STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for

PACIFIC GAS AND ELECTRIC COMPANY

KILARC-COW CREEK HYDROELECTRIC PROJECT LICENSE SURRENDER

FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 606

SOURCES: OLD COW CREEK AND SOUTH COW CREEK

COUNTY: SHASTA

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

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1.0 Background

Pacific Gas and Electric Company (PG&E) owns and operates the Kilarc-Cow Creek Hydroelectric Project (Project), which is located in Shasta County. The Project is licensed by the Federal Energy Regulatory Commission (FERC) and is designated as FERC Project No. 606. The Project's existing license expired on March 27, 2007, and the Project continues to operate under annual licenses issued by FERC. PG&E initially sought a new license for the Project and filed a Notice of Intent (NOI) to relicense with FERC in 2002.

On March 31, 2005, PG&E notified FERC that it would not seek a new license for the Project based on its determination that Project decommissioning was a viable and cost-effective alternative to relicensing. On April 7, 2005, FERC solicited applications to take over the Project from potential applicants. There were no timely license applications filed.[1] PG&E opted not to proceed with relicensing and instead, on March 13, 2009, filed a License Surrender Application (LSA) with FERC.

2.0 Existing Facilities and Operations

The Project consists of two developments constructed between 1904 and 1907: the Kilarc Development on Old Cow Creek and the Cow Creek Development on South Cow Creek. The total generation capacity of the Project is 4.67 megawatts (MW). A description of these two developments is provided below (PG&E 2009a). See Figure 1 for a Kilarc-Cow Creek Hydroelectric Project Schematic of Creeks, Canals, and Diversions.

2.1 Kilarc Development

The Kilarc Development operates as a run-of-river facility, which uses the natural flow and elevation drop of Old Cow Creek to generate electricity. The Old Cow Creek watershed encompasses about 80 square miles, including 25 square miles located upstream of the Kilarc Main Diversion Dam. Average yearly runoff at the dam is 48,900 acre-feet (ac-ft), about 55 percent of which is diverted to the Kilarc Powerhouse for hydroelectric generation. Water flow associated with the Kilarc Development is outlined below:

[1] Synergics Energy Development, Inc. (Synergics) filed a NOI to take over the Project on June 7, 2005. However, Synergics failed to file an application for new license by the December 27, 2006 deadline established by FERC, and Synergics' request to extend the deadline was denied.

a) Water is diverted from North Canyon Creek into the North Canyon Creek Canal (0.35-mile, 3-feet (ft) by 1.5-ft, unlined canal) at the North Canyon Creek Diversion Dam and conveyed to South Canyon Creek;

b) Water is diverted from South Canyon Creek into the South Canyon Creek Canal (0.71-mile, 4-ft by 2-ft, unlined canal and 0.03-mile, 2-ft by 1.8-ft, wooden flume) at the South Canyon Creek Diversion Dam and conveyed into the Kilarc Main Canal;

c) Water is diverted from Old Cow Creek into the Kilarc Main Canal (2.03-mile concrete canal, 1.44-mile metal and wooden flume, and 0.18-mile 6-ft by 7-ft wood-lined tunnel) at the Kilarc Main Diversion Dam;

d) Water in the Kilarc Main Canal flows to Kilarc Forebay and then through the penstock to the Kilarc Powerhouse; and

e) Water is then returned to Old Cow Creek near the Kilarc Powerhouse, about four miles downstream from the Kilarc Main Diversion Dam.

The Kilarc Forebay Dam is an earthfill dam with a maximum height of 13 ft. The spillway of the Kilarc Forebay Dam is rated for 50 cubic feet per second (cfs), which is also the Kilarc Main Canal's approximate capacity. The Kilarc Forebay surface water level averages approximately 3,779 ft above mean sea level (msl). Daily water level fluctuation in the Kilarc Forebay during normal operation is approximately one foot (FERC 2011). Kilarc Forebay has a gross and useable storage capacity of 30.4 ac-ft and has a surface area of 4.5 acres. Water for power generation is discharged from Kilarc Forebay to the Kilarc Powerhouse through a 4,801-ft-long penstock with a maximum capacity of 43 cfs. The Kilarc Powerhouse is located at 2,580 ft above msl and is designed for semi-automatic operation, with forebay level control. The Kilarc Powerhouse operates unattended with alarms connected to PG&E's Pit 3 Powerhouse.[2] The Kilarc Powerhouse is a 65-ft-wide by 40-ft-long steel frame structure composed of rubble masonry walls and a corrugated iron roof, housing two turbines and generators with a maximum combined generation capacity of 3.23 MW.

2.2 Cow Creek Development

The Cow Creek Development operates as a run-of-river facility. South Cow Creek watershed encompasses about 78 square miles, including 53 square miles located upstream of the South Cow Creek Diversion Dam. Average annual runoff at South Cow

[2] The Pit 3 Powerhouse is part of PG&E's Pit 3, 4, and 5 Hydroelectric Project, also known as FERC Project No. 233.

Creek Diversion Dam is approximately 79,500 ac-ft, about 37 percent of which is diverted to the Cow Creek Powerhouse. Water flow associated with the Cow Creek Development is outlined below:

a) Water is diverted from Mill Creek into the Mill Creek-South Cow Creek Canal (0.17-mile, 5-ft by 3.3-ft, unlined canal) at the Mill Creek Diversion Dam and conveyed into South Cow Creek;

b) Water is diverted from South Cow Creek into the South Cow Creek Main Canal (2.02-mile, 13-ft by 4.8-ft, shotcrete-lined and unlined canal and 200-ft long, 6-ft by 6.8-ft tunnel) at the South Cow Creek Diversion Dam and conveyed into the Cow Creek Forebay; and

c) Water flows from Cow Creek Forebay into the Cow Creek Penstock and Cow Creek Powerhouse before it is returned to South Cow Creek via Hooten Gulch (0.5-mile, shotcrete-lined and unlined ephemeral stream).

The Cow Creek Forebay Dam is an earthfill dam with a maximum height of 16 ft. Cow Creek Forebay has a surface area of one acre and a useable storage capacity of 5.4 ac-ft. The Cow Creek Forebay surface water elevation is approximately 1,555 ft above msl, and daily water surface elevation fluctuates by about one foot during normal operations (FERC 2011). The Cow Creek Penstock is 4,487-ft-long. The spillway at Cow Creek Forebay is rated for 50 cfs, which is also the South Cow Creek Main Canal's approximate capacity. The Cow Creek Powerhouse is located at 856 ft above msl and is a steel truss structure that is about 53.5-ft long by 35-ft wide, housing two turbines and generators with a maximum combined generation capacity of 1.44 MW. The Cow Creek Powerhouse is designed for semi-automatic operation, with forebay level control. It operates unattended with alarms connected to PG&E's Pit 3 Powerhouse.

3.0 Proposed Project Description

In March 2005, PG&E, State Water Resources Control Board (State Water Board), California Department of Fish and Game[3], United States Fish and Wildlife Service (USFWS), National Park Service, National Oceanic and Atmospheric Association (NOAA) Fisheries, Trout Unlimited, and Friends of the River executed the ***Kilarc-Cow Creek Project Agreement*** (Agreement) (PG&E 2005). The Agreement identified specific objectives and desired conditions for decommissioning the Project. Pursuant to

[3] The California Department of Fish and Game was subsequently renamed the California Department of Fish and Wildlife. (Fish & G. Code, § 700; Assembly Bill 2402 [Stats. 2012, ch. 559].)

the Agreement, PG&E agreed not to file an application for a new license and instead agreed to support decommissioning the Project. In March 2009, PG&E filed its LSA with FERC.

The Kilarc-Cow Creek Hydroelectric Project License Surrender (Proposed Project) generally consists of the following elements:

a) Surrender the Project license in accordance with the Agreement; and

b) Decommission and remove, modify, or leave in place several Project features and facilities, including:

    1) Remove diversion dams to allow for free passage of fish and sediment;

    2) Remove electric generators, turbines, and other equipment from the Kilarc Powerhouse and Cow Creek Powerhouse structures;

    3) Grade and fill forebays;

    4) Leave in place some diversion dam abutments and foundations to protect stream banks and provide grade control;

    5) Leave in place and secure Kilarc Powerhouse and Cow Creek Powerhouse structures during decommissioning with an option for preservation of the powerhouses' structures for future reuse as historic points of interest (e.g., museums);

    6) Leave in place, breach, or fill canal segments and remove metal and wood flume structures in consultation with affected landowners; and

    7) Retire Project access roads, where possible.

The LSA included protection, mitigation, and enhancement (PM&E) measures and a Proposed Decommissioning Plan (PG&E 2009b). The PM&E measures and other measures detailed in the Proposed Decommissioning Plan or elsewhere in PG&E's LSA are also integral elements of the Proposed Project.

As part of the Proposed Project, PG&E will develop detailed engineering and management plans for Project decommissioning after FERC issues a final license surrender order. Upon receipt of State Water Board water quality certification (water quality certification or certification), any other required approvals, and FERC's final license surrender order, PG&E intends to commence phased Project decommissioning in accordance with the LSA and the detailed engineering and management plans.

4.0 Regulatory Authority

4.1 Water Quality Certification

The federal Clean Water Act (33 U.S.C. § 1251 et seq.) 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 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) (Section 401) requires every applicant for a federal license or permit for an activity that 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 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 requirements 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 authority to act on applications for certification to its Executive Director. (Cal. Code Regs., tit. 23, § 3838, subd. (a).) The State Water Board may add conditions to any certification to "ensure that all activities will comply with applicable water quality standards and other appropriate requirements." (Cal. Code Regs., tit. 23, § 3859, sudb. (a).)

Water Code section 13383 provides the State Water Board with the authority to "establish monitoring, inspection, entry, reporting, and recordkeeping requirements… and [require] other information as may be reasonably required" for activities subject to certification under Section 401. For activities that involve the diversion of water for beneficial use, the State Water Board delegated this authority to the Deputy Director for the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution 2012-0029. In the *Redelegation of Authorities Pursuant to Resolution No. 2012-0029* memo issued by the Deputy Director on October 19, 2017, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights.

PG&E originally applied for water quality certification for the Proposed Project on August 18, 2009. On September 16, 2009, State Water Board staff provided notice of receipt of a complete application for the Proposed Project to the applicable parties

pursuant to California Code of Regulations, title 23, section 3835, subdivision (c). State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Proposed Project on the State Water Board's website, on September 15, 2009. No comments were received by the State Water Board at that time. The State Water Board's records and the FERC docket for the Project contain more detail about ongoing work and procedural matters associated with the Project and the Proposed Project after this date.

State Water Board staff forwarded the portions of the application that have the potential to cause adverse water quality impacts, other than specific impacts resulting from alterations to instream flows, to the Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) on February 26, 2019. (See Cal. Code Regs., tit. 23, § 3855, subd. (b)(2)(B).) Additionally, State Water Board staff requested input from the Central Valley Regional Water Board regarding this certification on March 11, 2019. No comments were received.

The State Water Board is issuing this certification of PG&E's Project decommissioning, as Section 401 requires before FERC may issue the license surrender order and before the United States Army Corps of Engineers (USACE) may issue associated permits for discharge of dredged or fill material.

4.2 Water Quality Control Plans and Related Authorities

The California Regional Water Quality Control Boards (Regional Water Boards) have primary responsibility for the formulation and adoption of water quality control plans for their respective regions, subject to State Water Board and United States Environmental Protection Agency (USEPA) approval, as appropriate. (Wat. Code, § 13240 et seq.) The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same water to the extent of any conflict. (*Id.*, § 13170.) For a specified area, the water quality control plans designate the beneficial uses of water to be protected, water quality objectives established for the reasonable protection of those beneficial uses or the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (*Id.*, §§ 13241 & 13050, subds. (h) & (j).) The beneficial uses, together with the water quality objectives that are contained in the water quality control plans, in addition to the state and federal anti-degradation requirements, constitute California's water quality standards.

The Central Valley Regional Water Board adopted, and the State Water Board and the USEPA approved, the ***Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*** (Basin Plan) (Central Valley Regional Water Board 2018). The Basin Plan identifies the existing beneficial uses for the Cow Creek

watershed[4] as: agricultural supply (irrigation and stock watering); hydropower generation; water contact recreation; non-contact water recreation; cold freshwater habitat; migration of aquatic organisms (cold); spawning, reproduction, and/or early development (warm and cold); and wildlife habitat (Central Valley Regional Water Board 2018). Municipal and domestic supply and canoeing and rafting (a specifically identified water contact recreation use) are identified as potential beneficial uses for the Cow Creek watershed.

4.3 Construction General Permit

PG&E may need to obtain coverage under the State Water Board's National Pollutant Discharge Elimination System (NPDES) *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) (State Water Board 2009) and any amendments thereto. Coverage under the Construction General Permit may be required for activities that disturb one or more acres of soil, or that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activity subject to the Construction General Permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

4.4 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

On April 2, 2019, the State Water Board adopted the ***State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*** (Procedures; State Water Board 2019)[5]. The Procedures provide the State's definition of wetland, wetland delineation procedures, and procedures for submitting applications for activities that could result in discharges of dredged or fill material to waters of the state. The Procedures ensure that State Water Board regulatory activities will result in no net loss of wetland quantity, quality, or permanence, compliant with Executive Order W-59-93. PG&E will need to comply with the Procedures when conducting Project

[4] The Basin Plan states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. Therefore, the beneficial uses that the Basin Plan designates for Cow Creek (hydrologic unit 507.30) also apply to tributaries including North Canyon Creek, South Canyon Creek, Hooten Gulch, Mill Creek, Old Cow Creek, and South Cow Creek.

[5] The Office of Administrative Law approved the Procedures on August 28, 2019. The Procedures become effective on May 28, 2020.

decommissioning dredge or fill activities, which may impact waters of the state, including wetlands (see Conditions 18 and 19).

4.5 California Environmental Quality Act Compliance and Certification of Final Environmental Impact Report

The State Water Board is the lead agency for the Proposed Project for the purpose of compliance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, div. 13 [§ 21000 et seq.]) and CEQA Guidelines (Cal. Code Regs., tit. 14, div. 6, ch. 3 [§ 15000 et seq.]). A Notice of Preparation (NOP) of an Environmental Impact Report (EIR) was issued on March 12, 2013, and a scoping meeting was held in Palo Cedro, California, on April 10, 2013, to solicit public input. Fourteen parties submitted comments in response to the NOP. A Draft EIR was issued on April 8, 2019 with a 45-day comment period that concluded on May 24, 2019. Comments in response to the Draft EIR were received from nine parties. These comments were considered in development of the Final EIR and associated responses to comments. Pursuant to subdivision (b) of section 15088 of the CEQA Guidelines, on June 11, 2019, the State Water Board responded in writing to the National Marine Fisheries Service (NMFS) of NOAA regarding its comments, dated May 24, 2019. Pursuant to sections 15088 and 15132 of the CEQA Guidelines, the State Water Board included a summary of comments and recommendations received on the Draft EIR and its responses to comments in Attachment G of the Final EIR.

In accordance with State Water Board regulations and CEQA Guidelines, the Executive Director, on behalf of the State Water Board, certifies that the Final EIR has been completed in compliance with CEQA. (CEQA Guidelines, §§ 15025 & 15090, subd. (a)(1).) The Executive Director, as the individual delegated by the State Water Board with the decision-making authority for this Proposed Project, has independently reviewed and considered the record, including the Final EIR, prior to certifying the Final EIR and adopting the certification. (CEQA, § 21082.1, subd. (c)(1); CEQA Guidelines, § 15090, subd. (a)(2).) The State Water Board has reviewed the Final EIR and bases its determination on the substance of the information it contains. The State Water Board, through the Executive Director, certifies that the Final EIR is adequate to support approval of the Proposed Project, with incorporation of the mitigation, monitoring, and reporting requirements (see Table A, below) and Findings of Fact and Statement of Overriding Considerations (Attachment A of this certification). Table A identifies mitigation measures and corresponding water quality certification conditions with monitoring and reporting requirements.

Table A. Final EIR Mitigation Measures and Water Quality Certification Conditions

Final EIR Mitigation Measure	Applicable Certification Condition	Timing of Mitigation
Mitigation Measure 4.7-4: Clean Equipment and Establish Weed Wash Stations	Condition 24	Equipment inspection and cleaning will be performed prior to transport to Project decommissioning site.
Mitigation Measure 4.7-9: Abbott Ditch Wetland and Riparian Areas	Condition 19	Prior to commencing activities that will cease or substantially reduce Cow Creek Development tailrace water discharges to Hooten Gulch.
Mitigation Measure 4.7-10: Abbott Ditch Special-Status Species	Condition 19	Prior to commencing activities that will cease or substantially reduce Cow Creek Development tailrace water discharges to Hooten Gulch.

The State Water Board will file a Notice of Determination within five days of issuance of this water quality certification. All documents and other information that constitute the record for this Project decommissioning are maintained and available for public review at the State Water Board, Division of Water Rights, 1001 I Street, Sacramento, California.

5.0 Water Supply

The water rights for both Old Cow Creek and South Cow Creek were adjudicated in 1969 by Decree No. 38577, *In the Matter of the Determination of the Rights of the Various Claimants to the Water of Cow Creek Stream System, Excepting Clover Creek, Oak Run Creek, and North Cow Creek, in Shasta County, California* (Decree) (Super.

Ct. Shasta County 1969). The Decree adjudicates the water rights of all claimants in the Cow Creek stream system, including Cow Creek, Old Cow Creek, South Cow Creek, and tributaries from the headwaters to the confluence with the Sacramento River, but explicitly excludes Clover Creek, Oak Run Creek, and North Cow Creek. (Super. Ct. Shasta County 1969, p. 2.) The Shasta County Superior Court has ongoing jurisdiction to administer the water rights under the Decree. There currently is no watermaster service for the adjudication.

Under the Decree, PG&E holds four pre-1914 water rights[6] in the Old Cow Creek watershed and two pre-1914 water rights[7] in the South Cow Creek watershed (PG&E 2009a). The three primary water rights in the Old Cow Creek watershed are for non-consumptive use for power generation at the Kilarc Powerhouse: a right to divert 2.5 cfs from North Canyon Creek into the North Canyon Creek Canal; a right to divert 7.5 cfs from South Canyon Creek into the South Canyon Creek Canal; and a right to divert 58 cfs from Old Cow Creek into the Kilarc Main Canal. However, the North Canyon Creek and South Canyon Creek diversions have not been operated in over 15 years, in part because of the requirement to meet superior downstream water rights on South Canyon Creek. The fourth water right in the Old Cow Creek watershed is 0.01 cfs for domestic use at the Kilarc Powerhouse. The two water rights in the South Cow Creek watershed, associated with the Cow Creek Development, are for non-consumptive use for power generation at the Cow Creek Powerhouse: a right to divert 12.1 cfs from Mill Creek into the Mill Creek Canal and a right to divert 45.9 cfs from South Cow Creek into the South Cow Creek Main Canal. PG&E is also an individual shareholder in the South Cow Creek Ditch Association and is thereby entitled to divert: 1.44 cfs from South Cow Creek via the German Ditch, for discharge into Mill Creek and rediversion into the Mill Creek Canal; and 2 cfs from South Cow Creek into the South Cow Creek Main Canal.[8]

PG&E currently proposes to dispose of the six Cow Creek stream system water rights it holds outright by abandoning them following receipt of FERC's final license surrender order approving decommissioning. PG&E has also stated its intent to divest its shares in, and its proportional ownership of, South Cow Creek water rights held by the South Cow Creek Ditch Association. The Agreement envisioned that PG&E would, upon

[6] Decree diversion Nos. 3, 4, 4c, and 10. See Super. Ct. Shasta County 1969, pp. 150-151, 175-176.

[7] Decree diversion Nos. 64 and 71. See Super. Ct. Shasta County 1969, pp. 16, 158-159.

[8] Decree diversion Nos. 43 and 64. See Super. Ct. Shasta County 1969, pp. 14-16.

receiving a final license surrender order from FERC, "transfer its appropriative water rights held for operation of the Project ... to a resource agency or other entity that: 1) agrees to use the water rights to protect, preserve, and/or enhance aquatic resources, as authorized by applicable laws and regulations, such as Water Code section 1707; and 2) is acceptable to the [parties of the Agreement][9]." However, after discussions with parties of the Agreement, PG&E proposed to instead abandon its Project-related water rights. PG&E has stated it believes that abandoning its water rights, effectuated by the removal of the diversion structures without an intent to resume the diversions, will achieve the desired conditions and goals of the Agreement more efficiently and with greater certainty than would seeking to transfer those rights to a third party. There is only one decreed water right holder in any of the bypass reaches, and that water right holder would continue to be authorized to divert only its decreed amount of water regardless of whether PG&E abandons its Project-related water rights. Any new appropriations of water from the Cow Creek stream system would also be limited both by the court approvals necessary to further amend the Decree and by the State Water Board's declaration that the Cow Creek stream system, from its headwaters to its confluence with the Sacramento River, is fully appropriated from April 1 to November 30[10].

As discussed above, PG&E proposes to benefit instream aquatic resources by abandoning its water rights to, and ceasing diversions from the Old Cow Creek and South Cow Creek watersheds. Based on the State Water Board's review and current understanding, PG&E's proposal to cease its diversions and allow the water to instead remain instream would satisfy the goals and desired conditions of the Agreement and would not violate the Decree.

5.1 Abbott Ditch

Upon completion of Project construction in 1907, PG&E began diverting water from South Cow Creek to the Cow Creek Powerhouse. The water is then discharged into Hooten Gulch and eventually flows back into South Cow Creek. However, eight private landowners, commonly referred to as the Abbott Ditch Users, divert water from a point on Hooten Gulch, a few feet upstream from Hooten Gulch's confluence with South Cow Creek. This point of diversion is not part of the Project and belongs to the Abbott Ditch Users, who convey this water through the Abbott Ditch for irrigation, stockwatering, and domestic use on their properties. Under the Decree, the Abbott Ditch Users are entitled to divert 13.13 cfs "from the natural flow of the east channel of South Cow Creek."

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[9] See PG&E 2005, p. 3.

[10] See State Water Board 1998, Exh. A, p. 52.

(Super. Ct. Shasta County 1969, p. 20.) The Decree further states that the Abbott Ditch diversion works "may be extended to control and divert all flows to which the shareholders are entitled occurring in either the east or the west channels of South Cow Creek." (*Ibid*.) In 2012, the court granted a motion to amend the Decree's legal description of the Abbott Ditch point of diversion to its actual location along Hooten Gulch. In granting the motion, the court ruled that the amendment was a technical correction to the Decree to reflect both the course of the "east channel" of South Cow Creek as of 1969 and the court's intent at that time. In amending the Abbott Ditch legal description in 2012, the court also stated that it was not making a determination of, and did not modify or materially alter, the rights of any parties to the Decree. The court made no ruling on whether the "east channel" of South Cow Creek still existed or flowed into Hooten Gulch. Records available to the State Water Board for purposes of this certification indicate that the USACE disconnected or leveed this "east channel" in the 1970's in such a manner that South Cow Creek does not presently directly flow to or past the Abbott Ditch point of diversion.

The Abbott Ditch Users' objections to the Proposed Project include concerns over harmful materials (e.g., naturally occurring trace metals) impounded behind South Cow Creek Diversion Dam that may be mobilized upon dam removal. North State Resources Inc. conducted a soil assessment study in 2008 to evaluate trace metal accumulation behind South Cow Creek Diversion Dam. The soil assessment study found trace metals in the sediment above the diversion dam (i.e., mercury, methylmercury, silver, copper, and arsenic), but all concentrations of these metals were below Threshold Effect Levels and Probable Effect Levels[11] (NSR 2008b). The soil assessment study also found that removing South Cow Creek Diversion Dam would not degrade upstream and downstream stream reaches and that concentrations of trace metals in impounded sediment would not impact water quality or beneficial uses of South Cow Creek. Moreover, the study noted that stability and habitat quality in the reach would likely improve as a result of stored sediment scour after South Cow Creek Diversion Dam removal. This certification includes conditions to ensure that fish passage is maintained, and that water quality will continue to support domestic use and all other designated beneficial uses.

The Abbott Ditch Users also object to the Proposed Project because it would affect their ability to receive water from their existing point of diversion once Cow Creek

[11] The Threshold Effect Level is the concentration of a given substance below which adverse biological impacts occur infrequently. The Probable Effect Level is the concentration above which adverse biological impacts occur frequently (Canadian Council of Ministers of the Environment 2001).

Powerhouse ceases discharges into Hooten Gulch. If the Cow Creek Development is decommissioned, the Abbott Ditch Users would no longer have access to year-round artificial flows at their current point of diversion. Citing both the Decree and an alleged contractual arrangement between predecessors in interest, the Abbott Ditch Users argue that it is PG&E's obligation to ensure access to year-round flows in Abbott Ditch even after the Project's decommissioning. PG&E argues that this issue cannot be appropriately resolved in the water quality certification process.

South Cow Creek is the source of water to which the Abbott Ditch Users hold a right under the Decree. The record indicates that the Abbott Ditch point of diversion does not presently abut or directly divert water from South Cow Creek. The record indicates that the Abbott Ditch Users instead divert from Hooten Gulch, which receives and conveys substantial artificial water flows from the tailrace of PG&E's Cow Creek Development. In the absence of PG&E's Project, Hooten Gulch is a natural ephemeral stream that drains to South Cow Creek. Records indicate that, today and for at least several decades, due to significant modifications to the "east channel of South Cow Creek," Hooten Gulch has not received or conveyed water *from* South Cow Creek, except the artificial flows discharged from the Cow Creek Development tailrace. The manner in which the Abbott Ditch Users divert and convey water from Hooten Gulch for use on their properties for beneficial uses would be affected by Project decommissioning. PG&E would not continue to discharge artificial flows into Hooten Gulch if it decommissions the Cow Creek Development and ceases its associated water diversions as proposed.

PG&E's ceasing its own diversions from South Cow Creek does not necessarily constitute an injury to Abbott Ditch Users' water rights. To the State Water Board's knowledge, the Abbott Ditch Users have and would continue to have their full water rights to South Cow Creek recognized under the Decree. The California Supreme Court has held that "the producer of an artificial flow is for the most part under no obligation to lower claimants to continue to maintain it. At any time he may forsake the practice, and lower users will not have acquired a right against him, either by appropriation or prescription, to continued augmentation of the natural volume of the stream." (*Stevens v. Oakdale Irr. Dist.* (1939) 13 Cal.2d 343, 348.) The Abbott Ditch Users would continue to have the rights to extend their diversion works to reach and directly divert from South Cow Creek itself, as specified in the Decree.

The State Water Board has considered the Abbott Ditch Users' previous comments and concerns relating to the potential water supply impacts from Project decommissioning. Project decommissioning would not alter the quality of water such that it would be of insufficient quality to support the beneficial uses of South Cow Creek, including those uses of the Abbott Ditch Users. Nor, to the State Water Board's knowledge and

understanding, would Project decommissioning injure or interfere with the actual water rights of the Abbott Ditch Users, as recognized in the Decree.

From the State Water Board's perspective, it is not necessarily reasonable or required that PG&E maintain its existing facility and diversions, or construct and maintain substitute facilities and diversion works, solely for maintaining the delivery of additional water to Hooten Gulch diverters such as the Abbott Ditch Users or Tetrick Ranch. PG&E's rights to South Cow Creek under the Decree are specifically for power use, and PG&E has indicated it no longer intends to operate its Cow Creek Development facilities for hydropower generation. It is also not clear from the records available whether Tetrick Ranch or the Abbott Ditch Users have a valid claim of contract with, or reasonable reliance on, PG&E for water diversion, supply, and delivery. Claims related to PG&E's changes to these other users' diversion or conveyance appear to be civil matters that must be resolved among the parties, whether voluntarily or in court.

From at least 2007 to 2009, PG&E and the Abbott Ditch Users reportedly met regarding the cessation of flows in Hooten Gulch, and potential future water supply alternatives, in light of PG&E's intended Project decommissioning. PG&E, the Abbott Ditch Users, and Tetrick Ranch stated previously that they had executed confidentiality agreements governing discussions. The State Water Board recommends that the parties continue or renew these discussions of alternative water supply solutions separately from the water quality certification process.

5.2 Kilarc Forebay

Kilarc Forebay is a Project facility used to hold water diverted from Old Cow Creek at the Kilarc Main Diversion Dam before it enters the penstocks to Kilarc Powerhouse. As there is no other inflow besides Kilarc Main Canal, Kilarc Forebay is an unnatural waterway with about 30.4 ac-ft of artificial fish habitat. The forebay provides a local recreational fishing opportunity and supports wild brown and rainbow trout as well as hatchery-raised rainbow trout, according to a 2003 fish population survey (PG&E 2007).

As part of Project decommissioning, the Kilarc Development will be decommissioned as described in PG&E's LSA, and all waters formerly diverted and conveyed through the Kilarc Development will instead remain in Old Cow Creek. Although there is community support to preserve the Kilarc Forebay for local recreation, the ecological benefits of decommissioning the facility and returning flow to Old Cow Creek outweigh the value of continuing diversions. Local opponents to Project decommissioning state that removing the forebay would adversely affect regional groundwater sources, arguing that infiltration through fractured rock under the Kilarc Forebay recharges nearby wells. However, it is unlikely that infiltration through the forebay significantly affects

groundwater levels due to the accumulation of sediment deposits on the forebay floor. Furthermore, increasing streamflow in the bypass reach of Old Cow Creek would have a similar, if not greater, likelihood of recharging groundwater levels because the primary sources of groundwater recharge are through infiltration of stream flow and rainfall (DWR 2004).

While some commenters assert the Kilarc Forebay and Kilarc Main Canal provide good habitat for native fish, the canal and forebay lack many natural features that are found in the bypass reach of Old Cow Creek. Good quality trout habitat indicators in the bypass reach of Old Cow Creek include ample riparian vegetation, large woody material, varying geomorphic units, and suitable substrate (PG&E 2007). The habitat in the Kilarc Main Canal and Kilarc Forebay that will be lost because of Project decommissioning is poor quality. The habitat that will be gained in the bypass reach of Old Cow Creek due to increased flows is very good quality.

In addition to improving physical habitat, increasing flows in the main channel of Old Cow Creek will also decrease water temperatures, increase available spawning gravel, and expand wetted habitat area for instream species. Since water flowing downstream will not be diverted to an open canal and shallow forebay, it will be less susceptible to warming by ambient temperatures while it remains in the fast-flowing and shaded channel of Old Cow Creek (PG&E 2007). Lower water temperatures will benefit the majority of trout life stages present in the Cow Creek watershed. Natural geomorphic processes will also resume once the diversion dams are removed, which is crucial for replenishing spawning gravel at possible spawning sites in the bypass reach. The natural flow of sediment will be bolstered by higher winter flows and significantly higher summer flows (FERC 2011). Higher flows will increase water depth, velocity, and cross-sectional area, which will increase the quantity of good quality fish habitat.

6.0 Rationale

When preparing the conditions in this certification, State Water Board staff reviewed and considered: (a) PG&E's LSA; (b) comments on the LSA submitted by agencies and interested parties; (c) PG&E's application for water quality certification; (d) FERC's Final Environmental Impact Statement (EIS) prepared pursuant to the National Environmental Policy Act; (e) NMFS's Biological Opinion; and (f) comments on the State Water Board's Draft EIR. State Water Board staff also considered the Basin Plan, existing water quality conditions, Project decommissioning-related controllable water quality factors, and other information in the record (e.g., Decree, Agreement, etc.).

Any conditions that require development of a plan will require review, modification (if necessary), and approval by the Deputy Director. In addition, other regulatory agencies

have specific authorities to approve plans and reports. The following describes the rationale used to develop the conditions in the water quality certification.

6.1 Rationale for Condition 1 – Minimum Instream Flows

Project decommissioning will restore unimpaired natural flow to the bypass reaches of Old Cow Creek and South Cow Creek. In the interim, until the Kilarc Main Diversion Dam and South Cow Creek Diversion Dam are removed, Condition 1 requires PG&E to maintain existing minimum instream flow requirements outlined in Article 42 of FERC's ***Order Approving Revised Exhibit S and Amending License*** (FERC 1982). These flows are critical to help maintain aquatic habitat and species in the bypass reaches in advance of Project decommissioning activities.

6.2 Rationale for Condition 2 – Foothill Yellow-Legged Frogs and California Red-Legged Frogs

Foothill yellow-legged frogs (FYLFs) are identified as a candidate species under the California Endangered Species Act (ESA) by the California Department of Fish and Wildlife (CDFW). In addition, California red-legged frogs (CRLFs) are federally threatened under the federal ESA by USFWS. FYLFs were found in the Cow Creek Development during PG&E's 2003 reconnaissance-level surveys (PG&E 2009a). Although one FYLF was reported upstream of the Kilarc Powerhouse in 2001, suitable habitat for adults and juveniles was predominantly identified upstream and downstream of the South Cow Creek bypass reach, as well as in the Hooten Gulch area.

The historical range of the CRLFs included Shasta County, but California Natural Diversity Database (CNDDB) records place the Project area at the extreme northeastern edge of CRLF distribution (PG&E 2004, updated 2007). CRLFs have not been identified in Shasta County for nearly 100 years, and the nearest CNDDB record is about 50 miles southwest of the Project (PG&E 2009a). Potential CRLF "summer habitat" exists along Hooten Gulch within 100 ft of its confluence with South Cow Creek (PG&E 2009a). Condition 2 of this certification requires PG&E to conduct pre-construction surveys, biweekly (every two weeks) monitoring, and training of personnel throughout Project decommissioning to determine the presence or absence of FYLFs and CRLFs and ensure that any FYLFs and CRLFs that may be harmed as a result of Project decommissioning are relocated to a safe location.

6.3 Rationale for Condition 3 – Western Pond Turtles

Western pond turtles are identified as a species of special concern by CDFW and are currently under review to become listed as federally threatened or endangered by USFWS. Reconnaissance-level surveys by PG&E in 2003 found one western pond

turtle in Hooten Gulch and identified suitable turtle habitat in the areas of the Kilarc Development and Cow Creek Development (PG&E 2009a). Four CNDDB occurrences have been noted within five miles of the Kilarc Development and Cow Creek Development (PG&E 2009a). Condition 3 of this certification requires PG&E to conduct pre-construction surveys, biweekly monitoring, and training of personnel throughout Project decommissioning to determine the presence or absence of western pond turtles and ensure that any western pond turtles that may be harmed as a result of Project decommissioning are relocated to a safe location.

6.4 Rationale for Condition 4 – Kilarc Development Fish Management

Decommissioning the Kilarc Development could have potentially lethal impacts to resident fish in the Kilarc Main Canal and Kilarc Forebay. The intake at the Kilarc Main Diversion Dam is unscreened; thus, fish can enter the Kilarc Main Canal and Kilarc Forebay from Old Cow Creek. Small numbers of rainbow and brown trout were caught in the Kilarc Main Canal and larger numbers were caught in Kilarc Forebay during the 2003 fish population surveys (PG&E 2007). To minimize the number of fish needing to be rescued prior to decommissioning the Kilarc Development and to prevent fish stranding, Condition 4 of this certification requires PG&E to prepare a Kilarc Development Fish Management Plan in consultation with CDFW and conduct fish management and rescue in accordance with the plan.

6.5 Rationale for Condition 5 – Cow Creek Development Fish Rescue

South Cow Creek Main Canal is screened at the diversion dam to prevent fish from entering the canal. However, the screens do not meet current standards for anadromous salmonids. Sampling in South Cow Creek Main Canal during a 2003 fish population study found California roach, rainbow trout, and lamprey in relatively small numbers[12] (PG&E 2007). Cow Creek Forebay primarily supports two introduced species, golden shiner and green sunfish; although two Sacramento sucker and two rainbow trout were also captured during the 2003 fish population study. No information is available on fish presence in Mill Creek-South Cow Creek Canal. Given the scarcity of documented native fish in the Cow Creek canals and forebay, the decision of whether fish rescue is required will be determined in consultation. Accordingly, Condition 5 of this certification requires PG&E to consult with CDFW, USFWS, and NMFS with regard to the need for fish rescue in Mill Creek-South Cow Creek Canal, South Cow Creek Main Canal, and Cow Creek Forebay and to conduct such rescues if necessary.

[12] July sampling found eight California roach, two rainbow trout, and four lamprey; September sampling found 12 California roach, five rainbow trout, and no lamprey.

6.6 Rationale for Condition 6 – Instream Work Period Requirement

South Cow Creek contains spawning populations of Central Valley fall-run Chinook salmon (fall-run Chinook) and Central Valley steelhead trout (FERC 2011). Fall-run Chinook peak spawning occurs in October and November (Moyle 2002). Central Valley steelhead trout found in the Project area are a winter-run species, typically spawning from January through March with peak numbers returning to natal streams in January and February (Moyle 2002). Central Valley steelhead trout spawn in South Cow Creek anytime from January through April (FERC 2011). Resident rainbow and brown trout are present year-round but are not listed species.

Fall-run Chinook are identified by NMFS as a species of concern, and Central Valley steelhead trout are listed as threatened under the federal ESA. Instream construction activities at South Cow Creek Diversion Dam during sensitive (e.g., migration, spawning, etc.) periods for salmonids may result in potentially significant effects to fish populations. Fish could be affected by shockwaves associated with breaking down the dam structure, rubble and equipment crushing aquatic resources, and increased sediment associated with dam removal.

Critical life stages for fall-run Chinook or Central Valley steelhead trout do not occur during July through September. Once fry emerge and begin feeding, they will head toward warmer water, away from the immediate impacts of Project decommissioning. Condition 6 of this certification limits the work period in South Cow Creek to protect the critical life stages of listed anadromous salmonids.

6.7 Rationale for Condition 7 – Cow Creek Powerhouse Operations

Following cessation of Cow Creek Powerhouse operation, the augmented artificial flows to Hooten Gulch will cease, returning Hooten Gulch to its natural ephemeral flow conditions. If Cow Creek Powerhouse operation ceases during the summer or fall months (i.e., during naturally low or no flow conditions), fish could be stranded or trapped in isolated pools. Table 9 in FERC's EIS estimates that, historically, average flows in South Cow Creek from March through May are high due to snowmelt and rain events. Hooten Gulch exhibits similar hydrological conditions to South Cow Creek. Condition 7 of this certification requires PG&E to schedule and implement the cessation of Cow Creek Powerhouse operation when sufficient natural flow is present upstream of the powerhouse to avoid stranding or trapping of fish species (FERC 2011).

6.8 Rationale for Condition 8 – Turbidity Monitoring

Implementation of Project decommissioning is expected to result in sediment discharges and associated increases in turbidity. Condition 8 requires implementation

of all reasonable best management practices (BMPs) to minimize increases in turbidity associated with Project decommissioning activities and ensure compliance with the Basin Plan turbidity water quality objectives. Condition 8 also requires turbidity monitoring and reporting for all in-water work to determine compliance with Basin Plan objectives.

It is possible that some Project decommissioning activities may result in temporary exceedances of Basin Plan turbidity water quality objectives despite implementation of all reasonable BMPs. The Basin Plan includes exceptions to turbidity limits that allow for a zone of dilution within which turbidity in excess of the limits may be tolerated. Recognizing long-term water quality improvements are expected to result from Project decommissioning activities, Condition 8 allows PG&E to request Deputy Director approval to use a dilution zone consistent with Basin Plan provisions.

6.9 Rationale for Condition 9 – Dewatering and Diversion

Instream construction activities associated with Project decommissioning have the potential to negatively impact water quality. Measures must be implemented to isolate construction activities so that turbidity and sedimentation associated with Project decommissioning are avoided whenever possible and minimized when discharges cannot be avoided. Additionally, fish may be stranded in Project diversion structures if the structures are not decommissioned to minimize or avoid standing fish. Condition 9 of this certification requires PG&E to develop and implement dewatering and diversion activities associated with Project decommissioning in a manner that will ensure compliance with Basin Plan water quality objectives for turbidity (Condition 8) and bypass flows to support downstream beneficial uses and protect aquatic species. PG&E is required to outline dewatering and diversion activities in applicable Project decommissioning plans (Conditions 13 and 14).

6.10 Rationale for Condition 10 – Hooten Gulch Concrete Channel Removal and Stabilization

A short section of the Hooten Gulch channel just upstream of the Cow Creek Powerhouse is concrete-lined (e.g., gunite or shotcrete) to protect it from erosion and scour. Removal of the concrete will benefit native fish, amphibian, and plant species and help restore the area to a more natural ephemeral stream system. Several native fish and amphibian species, including California roach, riffle sculpin, rainbow trout, western pond turtle, and FYLF, have been documented in Hooten Gulch (PG&E 2007; PG&E 2009a) and would benefit from additional natural habitat. Furthermore, following implementation of Project decommissioning, Hooten Gulch will return to a system sustained by a natural hydrology and native plant species that are better adapted to the

pre-Project conditions (FERC 2011). Condition 10 of this certification requires PG&E to develop and implement a Hooten Gulch Concrete Channel Removal and Stabilization Plan that includes streambank stabilization measures.

6.11 Rationale for Condition 11 – Hazardous Materials and Waste Management

The Project was constructed from 1904-1907. Given the Project has been in place for more than a century, there is potential that the turbine pits, switchyards, and other powerhouse areas have released petroleum hydrocarbons and other hazardous chemicals that that could impact human health and water quality. Additionally, Project structures and surrounding areas likely contain hazardous materials and wastes associated with the Project (e.g., batteries, asbestos tiles or building materials, gasoline or diesel, etc.). Condition 11 requires removal of all hazardous materials and waste, testing for contamination during decommissioning activities, and appropriate remedial actions in the event contamination is discovered.

6.12 Rationale for Condition 12 – Roads

Existing access roads are located in and outside the FERC Project boundary and cross PG&E and private lands. Minor road improvements are necessary in the Kilarc Development and the Cow Creek Development so construction equipment can access sites associated with Project decommissioning. Additionally, new, temporary roads are necessary for Project decommissioning (e.g., removal of Kilarc Main Canal elevated flume structures). The use, construction, improvement, and decommissioning of Project roads have the potential to impact water quality and beneficial uses through soil disturbance, erosion, and runoff events. Condition 12 requires development and implementation of a Roads Plan to minimize potential water quality impacts caused by new and existing roads, and the decommissioning of roads.

6.13 Rationale for Condition 13 – Canal and Forebay Decommissioning

As part of the Proposed Decommissioning Plan, PG&E proposes to decommission the following canals and forebays: North Canyon Creek Canal, South Canyon Creek Canal, Kilarc Main Canal, Mill Creek-South Cow Creek Canal, South Cow Creek Main Canal, Kilarc Forebay, and Cow Creek Forebay (PG&E 2009b). Construction activities related to the removal of Project canals, Kilarc Forebay, and Cow Creek Forebay have the potential to impact water quality. Condition 13 requires PG&E to develop and implement a plan that identifies erosion control and water quality protection measures that will be implemented as part of canals and forebays decommissioning work.

6.14 Rationale for Condition 14 – Dam and Diversion Structure Decommissioning

As part of the Proposed Decommissioning Plan, PG&E proposes to decommission the following dams and diversion structures: North Canyon Creek Diversion Dam, South Canyon Creek Diversion Dam, Kilarc Main Diversion Dam, Mill Creek Diversion Dam, and South Cow Creek Diversion Dam (PG&E 2009b). Construction activities related to the removal of Project dams and diversion structures have the potential to impact water quality and beneficial uses. Condition 14 requires PG&E to develop and implement a plan that identifies erosion control and water quality protection measures that will be implemented as part of the dam and diversion structure decommissioning work.

6.15 Rationale for Condition 15 – Stored Sediment Management

Sediment from upper reaches of Old Cow Creek and South Cow Creek watersheds accumulates to varying degrees behind Kilarc Main Diversion Dam and South Cow Creek Diversion Dam. This sediment will be mobilized after Project decommissioning activities are completed and may impact upstream and downstream movement of resident and migrating fish. According to a 2008 geomorphic assessment by North State Resources, Inc., only a small percentage of stored sediment above both developments is fine sediment (i.e., 10 percent and 20 percent of total dry weight in South Cow Creek and Old Cow Creek, respectively). North State Resources, Inc. concluded it would be acceptable to allow the streams to naturally scour, transport, and redistribute the sediment after the diversion dams are removed without significantly impacting downstream water quality (NSR 2008a). In fact, some short- and long-term benefits associated with releasing native material stored behind the dams are anticipated given the gravels can help maintain existing spawning areas and potentially create new spawning habitat (FERC 2011). PG&E proposes to mechanically shape the upstream sediment wedge to facilitate stream channel recovery. This will help address the unpredictability of how natural fluvial processes will make use of the stored sediments to establish a new dynamic equilibrium, and the possibility of fish passage barriers and unstable slopes. Condition 15 of this certification requires PG&E to manage stored sediment following dam removal to facilitate unrestricted fish movement.

6.16 Rationale for Condition 16 – Fish Passage Monitoring

Natural fluvial processes will mobilize and redistribute stored sediment to downstream areas after removal of Kilarc Main Diversion Dam and South Cow Creek Diversion Dam. Condition 16 requires PG&E to develop and implement monitoring to ensure the long-term success of measures implemented per Condition 15 (Stored Sediment Management). PG&E is required to survey fish passage conditions at the diversion

dam sites and provide information in annual reports that will be used to help assess the capability of the post-construction stream channel to provide volitional fish passage. The information will also be used to identify, evaluate, and implement existing and new measures to provide fish passage, as necessary.

6.17 Rationale for Condition 17 – Post-Decommissioning Monitoring

Conditions 10, 12, 13, 14, and 15 of this certification require PG&E to describe major facility decommissioning activities and measures that will be implemented to protect water quality and beneficial uses. Condition 17 requires PG&E to develop and implement a post-decommissioning inspection procedure to monitor the success of the measures implemented to protect water quality and beneficial uses.

6.18 Rationale for Condition 18 – Riparian Vegetation and Wetlands Protection and Restoration

Project decommissioning is expected to have temporary adverse effects on riparian vegetation and wetlands that could negatively affect water quality and aquatic habitat. Condition 18 requires PG&E to develop and implement a plan to address temporary and permanent effects to riparian vegetation and wetlands. The plan will have monitoring with performance criteria to ensure riparian vegetation and wetlands are successfully re-established.

6.19 Rationale for Condition 19 – Abbott Ditch Wetlands and Aquatic Habitat

The Abbot Ditch diversion is not part of the Project and belongs to private landowners. The lands irrigated by Abbott Ditch have not had a wetland delineation. An informal assessment included in the Final EIR identified emergent wetlands and riparian wetlands, much of which may be subject to the jurisdiction of the federal Clean Water Act or the Porter-Cologne Water Quality Control Act. In addition, aerial photos indicate leakage from Abbott Ditch supports vegetation that exhibits wetland characteristics.

Project decommissioning activities do not include a means of maintaining year-round water flow to Abbott Ditch, which are provided through releases from the Cow Creek Development into Hooten Gulch. Therefore, due to Project decommissioning, Abbott Ditch would cease to have a constant water supply. Riparian and wetland habitats in the Abbott Ditch area may undergo changes because of this reduction in water supply.

Absent an alternative supplemental water supply for Abbott Ditch, Project decommissioning will impact wetlands and riparian and aquatic habitat in the Abbott Ditch area. PG&E has proposed measures to preserve wetland and riparian habitat throughout the FERC Project boundary by minimizing the loss of riparian and aquatic

habitat, facilitating restoration of disturbed areas, and ensuring native soils within cleared and disturbed areas are not subject to erosion. However, PG&E has not proposed these measures for the Abbott Ditch area or other areas that are outside the FERC Project boundary. PG&E's proposed measures are intended to address ground disturbance during Project decommissioning activities and not address potential impacts associated with the cessation of flows from Project facilities to Abbott Ditch.

Condition 19 of this certification will ensure impacts to wetlands and riparian habitat along Abbott Ditch and impacts to species that are threatened, endangered, or of special concern are minimized. Condition 19 requires PG&E to delineate potential waters of the state and implement a plan to address Project decommissioning impacts on these resources. Condition 19 also requires that PG&E arrange for a qualified biologist to conduct a complete survey of species that are threatened, endangered, or of special concern in the areas surrounding Abbott Ditch and, in consultation with relevant fish and wildlife agencies, capture and relocate any species that are threatened, endangered, or of special concern in these areas that may be at risk from Project decommissioning activities (e.g. reduced water flowing into and through Abbott Ditch).

6.20 Rationale for Conditions 20 – Remaining Facilities

Implementation of Project decommissioning includes leaving some Project facilities in place. Condition 20 requires the development of a plan to ensure that any structure or portion of Project facilities not removed do not impact water quality and beneficial uses. Following approval from the Deputy Director, implementation of the plan would ensure that the remaining facilities do not contribute to water quality impairments.

6.21 Rationale for Conditions 21-47 – General Conditions

In order to ensure that Project decommissioning meets water quality standards as anticipated, to ensure compliance with other relevant state and federal laws, and to ensure that the decommissioned Project will continue to meet state water quality standards and other appropriate requirements of state law following implementation of all decommissioning activities, this certification imposes conditions regarding monitoring, enforcement, and potential future revisions. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all water quality certifications, which are included in this certification.

7.0 Conclusion

The State Water Board finds that, with the conditions and limitations imposed under this certification, the decommissioning of the Project will be protective of state water quality standards and other appropriate requirements of state law.

WATER QUALITY CERTIFICATION CONDITIONS

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT THE KILARC-COW CREEK HYDROELECTRIC PROJECT LICENSE SURRENDER will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if Pacific Gas and Electric Company (Licensee) complies with the following terms and conditions.

CONDITION 1. Minimum Instream Flows

The Licensee shall continue to release minimum instream flows (MIFs) in accordance with the requirements of the Federal Energy Regulatory Commission's (FERC) license for the Kilarc-Cow Creek Hydroelectric Project (Project), FERC Project No. 606, as amended August 18, 1982 (FERC 1982), until Project-related diversions cease, as outlined in decommissioning plans developed under Conditions 13 and 14 and approved by the Deputy Director for Water Rights (Deputy Director). The Licensee shall continue to operate and maintain its gaging stations CB-132 and CB-133 until Project decommissioning activities are complete unless otherwise approved by the Deputy Director in writing.

1(A) Old Cow Creek

Below Kilarc Main Diversion Dam, the Licensee shall release 2 cubic feet per second (cfs) or the inflow to the diversion dam, whichever is less, into Old Cow Creek. The flow shall be measured at the Licensee's gaging station CB-132.

1(B) South Cow Creek

Except in a Dry year, below South Cow Creek Diversion Dam, the Licensee shall release 4 cfs or the inflow to the diversion dam, whichever is less. In a Dry year, the Licensee shall release 2 cfs or the inflow to South Cow Creek Diversion Dam, whichever is less, into South Cow Creek. The flow shall be measured at the Licensee's gaging station CB-133.

1(C) Dry Water Year Determination

A Dry year is defined as a 12-month period beginning May 1 in which the natural unimpaired runoff of the Sacramento River above Bend Bridge, near Red Bluff, is predicted to be 70 percent or less of the average. The natural unimpaired runoff is

determined by the California Department of Water Resources' (DWR) Bulletin 120[13] for the April 1 to July 31 period, as forecast on April 1 and adjusted on May 1.

1(D) Temporary Minimum Instream Flow Modifications

The MIFs may be temporarily modified if required by equipment malfunction reasonably beyond the control of the Licensee, as directed by law enforcement authorities, or in emergencies. For the purposes of this condition, an "emergency" is defined as an unforeseen event that is reasonably out of the control of the Licensee and requires the Licensee to take immediate action, either unilaterally or under instruction by law enforcement or other regulatory agency staff, to prevent imminent loss of human life or substantial property damage. An emergency may include but is not limited to: natural events such as landslides, storms, or wildfires; malfunction or failure of Project works; and recreation accidents. Extremely dry conditions, including a drought for which the Governor of the State of California declares a drought emergency for Shasta County, shall not be considered an emergency for purposes of this condition.

The Licensee shall notify the Deputy Director within 24 hours of the beginning of any unplanned temporary MIF modification. Within 96 hours of the beginning of any unplanned temporary MIF modification, the Licensee shall provide the Deputy Director with an update of the conditions associated with the modification and an estimated timeline for returning to the required MIFs.

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

[13] Bulletin 120 is a publication issued four times a year, in the second week of February, March, April, and May by DWR. It contains forecasts of the volume of seasonal runoff from California's major watersheds, and summaries of precipitation, snowpack, reservoir storage, and runoff in various regions of California.

CONDITION 2. Foothill Yellow-Legged Frogs and California Red-Legged Frogs

The Licensee shall conduct pre-construction[14] surveys and at least biweekly[15] monitoring during construction for foothill yellow-legged frogs (FYLFs) and California red-legged frogs (CRLFs), including both species' eggs and tadpoles. The surveys shall be conducted by a qualified biologist[16] no more than two days prior to the start of construction activities in a given area. The surveys and monitoring shall be conducted inside the construction boundary, which includes the area within and 100 feet (ft) outside the defined bed and bank of the stream channel, or within and 100 ft outside the edges of canals and forebays where construction activities are planned. Construction personnel shall be trained by a qualified biologist on identification of FYLFs and CRLFs.

If individual FYLFs or CRLFs are detected during the pre-construction surveys or biweekly monitoring, whether live, trapped, or injured, the qualified biologist shall relocate them to a suitable location outside of the construction boundary in consultation with the appropriate state and/or federal agency as listed in Table 1 (i.e., United States Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW)). If construction personnel identify FYLF or CRLFs (dead or alive) during Project decommissioning activities, activities in the construction boundary shall cease immediately and the Licensee shall notify and consult with USFWS and/or CDFW. Associated activities shall not resume without approval from the applicable agency or agencies (Table 1). The Licensee shall keep a record of all surveys, monitoring, training, consultations, and relocation efforts. Any relocation efforts shall include documentation of the species, date, action taken, and location where the frog was found and relocated. The records shall be provided to the State Water Board within 60 days of completing Project activities in a given area or as otherwise requested by State Water Board staff.

[14] For the purposes of this water quality certification, construction refers to construction and decommissioning activities.

[15] Biweekly monitoring shall occur at least once every 14 days.

[16] For purposes of this certification, a qualified biologist is an individual who possesses, at a minimum, a bachelor's or advanced degree, from an accredited university, with a major in biology, zoology, wildlife biology, natural resources science, or a closely related scientific discipline, at least two years of field experience in the biology and natural history of local plant, fish, and wildlife resources, and knowledge of state and federal laws regarding the protection of sensitive and endangered species.

Table 1. Agency Consultation Guidelines for Foothill Yellow-legged Frog and California Red-legged Frog

Species	Listing	Agency to be Consulted
Foothill yellow-legged frog	Candidate Species*	CDFW
California red-legged frog	Species of Special Concern and Federally Threatened**	CDFW and USFWS

* According to the California Endangered Species Act.

** According to the federal Endangered Species Act.

CONDITION 3. Western Pond Turtles

The Licensee shall conduct pre-construction surveys and at least biweekly monitoring during construction activities for western pond turtles. The surveys shall be conducted by a qualified biologist[17] no more than two days prior to the start of construction activities in a given area. The surveys and monitoring shall be conducted inside the construction boundary, which includes the area within and 100 ft outside the defined bed and bank of the stream channel, and within and 100 ft outside the edges of canals and forebays where construction activities are planned. Construction personnel shall be trained by a qualified biologist on identification of western pond turtles.

If western pond turtles are detected during the preconstruction survey or biweekly monitoring, whether live, trapped, or injured, the qualified biologist shall relocate the turtles to a suitable location outside the construction boundary in consultation with CDFW and potentially with USFWS (see Table 2). If a western pond turtle nest is found, the qualified biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the Licensee shall consult with the appropriate agency or agencies to determine whether the nest should be relocated by a qualified biologist. Associated activities shall not resume without approval from the applicable agency or agencies (Table 2). If construction personnel identify a western pond turtle (dead or alive) or nest during Project decommissioning activities, activities in the construction boundary shall cease immediately and the Licensee shall notify CDFW and potentially USFWS (Table 2). Activities associated with the nest shall not occur without approval from the applicable agency or agencies (Table 2). The Licensee shall keep a record of all surveys, monitoring, trainings, consultations, and relocation efforts. Any relocation efforts shall include documentation of the date, action taken, and location where the western pond turtle was found and

[17] See footnote 16.

relocated. The records shall be provided to the State Water Board within 60 days of completion of survey, training, or relocation in each area or as otherwise requested by State Water Board staff.

Table 2. Agency Consultation Guidelines for Western Pond Turtle

Species	Listing	Agency to be Consulted
Western Pond Turtle	Species of Special Concern	CDFW
Western Pond Turtle	Under Federal Review*	USFWS

* The listing of western pond turtles under the federal Endangered Species Act is currently under review by USFWS. If western pond turtles become listed as federally threatened or endangered, the Licensee shall also consult with USFWS regarding western pond turtles. If western pond turtles remain under federal review for the duration of Project decommissioning activities, the Licensee need not consult with USFWS.

CONDITION 4. Kilarc Development Fish Management

The Licensee shall consult with CDFW about the need for a Kilarc Development Fish Management Plan (Kilarc Fish Plan). The Licensee shall submit documentation of consultation with CDFW to the Deputy Director, including copies of any comments and recommendations made in connection with the need for fish rescues in the Kilarc Development.

If CDFW recommends fish rescue, the Licensee shall submit a Kilarc Fish Plan to the Deputy Director for review and approval. The Kilarc Fish Plan shall describe how the Licensee will manage Kilarc Forebay and Kilarc Main Canal in advance of and during decommissioning activities. The Kilarc Fish Plan shall also cover the North Canyon Creek and South Canyon Creek diversions and canals[18], if applicable. The Licensee shall prepare the Kilarc Fish Plan in consultation with CDFW. At a minimum, the Kilarc Fish Plan shall include:

a) A description of the measures the Licensee will implement to reduce the number of fish in Kilarc Forebay and Kilarc Main Canal (as well as the North Canyon Creek and South Canyon Creek diversions and canals, if appropriate) prior to

[18] North Canyon Creek and South Canyon Creek diversions have been out of service for several years and are not used to divert water through North Canyon Creek Canal and South Canyon Creek Canal. Therefore, the canals are currently dry and do not support fish.

decommissioning, with the intent of minimizing the number of fish that need to be rescued (e.g., the elimination or reduction of stocked fish, increased catch limits, etc.);

b) Protocol that will be used to perform fish rescues, including the location(s) where fish will be relocated and qualifications for those performing fish rescues;

c) A schedule for implementation of the Kilarc Fish Plan;

d) Monitoring and reporting that will be performed. The reporting shall include all fish rescued or found injured or dead. For rescued fish, reporting shall include the species, date and location of capture and relocation, method of capture, relocation area, and total number of rescued fish. For fish found injured or dead, reporting shall include species, date and time, action taken, total numbers, and disposal location, if applicable. Any dead fish shall be disposed of properly. Reports shall be provided to CDFW and the State Water Board within 60 days of completing fish management and rescue activities; and

e) A summary of consultation, copies of comments and recommendations made in connection with the Kilarc Fish Plan, and a description of how the Kilarc Fish Plan incorporates or addresses the comments and recommendations of CDFW.

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Kilarc Fish Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Deputy Director-approved Kilarc Fish Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 5. Cow Creek Development Fish Rescue

The Licensee shall maintain and operate the fish screen in South Cow Creek Main Canal until completion of any fish rescues and diversions into the canal have ceased.

The Licensee shall consult with CDFW, USFWS, and National Marine Fisheries Service (NMFS) about the need for fish rescues in Mill Creek-South Cow Creek Canal, South Cow Creek Main Canal, and Cow Creek Forebay. The Licensee shall submit documentation of consultation with CDFW, USFWS, and NMFS to the Deputy Director, including copies of any comments and recommendations made in connection with the need for fish rescues in the Cow Creek Development.

If CDFW, USFWS, or NMFS recommends fish rescue, the Licensee shall prepare a Cow Creek Fish Rescue Plan in consultation with the agencies directing fish rescue and

submit the plan for Deputy Director review and approval. At a minimum, the Cow Creek Fish Rescue Plan shall include:

a) A description of the measures the Licensee will implement to reduce the number of fish in Mill Creek-South Cow Creek Canal, South Cow Creek Main Canal, and Cow Creek Forebay prior to decommissioning, with the intent of minimizing the number of fish that need to be rescued;

b) Protocol that will be used to perform fish rescues, including the location(s) where fish will be relocated and qualifications for those performing fish rescues;

c) A schedule for implementation of the Cow Creek Fish Rescue Plan;

d) Monitoring and reporting that will be performed. The reporting shall include all fish rescued or found injured or dead. For rescued fish, reporting shall include the species, date and location of capture and relocation, method of capture, relocation area, and total number of rescued fish. For fish found injured or dead, reporting shall include species, date and time, action taken, total numbers, and disposal location, if applicable. Any dead fish shall be disposed of properly. Reports shall be provided to the fish agencies consulted during development of the plan and the State Water Board within 60 days of completing fish management and rescue activities; and

e) A summary of consultation, copies of comments and recommendations made in connection with the Cow Creek Fish Rescue Plan, and a description of how the Cow Creek Fish Rescue Plan incorporates or addresses the comments and recommendations.

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Cow Creek Fish Rescue Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Deputy Director-approved Cow Creek Fish Rescue Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 6. Instream Work Period Requirement

The Licensee shall only conduct instream work in South Cow Creek between July 1 and September 30 to avoid impacts to spawning and migrating anadromous salmonids. If the Licensee needs to conduct instream work in South Cow Creek outside this period, it may submit a request to the Deputy Director for review and approval. At a minimum, the request shall include: the proposed timeframe and need for instream work;

documentation of consultation with the relevant fish agencies; any comments and recommendations from the fish agencies; measures that will be implemented to protect listed fish species; and any proposed monitoring and reporting. The Deputy Director may require modifications as part of any approval. If the Licensee receives Deputy Director approval for instream work outside of the July 1 – September 30 timeframe, it shall provide notice of this change to CDFW, USFWS, and NMFS and file the approval with FERC. Additionally, as noted in Condition 35, this water quality certification does not authorize any act which results in the taking of a threatened, endangered, or candidate species under the federal Endangered Species Act (ESA) or California ESA.

CONDITION 7. Cow Creek Powerhouse Operations

Unless otherwise approved in writing by the Deputy Director, the Licensee shall discontinue Cow Creek Powerhouse operations between March 1 and May 31, and after determining there is sufficient natural flow present upstream of the Cow Creek Powerhouse to avoid stranding or trapping of fish. The Licensee shall notify the Deputy Director, CDFW, NMFS, and USFWS, in writing, at least 10 days prior to discontinuing Cow Creek Powerhouse operations and ceasing flows to Hooten Gulch so that staff may be present. The Licensee shall notify CDFW, NMFS, and USFWS immediately if fish are trapped or stranded as a result of discontinuing Cow Creek Powerhouse operations and document the number and locations of any trapped or stranded fish. The Licensee shall implement any actions identified by CDFW, NMFS, and USFWS to address trapped or stranded fish.

Within 30 days of discontinuing Cow Creek Powerhouse operations, the Licensee shall provide a summary of the event, including at a minimum: the date on which operations ceased; species, number, and actions taken if any fish were trapped or stranded; and other relevant information. The Licensee shall provide any additional information requested by State Water Board staff.

CONDITION 8. Turbidity Monitoring

The Licensee shall implement all reasonable best management practices (BMPs) to reduce turbidity discharges associated with Project decommissioning activities. Unless approved by the Deputy Director, in writing, per section (e) below, Project decommissioning shall not cause increased turbidity greater than allowable levels identified in the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Basin Plan) (Central Valley Regional Water Board 2018) (shown in Table 3):

Table 3. Basin Plan Water Quality Objectives for Turbidity

Background Level or Natural Turbidity	Downstream Turbidity (after starting construction)
Less than 1 NTU*	Total turbidity shall not exceed 2 NTU
Between 1 and 5 NTU	Increases shall not exceed 1 NTU
Between 5 and 50 NTU	Increases shall not exceed 20 percent
Between 50 and 100 NTU	Increases shall not exceed 10 NTU
Greater than 100 NTU	Increases shall not exceed 10 percent

*NTU = Nephelometric Turbidity Units

a) Monitoring Locations and Frequency: The Licensee shall establish two turbidity monitoring locations for all in-water work locations: (1) a location approximately 50 ft upstream of the influence of Project decommissioning to establish natural turbidity levels flowing into the construction area (background level); and (2) a location within 300 ft downstream of the construction area to calculate potential increases in turbidity due to Project decommissioning activities (compliance location). A global positioning system (GPS) point and a photograph of each location shall be taken at the time of initial sampling. Each in-water monitoring location shall be marked (e.g., with a pin flag) and used throughout the monitoring period for that in-water work location. At a minimum, turbidity shall be measured at hourly intervals at each turbidity-monitoring location while in-water work is being conducted.

b) Monitoring Equipment: Turbidity shall be measured using nephelometry. A hand-held field meter (nephelometer) may be used to measure turbidity, provided the meter uses a United States Environmental Protection Agency-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. For each nephelometer used, a calibration and maintenance log shall be maintained onsite and provided to State Water Board staff upon request.

c) Turbidity Exceedance: If the average turbidity measured over a 24-hour period (from 6:00 A.M. of the current day to 5:59 A.M. of the following day) exceeds the water quality objectives outlined in the Basin Plan (Table 3) (i.e., a turbidity exceedance), the associated Project decommissioning activities shall cease immediately. In addition, the Licensee shall implement any and all actions immediately to reduce and maintain turbidity at or below the water quality objective.

The Deputy Director and the Central Valley Regional Water Quality Control Board Executive Officer (Executive Officer) shall be notified promptly and in no case more than 24 hours after a turbidity exceedance. Activities associated with a turbidity exceedance may not resume without written approval from the Deputy Director.

d) Reporting: The Licensee shall provide any documentation requested by State Water Board staff related to implementation of this condition. Turbidity monitoring results shall be recorded by the Licensee and provided to the State Water Board within 60 days of completing turbidity monitoring at each in-water work location.

e) Planned Unavoidable Turbidity Exceptions: If turbidity exceedances are expected to result from sediment disturbance related to Project decommissioning activities (e.g., removal of South Cow Creek Diversion Dam, Kilarc Main Diversion Dam, etc.) despite implementation of all reasonable BMPs, the Licensee shall consult with State Water Board and Central Valley Regional Quality Control Board (Central Valley Regional Water Board) staff to determine an allowable zone of dilution within which turbidity in excess of the limits may be allowed. Activities associated with an exception of turbidity limits may not occur without prior written approval from the Deputy Director.

CONDITION 9. Dewatering and Diversion

The Licensee shall implement dewatering and diversion activities associated with Project decommissioning in a manner that protects water quality, beneficial uses, and aquatic species. Unless otherwise approved by the Deputy Director, instream water shall be routed around the isolated construction area by pipe or by isolating portions of the stream and allowing passive flow around the construction area. Upon completion of construction activities, any coffer dam or other structure used to dewater or divert water shall be removed in a manner that allows flow to resume with the least disturbance to the substrate, water quality, and beneficial uses. For plans associated with Project decommissioning activities (Conditions 13 and 14) that involve dewatering or diversion of water, the Licensee shall include the following:

a) An overview of all in-water work that will require dewatering or diversion of water;

b) Time frames for required dewatering or diversion work;

c) Description of coffer dams or equivalent barriers that will be used to isolate the construction area from instream flows;

d) Description of measures, if needed, that will be implemented to avoid potential fish stranding and entrainment;

e) Provisions to maintain downstream flow equal to upstream flow. If temporary modification of MIFs are required, the Licensee shall provide a written description of the modification, reason(s) for its necessity, measures that will be implemented to protect water quality and beneficial uses, and the proposed timeline for modification and return to the required MIFs;

f) Any proposed monitoring and reporting related to the dewatering or diversion of water; and

g) Description of how, upon completion of construction activities, flow will resume with the least disturbance to the substrate, water quality, and beneficial uses.

CONDITION 10. Hooten Gulch Concrete Channel Removal and Stabilization

No later than one year following FERC issuance of the license surrender order, the Licensee shall submit a Hooten Gulch Concrete Channel Removal and Stabilization Plan (Hooten Gulch Plan) to the Deputy Director for review and approval. The Hooten Gulch Plan shall include removal of all concrete within Hooten Gulch to promote a more natural channel. Long-term bank stabilization and restoration activities for areas where concrete is removed are covered as part of Condition 18.

At a minimum, the Hooten Gulch Plan shall include:

a) An overview, description, and map of the concrete in Hooten Gulch related to the Project, including portions of the Cow Creek Powerhouse tailrace with the potential to impact water quality;

b) Details of concrete removal and stabilization work to be implemented;

c) Proposed measures that will be implemented to protect water quality and beneficial uses during concrete removal, disposal, and stabilization activities;

d) Schedule for concrete removal and stabilization. Concrete removal shall be conducted in the summer and when Hooten Gulch is dry.

The Deputy Director may make modifications as part of any approval. The Licensee shall file the Deputy Director-approved Hooten Gulch Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Hooten Gulch Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 11. Hazardous Materials and Waste Management

No later than one year following FERC issuance of the license surrender order, the Licensee shall submit a Hazardous Materials and Waste Management Plan to the Deputy Director for review and approval. The Hazardous Materials and Waste Management Plan shall be developed in consultation with State Water Board and Central Valley Regional Water Board staff. The Hazardous Materials and Waste Management Plan shall include details of the storage, handling, and disposal of hazardous materials and waste throughout decommissioning activities in a manner that is protective of water quality and beneficial uses. At a minimum, the Hazardous Materials and Waste Management Plan shall include:

a) An inventory of hazardous materials and waste (e.g., chemicals, fuel, herbicides, pesticides, batteries, polychlorinated biphenyls, asbestos tiles or building materials, etc.) located in the FERC Project boundary and the plan for final disposition of the hazardous materials and waste;

b) Plan for identification and cleanup of contaminated soil associated with Project operations, which includes: (1) identification of Project areas where soil contamination is most likely to exist (e.g., based on visual observations, review of historic operations, etc.); (2) proposed soil sampling plan that includes proposed soil sampling locations, depth, and analytical methods; (3) plan for removal, remediation, and/or disposal of contaminated soil in the event contamination is detected; and (4) reporting regarding sampling and remediation work;

c) A list with contact information of federal, state, and local officials the Licensee will contact in the event of a hazardous material spill. The list and contact information shall be maintained and updated by the Licensee. In the event of a hazardous material spill, at a minimum, the Licensee shall immediately notify the California Emergency Management Agency, CDFW, Central Valley Regional Water Board, and State Water Board staff of the magnitude, nature, time, date, location, action taken, and disposal location for the hazardous material;

d) Description of hazardous materials storage, spill prevention, and clean up measures, including the deployment and maintenance of spill cleanup materials and equipment at each facility/site that will be used to contain any spill from the Project and Project decommissioning activities. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320;

e) Testing, monitoring, and reporting that will be implemented if a spill occurs to ensure water quality is not affected; and

f) Documentation of consultation with Central Valley Regional Water Board staff, copies of comments and recommendations made in connection with the Hazardous Materials and Waste Management Plan, and a description of how the plan incorporates or addresses the comments and recommendations of Central Valley Regional Water Board staff.

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Hazardous Materials and Waste Management Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Hazardous Materials and Waste Management Plan as part of Project decommissioning activities.

CONDITION 12. Roads

No later than one year following FERC issuance of the final license surrender order, the Licensee shall submit a Roads Plan to the Deputy Director for review and approval. The Roads Plan shall be developed in consultation with the Central Valley Regional Water Board and State Water Board staff. The Roads Plan shall discuss the fate of all roads associated with the Project, including existing roads, new roads, and any roads to be decommissioned. The Roads Plan shall include details of the maintenance, construction, and decommissioning of roads associated with the Project in a manner that is protective of water quality and beneficial uses. At a minimum, the Roads Plan shall include:

a) An inventory and map of all existing and proposed roads associated with the Project and Project decommissioning, including locations of trails, drainage structures, streams, and other surface waterbodies. The inventory shall include identification of: (1) existing roads; (2) existing roads requiring improvements; (3) new roads to be constructed; and (4) roads to be decommissioned;

b) Identification of the individual or entity responsible for each road under the license surrender order, the ultimate fate (e.g., decommissioning, transfer, etc.) of each road, and the individual or entity responsible for each road following Project decommissioning. The Licensee shall provide documentation of consultation with private landowners regarding the final disposition of Project roads. Per landowner request, and identification of a responsible party for the ongoing maintenance of the road(s), the Licensee may leave existing Project roads in place.

c) A schedule and plan for all road work associated with ongoing Project operation in advance of decommissioning and as part of Project decommissioning. If roads will be decommissioned, the Licensee shall ensure re-grading to match up/down slope topography, scarifying and seed planting, removal of ditches and culverts, and implementation of site-specific BMPs. The Licensee shall maintain roads consistent with the most current United States Department of Agriculture (USDA), ***Forest Service National Best Management Practices for Water Quality Management on National Forest System Lands*** (USDA Forest Service 2012);

d) BMPs the Licensee will implement to address any potential water quality impacts associated with road work;

e) Reporting, including photo documentation, that will be performed as part of Roads Plan implementation; and

f) Documentation of consultation with Central Valley Regional Water Board staff, copies of comments and recommendations made in connection with the Roads Plan, and a description of how the plan incorporates or addresses the comments and recommendations of Central Valley Regional Water Board staff.

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Roads Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Road Plan upon receipt of Deputy Director and any other required approvals.

CONDITION 13. Canal and Forebay Decommissioning

The Licensee shall decommission the North Canyon Creek Canal, South Canyon Creek Canal, Kilarc Main Canal, Mill Creek-South Cow Creek Canal, South Cow Creek Canal, Kilarc Forebay, and Cow Creek Forebay. Decommissioning activities shall include structures associated with the canals and forebays, including tunnels, flumes, penstocks, pipes, gates, frames, support structures, catwalks, and guide walls. Decommissioning of canals, forebays, and associated structures shall be completed no later than five years following issuance of the FERC license surrender order unless the delay is due to factors outside of the Licensee's control and approved by the Deputy Director in writing.

No later than one year following issuance of the FERC license surrender order, the Licensee shall submit a Canal and Forebay Decommissioning Plan or canal/forebay-specific decommissioning plans (Canal/Forebay Plan(s)) to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any

approval. The Canal/Forebay Plan(s) shall be developed in consultation with State Water Board staff, CDFW, and private landowners, where appropriate. At a minimum, the Canal/Forebay Plan(s) shall include:

a) List and map of all the canals, forebays, and associated structures;

b) Description and photos of existing conditions;

c) Descriptions, plans, and drawings of proposed decommissioning methods and activities (e.g., fill or abandon in place with strategic breaching);

d) A schedule for planned decommissioning activities, including ceasing MIFs (Condition 1) and fish management and rescue conditions (Conditions 4 and 5);

e) Description of any dewatering or diversion activities, as outlined in Condition 9;

f) Description of site-specific measures that will be implemented to protect water quality and beneficial uses from potential impacts associated with implementation of the Canal/Forebay Plan(s) and measures to stabilize the canal/forebay sites after decommissioning activities are complete (e.g., natural drainage path protection, slope recontouring, revegetation, etc.); and

g) A monitoring and reporting program that describes how the Licensee will evaluate and report on the ongoing implementation of and success of canal/forebay decommissioning efforts, including measures implemented to protect water quality and beneficial uses. Final reporting of the decommissioning activities associated with each canal/forebay shall include photos documenting the post-decommissioning condition of the area, in comparison to existing conditions (see (b), above).

The Licensee shall file the Deputy Director-approved Canal/Forebay Plan(s), and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Canal/Forebay Plan(s) upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 14. Dam and Diversion Structure Decommissioning

The Licensee shall decommission North Canyon Creek Diversion Dam, South Canyon Creek Diversion Dam, Kilarc Main Diversion Dam, Mill Creek Diversion Dam, and South Cow Creek Diversion Dam. Decommissioning activities shall include appurtenant structures. Decommissioning of dams and diversion structures must be completed no later than five years following issuance of the FERC license surrender order unless the

delay is due to factors outside of the Licensee's control and approved by the Deputy Director in writing.

No later than one year following issuance of the FERC license surrender order, the Licensee shall submit a comprehensive Dam and Diversion Structure Decommissioning Plan or dam/diversion structure-specific decommissioning plans (Diversion Structure Decommissioning Plan(s)) to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any approval. The Diversion Structure Decommissioning Plan(s) shall be developed in consultation with State Water Board staff, CDFW, NFMS, and USFWS. At a minimum, the Diversion Structure Decommissioning Plan(s) shall include:

a) List and map of all diversion dams and associated structures;

b) Description and photos of existing conditions;

c) Descriptions, plans, and drawings of proposed facility decommissioning methods and activities (e.g., complete removal or leave in place abutments/foundations, concrete guide walls, gates/supporting structures, etc.);

d) Details of the existing water rights associated with each of the subject diversions, and a discussion of the Licensee's proposal for the disposition of these water rights once the subject diversion structures have been decommissioned. The request for revocation or transfer of existing water rights to instream use, as applicable, shall be submitted within six months of completion of the on-the-ground decommissioning work at each diversion dam/structure;

e) A schedule of planned decommissioning activities, including ceasing MIFs (Condition 1) and fish management and rescue conditions (Conditions 4 and 5);

f) Description of any dewatering or diversion activities, as outlined in Condition 9;

g) Description of site-specific measures that will be implemented to protect water quality and beneficial uses from potential impacts associated with implementation of the Diversion Structure Decommissioning Plan(s) and measures to stabilize the dam/diversion sties after decommissioning activities are complete (e.g., natural drainage path protection, slope recontouring, revegetation, etc.);

h) Management of sediment stored behind Kilarc Main Diversion Dam and South Cow Creek Diversion Dam (Condition 15), including measures that will be implemented to protect water quality and beneficial uses; and

i) A monitoring and reporting program that describes how the Licensee will evaluate and report on the ongoing implementation of and success of dam/diversion decommissioning efforts, including measures implemented to protect water quality and beneficial uses. Final reporting of the decommissioning activities associated with each dam/diversion shall include photos documenting the post-decommissioning condition of the area, in comparison to existing conditions (see (b), above).

The Licensee shall file the Deputy Director-approved Diversion Structure Decommissioning Plan(s), and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Diversion Structure Decommissioning Plan(s) upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 15. Stored Sediment Management

The Licensee shall manage the sediment stored behind Kilarc Main Diversion Dam and South Cow Creek Diversion Dam to ensure unrestricted fish movement once Project operations cease and the diversion dams have been removed. The final design of each channel shall be based on the best available information, as determined in consultation with NMFS and CDFW. At a minimum, the stored sediment upstream of each diversion dam shall be modified as follows:

a) Excavate a pilot thalweg channel that connects the existing upstream thalweg[19] to the thalweg immediately downstream of the dam to ensure temporary fish passage;

b) Stabilize the slopes of the thalweg and downstream face of the sediment wedge at an angle that would be naturally stable (i.e., does not require foreign materials or cements to retain slope) until the remaining stored sediment behind the diversion is redistributed downstream during sediment-mobilizing flows;

c) Incorporate native coarse bed-elements or other techniques into the bed of the new thalweg to allow appropriate depths and velocities for fish passage;

[19] At or above the scour control point specified in North State Resources, Inc.'s (NSR) 2008 geomorphic assessment of South Cow Creek Diversion Dam and Kilarc Main Diversion Dam sites.

d) Place all native rock and sediment material removed to establish the thalweg along the channel margins where it does not damage riparian vegetation[20];

e) Dispose of any non-native rock or cement material at a suitable site (e.g., as canal fill); and

f) Plant native vegetation to create riparian habitat and provide long-term bank stabilization (may be part of Condition 18).

Modifications to the sediment stored above South Cow Creek Diversion Dam and Kilarc Main Diversion Dam shall be implemented during the dam removal process and, to the extent possible, while that portion of the stream is isolated for dewatering or diversion of water (Condition 9). To the extent that such work is not performed under Condition 9 and has the potential to impact water quality and beneficial uses, the Licensee shall submit a plan for Deputy Director review and approval. The plan shall include:

a) Description of the work to be performed;

b) Measures that will be implemented to protect water quality and beneficial uses; and

c) Monitoring and reporting.

The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director approved plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 16. Fish Passage Monitoring

The Licensee shall monitor Kilarc Main Diversion Dam and South Cow Creek Diversion Dam sites for a minimum of two years after decommissioning activities, including completion of the stored sediment management activities (Condition 15) at each diversion dam. The purpose of the monitoring is to evaluate fish passage conditions and identify areas where additional corrective measures are necessary to provide fish

[20] This assumes that on-site inspection during dam removal reveals that the excavated sediments are comprised of mostly gravel to cobble size material, as indicated in NSR's 2008 geomorphic assessment. If this assumption is not met, then rock and sediment material removed during thalweg excavation shall be disposed of consistent with Condition 15 (e).

passage. By March 1 of each monitoring year, the Licensee shall submit a monitoring plan and schedule to the State Water Board, Division of Water Rights, Water Quality Certification Program Manager (Program Manager). The monitoring plan and schedule shall be developed in consultation with CDFW, NMFS, and State Water Board staff. At a minimum, the monitoring plan and schedule shall include:

a) Monitoring of fish passage conditions at a variety of flows at different times of the year from above the scour control point of each diversion dam (NSR 2008a; 2008b) to a point approximately 10 channel widths below each diversion dam;

b) Monitoring performed by a qualified biologist[21] with experience in assessing fish passage. The biologist shall survey the stream segments, obtain depth and velocity measurements at representative cross-sections, and visually assess with photographic documentation any fish passage challenges (e.g., shallow riffles or bars) arising from sediment movement;

c) Identification and implementation of corrective measures, as necessary. If, during the surveys, the biologist observes significant erosion, bank undercutting, or fish passage barriers, the Licensee shall implement corrective measures in consultation with CDFW for the Kilarc Development and in consultation with CDFW and NMFS for the Cow Creek Development; and

d) Reporting of monitoring results from the previous year (annual report from January-December) by no later than March 1 of the following monitoring year. The annual report may be submitted as part of the monitoring plan and schedule for the upcoming year. The annual report shall be submitted to FERC, NMFS, CDFW, and State Water Board staff. At a minimum, the annual report shall include: a brief description of sites surveyed; monitoring dates; monitoring methods; fish species present; photo documentation; monitoring data; description and assessment of existing measures and overall effectiveness; a summary of CDFW and NMFS consultation; any recommendations for corrective actions; and any corrective measures implemented.

Following the initial two years of monitoring, the Licensee shall submit the second annual report to the Deputy Director for review and approval with a recommendation and supporting justification, for each diversion dam site, to: (a) conclude monitoring; or (b) continue monitoring. The Licensee's recommendation shall be developed in consultation with CDFW and NMFS. The Licensee shall continue monitoring and

[21] See footnote 16.

implementation of corrective measures, as applicable, if directed to do so by the Deputy Director.

CONDITION 17. Post-Decommissioning Monitoring

The Licensee shall conduct post-decommissioning inspections and monitoring at each Project decommissioning site to ensure measures implemented to protect water quality and beneficial uses (Condition 10, Condition 12, Condition 13, Condition 14, and Condition 15) remain effective and to identify areas where maintenance of existing measures or installation of additional measures is necessary. Post-decommissioning monitoring shall be conducted following all Project decommissioning work. Monitoring shall be conducted for a minimum of two years in the stream channels and one year at all other decommissioning areas. By March 1 of each year of monitoring, the Licensee shall provide a report summarizing monitoring efforts to FERC, NMFS, CDFW, and State Water Board. The annual decommissioning monitoring report shall be submitted as a comprehensive report for all Project decommissioning activities. At a minimum, the annual decommissioning monitoring report shall include:

a) List and map of all monitoring sites;

b) Monitoring methods and results, including photo documentation and other monitoring data;

c) Description of existing measures implemented to protect water quality and beneficial uses;

d) Performance criteria used to assess the effectiveness of the measures;

e) Discussion and assessment of the current and future effectiveness of measures;

f) Recommendations for maintenance or additional measures, if necessary; and

g) If appropriate, a recommendation with supporting justification to conclude post-decommissioning monitoring.

As part of any recommendation to conclude monitoring, the Licensee shall request approval from the Deputy Director to discontinue portions of or all post-decommissioning monitoring. The Licensee shall continue monitoring until the Deputy Director approves conclusion of the post-decommissioning monitoring.

CONDITION 18. Riparian Vegetation and Wetlands Protection and Restoration

No later than one year following issuance of the FERC license surrender order and prior to any decommissioning activities, the Licensee shall submit a Riparian and Wetland Restoration Plan (Restoration Plan) to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any approval.

The Restoration Plan shall address impacts to riparian vegetation and wetlands associated with Project decommissioning activities, including concrete removal in Hooten Gulch.[22] The Restoration Plan shall be developed in consultation with the United States Army Corps of Engineers (USACE), CDFW, and State Water Board staff. The Licensee shall monitor riparian vegetation and wetlands restoration for a minimum of two years following completion of restoration efforts to ensure adequate survival. The Restoration Plan may be submitted as a comprehensive plan or as multiple area-specific restoration plans. At a minimum, the Restoration Plan(s) shall include the following:

a) Description of measures the Licensee will implement to identify (e.g., surveys) and protect (e.g., fencing) existing riparian vegetation and wetlands from disturbance, where feasible. The Licensee shall take all necessary measures in pre-decommissioning planning to minimize decommissioning impacts on riparian vegetation and wetlands. Prior to construction, the Licensee shall erect fencing along the outer edges of the work zones, where necessary, to prevent accidental entry into riparian vegetation and wetlands;

b) Description of proposed restoration site(s) and restoration activities (e.g., grading, planting, swales, wetland construction, etc.), including a map(s) identifying proposed locations for restoration activities. The description of proposed restoration activities shall include measures that will be implemented as part of restoration work to protect water quality and beneficial uses. The description of restoration activities shall include a schedule of when restoration activities will be performed;

c) Identification of plants that will be used for restoration. The Licensee shall exclusively use native plants, with preference for plants that promote soil stability;

d) Description of how the Licensee will evaluate and report on the presence of wetlands that could be affected by Project decommissioning-related activities (including potential disposal areas). The Licensee shall ensure no net loss of

[22] Protection of wetlands associated with Abbott Ditch are addressed in Condition 19.

wetland or riparian habitat functions and compliance with the ***State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*** (State Water Board 2019*)*;

e) Description of how the Licensee will monitor for and address invasive weeds in the restored area;

f) Proposed monitoring to document and evaluate the success of restoration work, including adaptive management measures that will be implemented over time to ensure successful restoration (e.g., measures to address loss of newly planted vegetation, soil instability, etc.). Monitoring shall occur frequently enough to determine whether plantings are successful and to facilitate implementation of adaptive measures (e.g., supplemental irrigation, re-seeding, changes in plant types) to ensure rapid vegetation establishment. Monitoring shall include pre- and post-restoration photo documentation;

g) Performance criteria that will be used to assess the success of restoration activities; and

h) Documentation of consultation with CDFW and USACE, copies of comments and recommendations made in connection with the Restoration Plan, and a description of how the Plan incorporates or addresses the comments and recommendations.

The Licensee shall file the Deputy Director-approved Restoration Plan(s), and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Restoration Plan(s) upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein. Within six months of concluding restoration activities in a Project decommissioning area, and annually thereafter until otherwise directed by the Deputy Director, the Licensee shall provide a report to the Deputy Director documenting implementation of the Restoration Plan(s), including highlights of any problems encountered and adaptive management measures deployed or proposed to address any problems. The Licensee shall provide additional reports or information related to implementation of the Restoration Plan(s) if requested by the Deputy Director.

CONDITION 19. Abbott Ditch Wetlands and Aquatic Habitat

Absent an alternative project that will continue to provide year-round flows in Abbott Ditch and prior to commencing activities that will cease or substantially reduce Cow Creek Development tailrace water discharges to Hooten Gulch, the Licensee shall complete the following:

(a) Delineation. The delineation shall be performed for areas that may be impacted by changes to the amount of water flowing in Abbott Ditch. The delineation shall address all features potentially defined as waters of the state under the Porter-Cologne Water Quality Control Act[23]. The Licensee shall provide a report of the delineation for the impacted waters of the state to State Water Board staff within six months of completing the delineation fieldwork. Within six months of submitting the report to State Water Board staff, the Licensee shall submit a Compensatory Mitigation Plan for the impacted waters to the Deputy Director for review and approval. The Compensatory Mitigation Plan shall be developed in consultation with the USACE and State Water Board staff. The Compensatory Mitigation Plan shall outline proposed compensation and mitigation measures for the preservation, restoration, enhancement, and/or establishment of wetlands and riparian habitat. Such proposed measures may include, but need not be limited to, purchase of credits at an approved mitigation bank or payment into an in-lieu fee program. The Compensatory Mitigation Plan shall include wetland mitigation ratios and a monitoring program to ensure the success of mitigation areas, if appropriate. The Deputy Director may require modifications as part of any approval. The Licensee shall file the Deputy Director-approved Compensatory Mitigation Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Compensatory Mitigation Plan upon receipt of Deputy Director and any other required approvals.

(b) Surveys. A qualified biologist[24] shall perform surveys for species that are threatened, endangered, or of special concern in areas that may be impacted by changes to the amount of water flowing in Abbott Ditch. If a qualified biologist determines that species that are threatened, endangered, or of special concern present in the surveyed area would be at risk from Project decommissioning activities, the Licensee shall work with CDFW and USFWS as appropriate to capture and relocate these species to suitable habitat or take other appropriate actions. The Licensee shall consult with CDFW and USFWS as appropriate in the implementation of the surveys and any follow up actions.

The Licensee shall, as early as possible, identify, communicate, and coordinate with the affected private landowners on its proposed plans to complete the required delineation, surveys, and capture and relocation, if necessary.

[23] Wat. Code, div. 7 (§ 13000 et seq.).

[24] See footnote 16.

CONDITION 20. Remaining Facilities

No later than one year following issuance of the FERC license surrender order, and prior to Project decommissioning, the Licensee shall submit a Remaining Facilities Plan to the Deputy Director for review and approval. The Deputy Director may require modifications as part of any approval. At a minimum, the Remaining Facilities Plan shall include:

a) A description of all Project facilities and structures that will not be removed during Project decommissioning, including facilities buried in place;

b) An analysis of potential water quality impacts associated with remaining facilities;

c) Measures to ensure remaining facilities do not contribute to water quality impairments; and

d) A description of how any ongoing measures will be implemented once title of the facilities is transferred to another entity following conclusion of Project decommissioning activities.

The Licensee shall file the Deputy Director-approved Remaining Facilities Plan, and any required modifications or amendments thereto, with FERC. The Licensee shall implement the Remaining Facilities Plan upon receipt of Deputy Director and any other required approvals. Any changes to the Remaining Facilities Plan must be approved by the Deputy Director prior to implementation.

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CONDITION 21. All proposed environmental measures described in the License Surrender Application, which includes measures identified in the Proposed Decommissioning Plan, are conditions of this certification. Notwithstanding any more specific conditions in this certification, the Licensee shall comply with all proposed environmental measures, including avoidance and minimization measures and BMPs, described in the License Surrender Application.

CONDITION 22. Fueling of construction equipment shall be done at a fixed fueling station to reduce the area exposed to the potential for fuel spills. Secondary containment, such as a drain pan or drop cloth, shall be used to catch spills or leaks when removing or changing fluids. Absorbent materials shall be used on small spills rather than hosing down or burying the spill. The absorbent material shall be promptly removed and disposed of properly.

CONDITION 23. When applicable, the Licensee shall comply with the State Water Board's Construction General Permit (State Water Board 2009) and amendments thereto.

CONDITION 24. The Licensee shall wash (power or high-pressure cleaning) all equipment prior to transport to Project decommissioning site and ensure all equipment is free of sediment, debris, noxious weeds, and foreign matter. The Licensee shall inspect all equipment for noxious weed seeds stuck in tire treads or mud on the vehicle. The Licensee shall document the inspection and provide the records to the State Water Board within 30 days of request.

CONDITION 25. 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 (e.g., motors, pumps, generators, etc.) shall be positioned over drip pans or other types of containment. Spill and containment equipment (e.g., oil spill booms, sorbent pads, etc.) shall be maintained onsite at all locations where such equipment is used or staged.

CONDITION 26. The Licensee shall pre-wash all imported riprap, rocks, and gravels used for construction within or adjacent to any watercourses. Wash water generated on-site shall not contact or enter surface waters. Wash water shall be contained and disposed of in compliance with state, federal, and local laws, ordinances, and regulations.

CONDITION 27. Construction material, debris, spoils, soil, silt, sand, bark, slash, sawdust, rubbish, steel, or other inorganic, organic, or earthen material, and any other substances from any Project or Project decommissioning-related activity, shall be prevented from entering surface waters. All construction debris and trash shall be contained and regularly removed from the work area to the staging area during construction activities. Upon completion of construction, all Project decommissioning-generated debris, building materials, excess material, waste, and trash shall be removed from all Project decommissioning sites for disposal at an authorized landfill or other disposal site in compliance with state, federal, and local laws, ordinances, and regulations.

CONDITION 28. No unset cement, concrete, grout, damaged concrete, concrete spoils, or wash water used to clean concrete surfaces shall contact or enter surface waters. Any area containing wet concrete shall be completely bermed and isolated. The berm shall be constructed of sandbags or soil and shall be lined with plastic to prevent seepage. No leachate from truck or grout mixer cleaning stations shall percolate into soils. Cleaning of concrete trucks or grout mixers shall be performed in

such a manner that wash water and associated debris is captured, contained, and disposed of in compliance with state, federal, and local laws, ordinances, and regulations. Washout areas shall be of sufficient size to completely contain all liquid and waste concrete or grout generated during washout procedures.

CONDITION 29. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

CONDITION 30. Unless otherwise specified in this water quality certification or at the request of the Deputy Director, data and reports shall 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 Water Code section 13167.

CONDITION 31. The State Water Board's approval authority, including authority delegated to the Deputy Director or others, includes the authority to withhold approval or to require modification of a proposal, plan, or report prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required item in a timely manner. If a time extension is needed to submit an item for Deputy Director approval, the Licensee shall submit a written request for the extension, with justification, to the Deputy Director no later than 60 days prior to the deadline. The Licensee shall file with FERC any Deputy Director-approved time extensions.

CONDITION 32. The State Water Board reserves the authority to add to or modify the conditions of this water quality certification: (1) if monitoring results indicate that the Project or Project decommissioning could violate water quality objectives or impair beneficial uses; or (2) 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 33. The Licensee shall comply with all applicable requirements of the Basin Plan. The Licensee must notify the Deputy Director and Executive Officer within 24 hours of any unauthorized discharge to waters of the United States under the federal Clean Water Act or waters of the state under the Porter-Cologne Water Quality Control Act.

CONDITION 34. Notwithstanding any more specific conditions in this water quality certification, Project decommissioning shall be implemented 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 in Old Cow Creek and South Cow Creek watersheds.

CONDITION 35. This water quality 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 & G. Code, §§ 2050-2097) or the federal ESA (16 U.S.C. §§ 1531-1544). If a "take" will result from any act otherwise authorized under this water quality certification or water rights held by the Licensee, the Licensee must obtain authorization for the take prior to any implementation of the portion of Project decommissioning that may result in a take. The Licensee is responsible for meeting all requirements of the applicable ESAs for Project decommissioning authorized under this water quality certification.

CONDITION 36. In response to a suspected violation of any condition of this water quality certification, the Deputy Director or the Executive Officer may require the holder of any federal permit or license subject to this water quality certification to furnish, under penalty of perjury, any technical or monitoring reports the Deputy Director or the Executive Officer 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. (Wat. Code, §§ 1051, 13165, 13267, & 13383.) The State Water Board may add to or modify the monitoring and/or reporting conditions of this water quality certification as appropriate to ensure compliance.

CONDITION 37. In the event of any violation or threatened violation of the conditions of this water quality certification, the violation or threatened violation is subject to all 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 (33 U.S.C. § 1341), the applicability of any state law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with the water quality standards and other pertinent requirements incorporated into this water quality certification.

CONDITION 38. No construction shall commence until all necessary federal, state, and local approvals are obtained. Upon request, a construction schedule shall be provided to State Water Board staff. The Licensee shall provide State Water Board and Central Valley Regional Water Board staff access to the Project and Project decommissioning sites to document compliance with this water quality certification.

CONDITION 39. A copy of this water quality certification shall be provided to any contractor and all subcontractors conducting Project decommissioning-related work, and copies shall remain in their possession at the site. The Licensee shall be

responsible for work conducted by its contractor, subcontractors, or other persons conducting Project decommissioning-related work.

CONDITION 40. 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 41. The Licensee must submit any proposed change to Project decommissioning activities that could have a significant or material effect on the findings, conclusions, or conditions of this water quality certification, to the State Water Board for prior review and written approval. The State Water Board shall determine significance and may require consultation with state or federal agencies. If the State Water Board is not notified of a change to Project decommissioning activities, or does not provide prior written approval, implementation of the change will be considered a violation of this certification. If such a change would also require submission to FERC, the change must first be submitted and approved by the Executive Director of the State Water Board.

CONDITION 42. This water quality 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 section 3867).

CONDITION 43. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or modify the conditions of this water quality certification.

CONDITION 44. Activities associated with Project decommissioning that threaten or potentially threaten water quality shall be subject to further review by the Deputy Director and Executive Officer.

CONDITION 45. This water quality certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.

CONDITION 46. Nothing in this water quality certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action if necessary to prevent any unauthorized or threatened unauthorized diversions of water.

CONDITION 47. This water quality certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC

license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

ORIGINAL SIGNED BY — NOVEMBER 27, 2019

Eileen Sobeck
Executive Director

Date

Attachments

Figure 1. Kilarc-Cow Creek Hydroelectric Project Schematic of Creeks, Canals, and Diversion

Attachment A. Findings of Fact and Statement of Overriding Considerations

8.0 References

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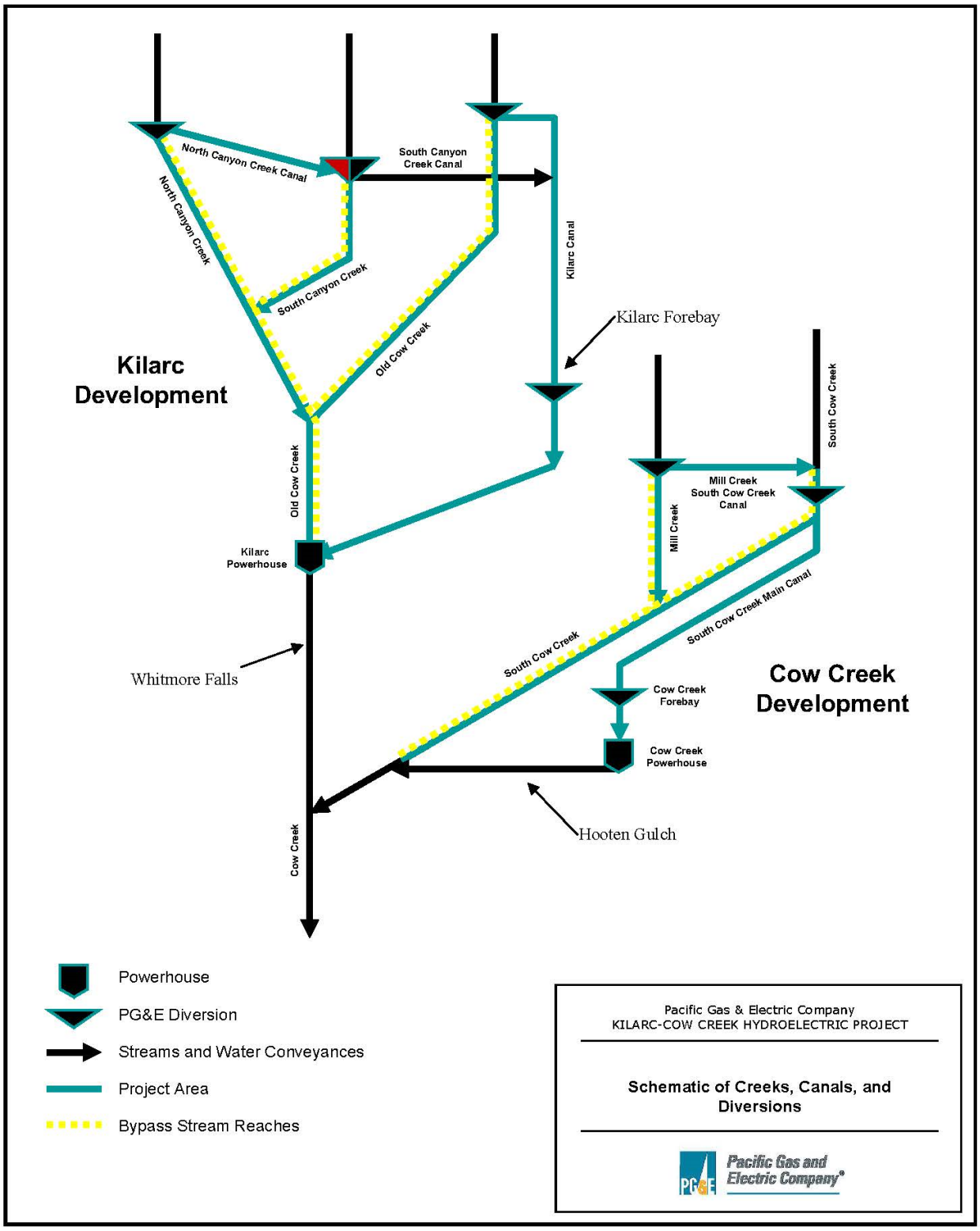

Figure 1. Kilarc-Cow Creek Hydroelectric Project Schematic of Creeks, Canals, and Diversions