

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

Counties: El Dorado County

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

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

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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.

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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

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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.

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) **place holder 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	4 Hrs @ 1750	4 Hrs @ 1750				
	Memorial Day – Labor Day ¹	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750				
	Tuesday after Labor Day - September				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	6 Hrs @ 1750	6 Hrs @ 1750				
	Memorial Day – Labor Day ¹	4 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750				
	Tuesday after Labor Day - September				3 Hrs @ 1500			
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						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.

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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 Report ⁴ 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 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.

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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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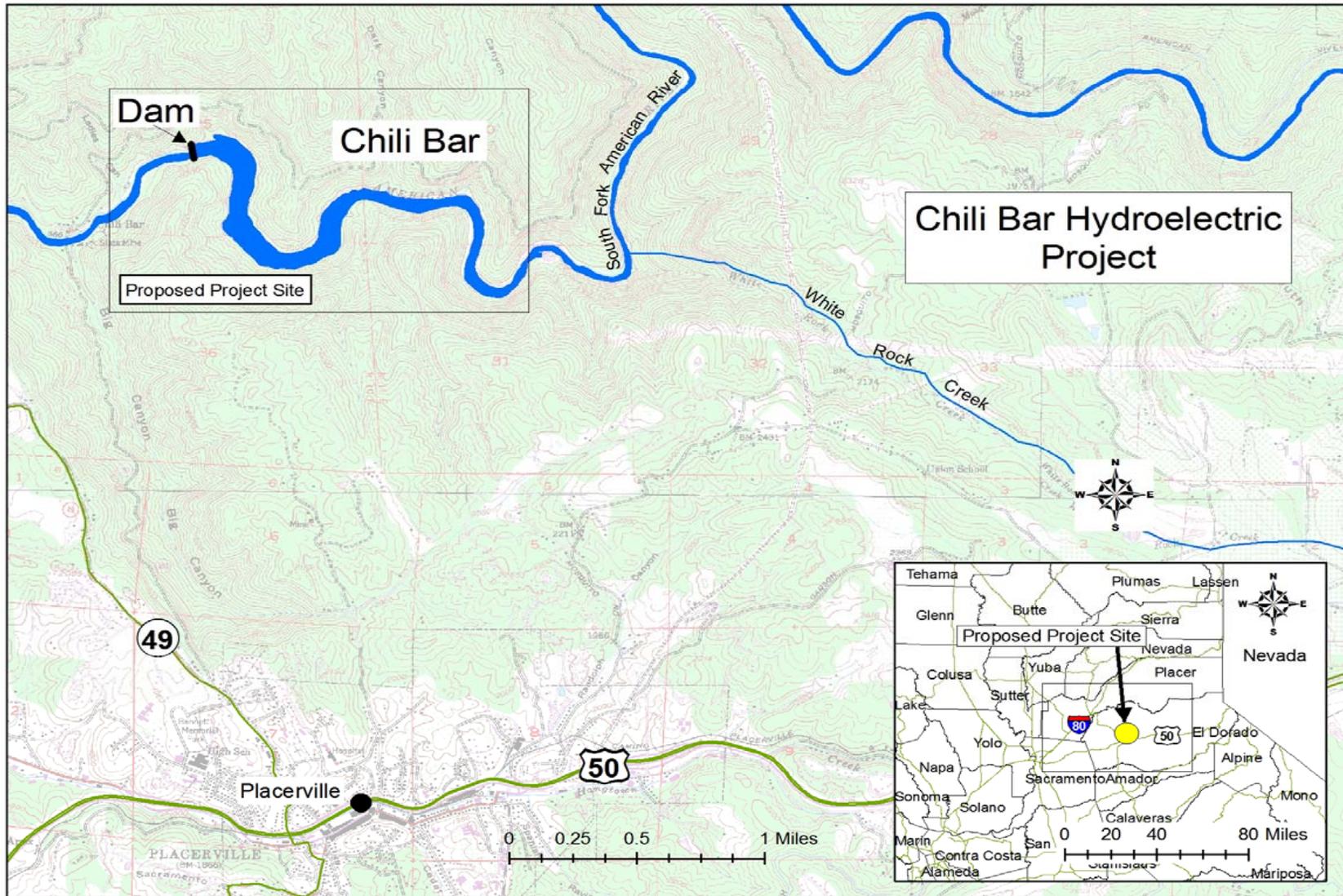
Thomas Howard
Executive Director

Date

Attachment A: Location Map

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ATTACHMENT A - LOCATION MAP