FERC Project No. 2101").

² The Settlement Agreement was filed with the Federal Energy Regulatory Commission on February 1, 2007.



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I. INCONSISTENCIES WITH SETTLEMENT AGREEMENT AND UARP DRAFT WATER QUALITY CERTIFICATION.

The Draft Water Quality Certification modifies the Settlement Agreement language in several respects, many of which have the potential to complicate compliance for PG&E as it works to comply with multiple sets of license requirements. Many of the changes are also inconsistent with the Draft Water Quality Certification issued for the UARP.

To avoid unnecessary complexity and confusion, PG&E requests that, wherever possible, the State Water Board adopt the Settlement Agreement language, as discussed below.

A. Draft Condition 1: Minimum Instream Flows to Protect Aquatic Life Beneficial Uses.

Draft Condition 1 differs from the Settlement Agreement article relating to minimum instream flows (Article 2-1) in two respects. First, the Settlement Agreement requires that PG&E provide notice of any minimum instream flow modifications to, among other agencies, the U.S. Bureau of Land Management (“BLM”). Draft Condition 1, however, strikes the reference to BLM and replaces it with a reference to the U.S. Forest Service (“USFS”). While both the USFS and BLM are signatories to the Settlement Agreement, only BLM manages lands within the Chili Bar project boundary (the USFS manages lands within the UARP project boundary). Consequently, PG&E requests that the reference to the USFS in Draft Condition 1 be stricken and replaced with BLM.

Second, Draft Condition 1 alters the water year type reporting schedule from that contained in the Settlement Agreement. The Settlement Agreement provides as follows: “*Each February through May* the licensee shall determine the water year type based on the DWR Bulletin 120 forecast...”; Draft Condition 1, in contrast, states that “*Each month between February and May* the Licensee shall determine the water year type based on the DWR Bulletin 120 forecast...” (emphasis supplied). Although perhaps inadvertent, PG&E reads this language as changing the requirement to report water year type in the months of February, March, April and May, as stated in the Settlement Agreement, to reporting it only in March and April. PG&E believes maintaining consistency with the Settlement Agreement language will prevent unnecessary confusion and potential conflict.

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B. Draft Condition 4: Coordination with UARP Licensee (SMUD).

Draft Condition 4 adds several requirements to the proposed license article contained in the Settlement Agreement addressing the coordination of operations between the Chili Bar Project and UARP. These include submittal of the coordination plan to the Deputy Director 75 days after issuance of the UARP or Chili Bar license (whichever is last issued), and review and approval by the Deputy Director prior to the submission of the plan to the Federal Energy Regulatory Commission ("FERC"). The Settlement Agreement, in contrast, requires the licensees to file with FERC a coordinated operations plan within 120 days of issuance of the last-issued license.

Thus, Draft Condition 4 shortens the time for PG&E and SMUD to develop the coordinated operations plan from 120 days to 75 days. PG&E respectfully suggests that this shortened timeframe will likely prove infeasible. PG&E further notes that the analogous Draft Condition in the Draft Water Quality Certification for the UARP, Draft Condition 24, does not contain the 75 -day requirement, but instead simply states as follows:

Within 120 days after issuance of the UARP or Chili Bar license, whichever is later, the Licensee shall, jointly with the Chili Bar Licensee, prepare and file with the Commission for approval a plan for coordinated operations of the two projects as described in the Cooperation Agreement. Prior to filing with the Commission, the Licensee shall submit the Plan to the Deputy Director for approval. The Deputy Director may require modifications as part of the approval. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission.

PG&E respectfully requests that the State Water Board modify Draft Condition 4 to make it consistent with Draft Condition 24 in the UARP Draft Water Quality Certification, since PG&E and SMUD will be developing and implementing this plan jointly.

Furthermore, while PG&E recognizes the State Water Board's authority to approve and modify plans, the constraints presented by such review and modification are of concern. FERC sets strict time requirements for the submission of plans and the failure to meet the deadlines constitutes a violation of the project license that exposes licensees to the imposition of civil penalties. If the State Water Board requires its approval before a plan can be submitted to



FERC, and if that approval is not granted in a timely manner, PG&E is at risk of failing to comply with its FERC license and may be subject to civil penalties. Therefore, PG&E requests that the State Water Board include language in Condition 4 stating that PG&E may file the subject plan with FERC prior to receiving the Deputy Director's approval if doing so is necessary to meet a FERC deadline.

C. Draft Condition 6: Monitoring Program.

Draft Condition 6 alters the timelines and protocols for the submission of the monitoring plans required under Draft Conditions 6A, 6B, 6C, 6D and 6E from those established in the Settlement Agreement. The changes render the review and approval process extremely unclear and, if adopted, will necessarily complicate PG&E's ability to comply both with the Draft Conditions themselves and with deadlines established by FERC for the submittal of the same plans.

Article 2-4 of the Settlement Agreement requires the licensee to develop certain monitoring plans in consultation with the resource agencies, including the State Water Board. Article 2-4 further requires the licensee to provide the resource agencies, including the State Water Board, with a minimum 90-day review and approval period prior to implementation of the plans. Draft Condition 6 requires the licensee to develop several of the same monitoring plans. However, Draft Conditions 6A, 6B, 6C, 6D and 6E, in contrast to the Settlement Agreement protocols, require the licensee to submit the plans to the Deputy Director for approval "within 60 days after agency consultation." The Draft Conditions further strike the Settlement Agreement's 90-day review and approval period.

PG&E has several concerns with the 60-day requirement. First, it is unclear when this 60-day period begins. Two possibilities are evident: 1) the 60-day period begins after the initial consultation meeting with the resource agencies; or 2) the 60-day period begins after the licensee develops and finalizes a draft of the plan in consultation with the resource agencies. The former is unworkable since it will take significantly more than 60 days to prepare draft plans. And the latter is not logical – there is no benefit to the licensee in postponing for 60 days the submission of a completed draft plan (prepared in consultation with the resource agencies, including the State Water Board) to the Deputy Director for approval.

Second, the purpose of the 60-day period is also unclear. PG&E presumes the intention of the Draft Condition is to either (1) provide the resource agencies with a 60-day review period prior to submission of the plans to the Deputy Director for review and approval; or



(2) allow the State Water Board a 60-day period to review and approve the plans prior to their submission to FERC and/or implementation by the licensee. However, Draft Condition 6, as written, does not effectuate either possibility.

To the extent the State Water Board is attempting to ensure it has an opportunity to review and approve the various monitoring plans before they are implemented, Article 2-4 of the Settlement Agreement allows for such review by establishing a minimum 90-day review and approval process for the State Water Board (and others).

Moreover, PG&E notes that the analogous conditions in the Draft Water Quality Certification for the UARP, Draft Condition 8A, 8B, 8C, 8E, and 8I, do not contain the 60-day language. Rather, those Draft Conditions simply provide that “The Licensee shall submit the Plan to the Deputy Director for approval.” No timeframes are indicated. PG&E respectfully requests that the State Water Board take the same approach with Chili Bar as it has with UARP, or re-instate the 90-day review and approval process set forth in the Settlement Agreement. This is particularly important because several of these plans, as stated in Article 2-3 of the Settlement Agreement, will be developed and implemented cooperatively with SMUD.

Furthermore, PG&E requests that the State Water Board include language in Conditions 6A, 6B, 6C, 6D and 6E stating that PG&E may file the subject plans with FERC prior to receiving the Deputy Director’s approval (where such approval is required), if doing so is necessary to meet a FERC deadline.

D. Draft Condition 9: Streamflow and Reservoir Elevation Gaging.

Draft Condition 9 alters the review and approval process for the Streamflow and Reservoir Elevation Gaging Plan from that contained in the Settlement Agreement. Article 2-8 of the Settlement Agreement allows PG&E one year to prepare the Streamflow and Reservoir Elevation Gaging Plan, provide copies of the plan to the resource agencies, obtain Deputy Director approval, and file the plan with FERC. Draft Condition 9, in contrast, while stating that the licensee has the same one year period to develop and file an approved plan with FERC, in actuality provides for significantly less time. Specifically, the Draft Condition states that the licensee must provide copies of the plan to the resource agencies *and to FERC* “within nine months of license issuance.” It is not clear from the text of Draft Condition 9 how the one-year and nine-month timeframes are to be reconciled. Reconciliation of the two timeframes is particularly challenging given that the Draft Condition also requires the licensee to receive Deputy Director approval of the plan prior to filing it with FERC. This language suggests PG&E



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will, as a practical matter, have to circulate a draft plan well in advance of the nine-month period to ensure Deputy Director approval prior to submission to FERC “within nine months of license issuance.” Although it is unclear from the text of Draft Condition 9 what the precise timing requirements are for the submission of the plan, it is clear that a compressed timeframe of less than nine months is not practical.

Moreover, PG&E notes that the analogous condition in the Draft Water Quality Certification for the UARP, Draft Condition 6, does not contain the nine-month requirement. It simply tracks the requirements of the Settlement Agreement. PG&E respectfully requests that the State Water Board take the same approach with Chili Bar as it has with UARP and adopt the Settlement Agreement language. PG&E further requests that the State Water Board add language making it clear that the licensee may file the plan prior to receiving approval of the Deputy Director if doing so is necessary to meet a FERC deadline.

E. Draft Condition 11: Streamflow and Reservoir Level Public Information Services.

Draft Condition 11 alters the review and approval process for the Public Information Plan from that contained in the Settlement Agreement. Article 2-14 of the Settlement Agreement requires the licensee to submit to FERC “within 6 months of license issuance”, a public information plan that has been prepared in consultation with the resource agencies and that has been approved by BLM and the State Water Board. Draft Condition 11, in contrast, provides that the licensee shall submit the plan to the Deputy Director for review and approval “within four months of license issuance” and then file the plan with FERC “within six months of license issuance following Deputy Director approval.” In this way, the licensee is provided significantly less time to prepare a draft of the subject plan. While PG&E recognizes the State Water Board’s desire to review and approve the plan prior to its submission to FERC, shortening the timeframe for plan preparation to four months, PG&E suggests, is not practical.

Moreover, PG&E notes that the analogous condition in the Draft Water Quality Certification for the UARP, Draft Condition 7, does not contain the four-month requirement. It simply tracks the requirements of the Settlement Agreement. PG&E respectfully requests that the State Water Board take the same approach with Chili Bar as it has with UARP and adopt the Settlement Agreement language. This is particularly important because, as stated in Article 2-3 of the Settlement Agreement, this plan will be developed and implemented cooperatively with SMUD.



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PG&E further requests that the State Water Board add language making it clear that the licensee may file the plan prior to receiving approval of the Deputy Director if doing so is necessary to meet a FERC deadline.

F. Draft Condition 13: Hazardous Materials Plan.

Draft Condition 13 requires the licensee to file with FERC a plan approved by BLM and the Deputy Director for hazardous substances storage and spill prevention and cleanup. The Draft Condition requires that the plan be filed with FERC “[w]ithin one year of license issuance or prior to undertaking activities on BLM lands, whichever occurs first.” However, the Draft Condition also requires that the plan be submitted for Deputy Director review and approval “within nine months of license issuance.”

PG&E suggests that the nine-month language creates unnecessary complexity and ambiguity. For example, it is not clear under this language when the licensee would be required to submit the plan for Deputy Director approval in the event that it undertakes activities on BLM lands less than a year after license issuance. PG&E further notes that the analogous condition in the Draft Water Quality Certification for the UARP, Draft Condition 23, does not contain the nine-month requirement. It simply provides that the licensee “file with the Commission a plan approved by . . . the Deputy Director.” No timeframe for submission of the plan to the Deputy Director for such approval is indicated. In addition, while Draft Condition 13 for Chili Bar requires that additional plans or updates filed with FERC first be approved by the Deputy Director, Draft Condition 23 for the UARP does not require Deputy Director approval prior to submission of additional plans and updates to FERC.

PG&E respectfully requests that the State Water Board take the same approach with the Chili Bar project as it has with the UARP and simply require PG&E to file with FERC a plan approved by the Deputy Director. PG&E further requests that the State Water Board add language making it clear that the licensee may file the plan prior to receiving approval of the Deputy Director if doing so is necessary to meet a FERC deadline. Finally, PG&E requests that the State Water Board strike the requirement that any additional plans or updates filed with FERC first be approved by the Deputy Director. At a minimum, PG&E requests that such a requirement, if retained, again make clear that the licensee may file the additional plans or updates prior to receiving approval of the Deputy Director if doing so is necessary to meet a FERC deadline.

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II. DRAFT CONDITION 12: REINTRODUCTION OF ANADROMOUS FISH.

Draft Condition 12 states that “[i]t is possible that anadromous fish passage will be restored at Nimbus and/or Folsom Dams on the American River downstream of Chili Bar during the course of the Commission license term.” The Draft Condition requires PG&E “prior to the restoration of fish passage” to consult with the resource agencies and the State Water Board “to determine whether changes are needed in the certification conditions to protect beneficial uses associated with anadromous fish.” The Draft Condition further reserves to the Deputy Director authority to modify or add conditions to the certification based on the outcome of the consultation process.

As authority for this Draft Condition, Paragraph 25 of the Draft Certification cites to the National Marine Fisheries Service’s (“NMFS”) March 2009 Biological and Conference Opinion on the Long-term Operation of the Central Valley Project and State Water Project (“Biological Opinion”). Paragraph 25 notes that the NMFS Biological Opinion includes a measure to evaluate the feasibility of providing access for steelhead to habitat above Nimbus and Folsom Dams.

PG&E objects to this Draft Condition on several grounds and respectfully requests that it be withdrawn. First, the March 2009 NMFS Biological Opinion on which the Draft Condition is based was recently found by the U.S. District Court for the Eastern District of California to be “arbitrary, capricious, and unlawful,” and was remanded to NMFS. *See In re Salmonid Consolidated Cases*, 791 F.Supp.2d 802, 959 (E.D.Cal. 2011). The Court further ordered NMFS to submit a revised final Biological Opinion by February 1, 2016. *Id.*, 1:09-CV-01053 LJO DLB (E.D. Cal., Dec. 12, 2011). PG&E suggests that, given its legal infirmities, the relied-upon Biological Opinion does not provide a sufficient legal basis for the imposed Draft Condition. Second, PG&E believes the Draft Condition is unduly vague. The requirement that PG&E consult with the resource agencies and the State Water Board “prior to the restoration of fish passage” fails to provide a comprehensible standard. An appropriate standard, if this Condition remains, would be for the licensee to consult with the resource agencies and the State Water Board within 120 days after physical completion and initiation of operation of fish passage facilities at Nimbus and/or Folsom Dams. Finally, as noted in Section VII below, PG&E questions whether the State Water Board has the statutory authority to change unilaterally the requirements of a FERC license by imposing additional requirements sometime in the future.

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III. DRAFT CONDITION 19.

Draft Condition 19 provides as follows: "This certification is contingent on compliance with all applicable requirements of the Basin Plan." PG&E has objected to the inclusion of Draft Condition 19 in two recent Water Quality Certifications issued by the State Water Board for other PG&E hydroelectric projects: the Spring Gap-Stanislaus Project, FERC Project No. 2130 (Draft Condition 23), and the Pit 3, 4, 5 Project, FERC Project No. 233 (Draft Condition 13). PG&E objected to this draft Condition in the prior water quality certifications, and continues to object to its inclusion in the present water quality certification, because it would require PG&E to comply with "all applicable requirements" of the water quality plan for the Sacramento and San Joaquin River Basins. PG&E has contended that it is unfair for a compliance determination to hinge on the opinion of future regulators as to what may or may not have been intended as an "applicable requirement" of such a lengthy document, particularly one that may be changed from time to time. The State Water Board agreed to delete draft Condition 23 from the Spring Gap-Stanislaus certification and draft Condition 13 from the Pit 3, 4 & 5's certification. PG&E respectfully requests that Draft Condition 19 be deleted here as well.

IV. DRAFT CONDITION 26.

PG&E suggests that the requirement in Draft Condition 26 for PG&E to submit to the Deputy Director "any change to Chili Bar . . . that would adversely affect water quality" is vague and ambiguous, and would create an administrative burden far beyond what the State Water Board could efficiently process. PG&E instead proposes the State Water Board focus its oversight on facility changes that would have a significant or material effect on water quality, and suggests the following revisions:

The Licensee must submit any change to Chili Bar facilities, including project operations that would ~~adversely affect~~ have a significant or material effect on water quality, to the Deputy Director for review and written approval. If such a change would also require submission to the Commission, the change must first be approved by the Deputy Director, unless it must be submitted earlier to meet a Commission deadline.

Including a significance or materiality threshold as suggested above is consistent with Water Quality Certifications issued for PG&E's Spring Gap-Stanislaus Project (Condition 28), and Pit 3, 4, 5 Hydroelectric Project (Condition 15). PG&E also requests, as indicated, that the



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State Water Board include language in Condition 26 stating that PG&E may make the submission to FERC prior to receiving the Deputy Director's approval if doing so is necessary to meet a FERC deadline.

V. DRAFT CONDITION 28.

Draft Condition 28 reserves to the State Water Board the authority "to modify this certification if monitoring results indicate that Chili Bar would violate water quality objectives or impair the beneficial uses of the SF American River watershed." As noted below, PG&E does not believe that the State Water Board has the statutory authority to unilaterally change the requirements of a FERC license. In addition, the reference to "Chili Bar" is vague and ambiguous. PG&E assumes the State Water Board meant to reference "the operation and maintenance of Chili Bar". To the extent the State Water Board retains this Condition, PG&E requests that it be clarified as noted.

VI. DRAFT CONDITION 32.

To ensure that PG&E is afforded legally sufficient due process protections consistent with other water quality certifications issued by the State Water Board, PG&E respectfully requests that Condition 32 be amended to read: "When exercising its reserved authority as described in the General Conditions above, the State Water Board *may shall* provide notice and an opportunity for hearing." *See e.g. Water Quality Certification for the Spring Gap-Stanislaus Hydroelectric Project, FERC Project No. 2130, Condition 33.*

VII. RESERVATIONS OF AUTHORITY.

The Draft Water Quality Certification includes reservations of authority in Draft Conditions 12, 24, 27, 28, 29, 30 and 31 for which no reference to an underlying statute is given. The state's retained jurisdiction as stated in these Draft Conditions would allow the State Water Board to unilaterally change the requirements of PG&E's FERC license, in violation of the Federal Power Act. In addition, § 401 of the federal Clean Water Act, 33 U.S.C. § 1341, does not allow a water quality certification to be withdrawn once it is issued. Therefore, PG&E proposes that these Draft Conditions be stricken or substantially re-drafted to conform to the State Water Board's statutory authorities.

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VIII. CONCLUSION.

PG&E would like to thank the Board for the opportunity to submit these comments. It is PG&E's hope that it can continue to work cooperatively with the State Water Board to achieve reasonable solutions that fulfill all necessary water quality requirements while protecting existing beneficial uses, including the continuation of a clean, reliable, and economic energy source for California.

If you have any questions regarding these comments, please contact me at the e-mail or phone number listed above. You may also contact Lisa Whitman at (415) 973-7465.

Very truly yours,

Matthew A. Fogelson

MAF:bd
Dictated but not read.

cc: Ms. Gail Cismowski, Division Chief - SWRCB
Ms. Lisa Whitman, Project Manager – PG&E Power Generation
Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission
Service List for Chili Bar Hydroelectric Project, FERC Project No. 2155

ATTACHMENT D

**PG&E's Letter to
Mr. Thomas Howard,
Executive Director of SWRCB,
Requesting Preparation of
State Board Staff Record
in Connection with
Pacific Gas and Electric Company's
Petition for Reconsideration of the
Water Quality Certification for the
Chili Bar Hydroelectric Project
December 6, 2012**

COPY



**Pacific Gas and
Electric Company®**

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December 6, 2012

Via U.P.S. Next Day Air

Mr. Thomas Howard, Executive Director
STATE WATER RESOURCES CONTROL BOARD
1001 "I" Street
Sacramento, CA 95814-2828

**Re: Chili Bar Hydroelectric Project, FERC Project No. 2155
Request for Preparation of State Board Staff Record in Connection with
Pacific Gas and Electric Company's Petition for Reconsideration of the Water
Quality Certification for the Chili Bar Hydroelectric Project**

Dear Mr. Howard:

Pacific Gas and Electric Company ("PG&E") has filed its *Petition for Reconsideration of the Water Quality Certification for the Chili Bar Hydroelectric Project*, Federal Energy Regulatory Commission ("FERC") Project No. 2155. The Water Quality Certification was issued by you on November 9, 2012. As required by 23 California Code of Regulations § 3867(d)(9), PG&E requests that the State Water Board prepare the Staff Record, if available, for the Water Quality Certification in regard to PG&E's Chili Bar Hydroelectric Project which is designated as FERC Project No. 2155. This request for the Staff Record is a necessary part of the Petition for Reconsideration under the State Water Board's Regulations.

Any additional communications regarding this request should be directed to me at my telephone number listed above.

Thank you for your attention to this matter.

Very truly yours,

Matthew A. Fogelson
Law Department

MAF:bd

cc: Andrew H. Sawyer, SWRCB Asst. Chief Counsel – Water Rights & Tanks Branch,
Via U.P.S. Next Day Air
Mr. Les Grober, Division of Water Rights - SWRCB, *Via U.P.S. Next Day Air*
Ms. Erin Ragazzi, Division of Water Rights - SWRCB, *Via U.P.S. Next Day Air*

CERTIFICATE OF SERVICE

On December 6, 2012, I served a true and correct copy of the following document:

***Pacific Gas and Electric Company's
Petition for Reconsideration
of the Water Quality Certification for the
Chili Bar Hydroelectric Project***

on the following *via UPS Next Day Air Delivery*:

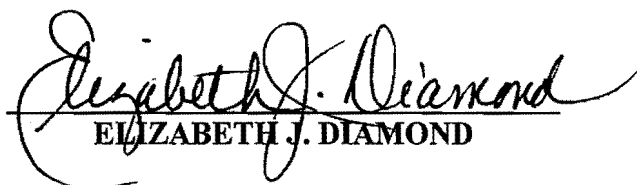
Mr. Thomas Howard, Executive Director
State Water Resources Control Board
1001 "I" Street
Sacramento, CA 95814-2828.

Mr. Robert Busby
Supervising Water Resources Control Engineer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Service was also completed by serving said document by U. S. Mail to all parties listed on the Service List on file with the FERC Docket Office for FERC Docket No. P-2155.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed in San Francisco, California on December 6, 2012.


ELIZABETH J. DIAMOND