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## State Water Resources Control Board

November 25, 2014

Ms. Jessica Albietz  
Pacific Gas and Electric Company  
Mail Code N11C  
P.O. Box 770000  
San Francisco, CA 94177

Dear Ms. Albietz

### AMENDMENT TO THE PIT 3, 4, AND 5, HYDROELECTRIC PROJECT WATER QUALITY CERTIFICATION; FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 233; SHASTA COUNTY

On September 16, 2014, Pacific Gas and Electric Company (PG&E) requested amendments to the water quality certification (certification) for the Pit 3, 4, and 5 Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 233. On September 30, 2014, the State Water Resources Control Board (State Water Board) received PG&E's application and filing fee for the requested amendment. The amendments entail: (1) revising Mitigation Measure 12 of the certification for consistency with the final approved Recreation Resource Management Plan (RRMP); and (2) revising Conditions 4, 5, 6, and 7 of the certification to remove any inconsistencies with the United States Forest Service (Forest Service) 2011 revised final Section 4(e) Conditions. The amendments are provided in track-changes and analyzed in Attachment A. Attachment B contains a clean copy of the amendments to the certification. The State Water Board provided public notice of PG&E's amendment request on October 6, 2014, by posting information regarding the proposal on the Division of Water Rights' website and providing notification to interested parties.

The State Water Board finds the proposed amendments to be protective of state water quality standards and other appropriate requirements of state law. The State Water Board hereby modifies Conditions 4, 5, 6, 7, and Mitigation Measure 12 of the certification as described in Attachments A and B.

### PROJECT BACKGROUND

The State Water Board issued a certification for the Project on January 25, 2007. On July 2, 2007, FERC issued a new license for the Project which includes the certification. Mitigation Measure 12 of the certification requires PG&E to develop a comprehensive recreation management plan and implementation schedule. PG&E, in consultation with the State Water Board, Forest Service, United States Fish and Wildlife Service, California Department of Fish and Wildlife, National Park Service, and the Pit River Tribe, among others, developed a RRMP for the Project and received approval from the State Water Board on April 25, 2011. A revised RRMP was approved by FERC on June 3, 2011. The FERC-approved, revised RRMP is inconsistent with Mitigation Measure 12 of the certification. PG&E is requesting modifications to Mitigation Measure 12 of the certification to ensure consistency with the approved RRMP.

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

Additionally, on December 28, 2011, the Forest Service filed with FERC a *Revision to Five Final Section 4(e) Conditions* for the Project. The Forest Service filing revised five of the Section 4(e) License Conditions to: "correct grammatical errors, provide clarifications, changes to survey protocols identified during specific resource plan development, design changes during construction, and others." To remove any inconsistencies between the revised five Final Section 4(e) Conditions and their corresponding certification conditions, PG&E is requesting that the State Water Board revise Conditions 4, 5, 6, and 7 of the certification as shown in Attachments A and B.

By letter dated, October 13, 2014, State Water Board staff notified PG&E that the application for certification amendment met the application filing requirements specified in California Code of Regulations, title 23, section 3856. The letter also informed PG&E that before an amendment of the certification can be considered, the State Water Board must comply with California Environmental Quality Act (CEQA) requirements.

#### CALIFORNIA ENVIRONMENTAL QUALITY ACT

Issuance of a certification and amendment thereof is a discretionary action that requires the State Water Board to comply with CEQA. For this certification amendment, and for the purpose of CEQA compliance, the State Water Board is the lead agency. Impacts due to Project implementation were thoroughly analyzed in FERC's Environmental Impact Statement and the State Water Board's Supplemental CEQA document developed during relicensing.

The proposed changes to Mitigation Measure 12 and Conditions 4, 5, 6, and 7 fall under the following CEQA Categorical Exemptions and do not have a reasonable possibility of significant effects due to unusual circumstances or when considered cumulatively with other projects:

- 1) Class 1 Categorical Exemption: Operation, repair, maintenance, or minor alteration of existing structures or facilities not expanding existing ones.
- 2) Class 2 Categorical Exemption: Replacement or reconstruction of existing structures or facilities on the same site having substantially the same purpose and capacity.
- 3) Class 3 Categorical Exemption: New construction of limited small new facilities; installation of small, new equipment and facilities in small structures; and conversion of the use of small existing facilities.
- 4) Class 4 Categorical Exemption: Minor alteration in the condition of the land, such as grading, gardening, and landscaping that do not affect sensitive resources.

(Cal. Code Regs., tit. 14, §§ 15301-15304.)

However, even though the amendments are covered by the CEQA categorical exemptions listed above, the State Water Board has prepared an addendum to its Supplemental CEQA document. The proposed changes to Mitigation Measure 12 and Conditions 4, 5, 6, and 7 of the certification are minor technical changes that would not involve any new significant environmental effects or a substantial increase in the severity of any previously identified substantial effects such that a subsequent environmental impact report (EIR) or negative declaration is required pursuant to California Code of Regulations, title 14, section 15162. An explanation of the revisions is included in Attachment A for each proposed change to Mitigation Measure 12 and Conditions 4, 5, 6, and 7 of the certification. These explanations describe the purpose and need for the proposed changes and clarify that the changes will not add or cause a new significant impact that would otherwise require additional review.

Accordingly, this letter, along with Attachments A and B, serves as an addendum to the State Water Board's certification and Supplemental CEQA document. A Notice of Determination has been prepared and will be filed within five days of issuance of this certification amendment (Cal. Code Regs., tit. 14, § 15098).

All documents and other information that constitute the public record for this amendment will be maintained by the Division of Water Rights and are available for public review at the following address: State Water Board, Division of Water Rights, 1001 I Street, Sacramento, California, 95814.

If you have questions regarding this letter, please contact Mr. Oscar Biondi, Project Manager, at (916) 323-9397 or by email at [Oscar.Biondi@waterboards.ca.gov](mailto:Oscar.Biondi@waterboards.ca.gov). Written correspondence can be directed to:

State Water Resources Control Board  
Division of Water Rights  
Water Quality Certification Program  
Attn: Oscar Biondi  
Sacramento, CA 95812-2000

Sincerely,



Thomas Howard  
Executive Director

Enclosures:

Attachment A: Amendments and Analysis of Revisions to Pit 3, 4, and 5 Hydroelectric Project Water Quality Certification

Attachment B: Clean Copy of Amendments to Pit 3, 4, and 5 Hydroelectric Project Water Quality Certification

Notice of Determination

cc: Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Ms. Jane Diamond, Director  
U.S. Environmental Protection Agency  
Region 9, Water Division  
75 Hawthorne Street  
San Francisco, CA 94105

Ms. Annie Manji  
California Department of Fish and Wildlife  
601 Locust Street  
Redding, CA 96001

Mr. Adam Laputz  
Central Valley Regional Water  
Quality Control Board  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670

Mr. Randy Moore  
USDA, Forest Service, R5  
1323 Club Drive  
Vallejo, CA 94592

ATTACHMENT A  
Amendments and Analysis of Revisions to  
Pit 3, 4, and 5 Hydroelectric Project Water Quality Certification  
(Track Changes Version with Explanations for Revisions)

This document contains track-change amendments to the Pit 3, 4, and 5, Hydroelectric Project (Project) water quality certification (certification) based on Pacific Gas and Electric Company's (PG&E or Licensee) September 16 and 30, 2014, request. This document is divided into two sections: (1) revisions to Mitigation Measure 12; and (2) revisions to certification Conditions 4, 5, 6, and 7.

### **Section 1: Revisions to Mitigation Measure 12 of the Certification to Ensure Consistency with the 2011 Recreation Resource Management Plan**

This section provides revisions to Mitigation Measure 12, Section J., to remove inconsistencies with the approved 2011 Recreation Resource Management Plan (RRMP). Text from the January 25, 2007 Project certification is referenced in *italicized* text, with deletions shown in ~~strike out~~, and additions shown as **bold**, *italicized*, and underlined text. An explanation of the revision follows each change.

#### **Mitigation Measure 12: Recreation Management Plan**

1. Revise Section J. "measures that pertain to Lake Britton," as shown:

J. *The following measures that pertain to Lake Britton:*

- ~~1) Develop a plan for public access to Lower Hat Creek consistent with the Historic Properties Management Plan.~~
- 21) Implementation of the following improvements at the North Shore Campground: (a) institute measures to create and maintain beach areas and to reduce shoreline erosion due to beach use; (b) designate swimming areas to separate swimming and boat mooring and beaching; (c) provide directional signage, as appropriate; (d) ~~evaluate the need for and feasibility of construction additional road pullouts on the North Shore Campground access road; access measures to provide 10 to 15 parking spaces for day use only near the boat launch or east bluff beach access areas; (e) provide firewood to campground users (either for sale or free of charge); and (f)~~ **install flush toilets and showers;**
- 32) Identification of additional beach day-use capacity around Lake Britton that would increase the existing capacity by 100 people at one time and concentrate on enhancing existing sites or disturbed areas below any new location are considered. Day use areas would include the following: (a) regularly maintained beach sand, if needed; (b) access to the shore designed to minimize erosion; (c) restroom on site or nearby; (d) access by road or boat; (e) designated parking, if access is by road; (f) trash collection; and (g) regular monitoring by a host or PG&E employee;
- 43) Addition of 25 percent more public overnight developed camping units over the life of the license (an increase of 39 sites); at least half of the capacity would be added during the first 10 years from license issuance and the balance within 15 years of license issuance; additions to capacity should be within the Project boundary or situated to enhance public access to Project lands and waters; new capacity would emphasize expansion of existing sites and use areas over the development of new sites and use areas **Addition of up to 25% more public overnight developed camping units over the life of the License (equivalent to an increase of up to 39**

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**campsites or 156 people-at-one-time (“PAOT”). This increase shall be attained within the first 15 years of License issuance with: a) at least half of the capacity added in the first 10-year period, and b) any needed outstanding balance completed by Year 15. New overnight sites in this provision should reflect the current or planned development level of an existing campground. Any new campgrounds will be development level 3 or 4. Additions to capacity should be within the project boundary or, within a 1-1/2 mile radius of the project waters. New capacity shall emphasize expansion of existing sites/use areas over development of new sites/use areas. An existing site is defined as a designated and managed recreation site containing man-made improvements. A use area is defined as an area being heavily utilized by the public such that its natural character has been heavily impacted. Examples are loss of vegetation due to parking and trampling, existence of makeshift facilities such as campfire rings, shelters, sanitation; considerable evidence of trash.**

**The 10-year requirement will be fulfilled when the Licensee completes the construction of campground facilities equivalent to 80 PAOT or more. To meet the 10-year requirement, the Licensee may elect to partner with the California State Park to develop non-Project campgrounds at McArthur-Burney Falls State Park, including but not limited to, the construction of a 100 PAOT-group campground.**

**Upon completion of the 10-year requirement, the Licensee shall develop a plan to provide the remaining balance of campsites (up to 80 PAOT) at Lake Britton by Year 15 of the License. This plan shall be submitted to the Deputy Director on or prior to Year 10 of the License. The Licensee shall consult with the State Water Board to evaluate recreation survey data and triggers identified in the State Water Board and FERC-approved Project recreation management plan, along with other factors, to determine if there is sufficient user demand to develop these additional campsites. The 15-year requirement will be fulfilled upon the completion of any additional campsites deemed necessary by the State Water Board. After fulfillment of the 10-year and 15-year requirements, Licensee will have fulfilled this Condition for providing additional overnight capacity at Lake Britton;**

- 54) Establishment of a reservoir water surface zoning plan that documents existing speed zones and displays recommended changes; and
- 65) Identification of measures to enhance the existing Jamo Point boat launch area, including: (a) designating parking spaces for vehicles with trailers; (b) providing a picnic table **or bench** between the restroom and shoreline; **and** (c) ~~developing a potable water source at the Jamo Point boat launch or Pines picnic area, including assessment of whether this source should be available on a year-round basis, to help improve the recreational user experience at this area; and~~ (d) providing personnel at the Jamo Point boat launch area and Pines picnic area to provide trash removal and maintenance of restrooms during weekends from Labor Day through September.

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**Explanation of Revisions to the MMRP:**

Revision of Original Item J.1):

Public access to Lower Hat Creek consistent with the Historic Properties Management Plan was in place prior to completion of the 2011 RRMP; therefore, the RRMP did not include additional proposals for Lower Hat Creek access.

Revision of Original Item J.2):

The evaluation of additional road pullouts on the North Shore Campground access road was included in the Road and Transportation Facility Management Plan. Pursuant to Article 410 of the license and United States Forest Service (Forest Service) Section 4(e), Condition 27, the Road and Transportation Facility Management Plan was approved by the Forest Service and the Federal Energy Regulatory Commission (FERC) on October 24, 2008 and December 12, 2008, respectively.

Revision of Original Item J.4):

The FERC-approved 2011 RRMP included a proposal to contribute funds to the California State Parks (State Parks) for the construction of a group campground within the McArthur-Burney Falls Memorial State Park (MBF State Park) located at Lake Britton. Revision of original Item J.4) includes the option of providing, by Year 10 of the license, a group campground instead of only family campsites to meet certification requirements. The proposed revision also provides clarification that if appropriate, based on future recreation demand and consultation with the State Water Resources Control Board (State Water Board), additional capacity may be provided by Year 15 of the license. PG&E consulted with the State Water Board and the Lassen National Forest staff for the past two years regarding appropriate measures that will fulfill the corresponding certification and Section 4(e) conditions in PG&E's license.

PG&E and the Forest Service staff agreed on the proposed revised Section 4(e) Condition 26.4 language to allow PG&E to contribute funds to State Parks to build a non-Project group campground in the MBF State Park, to fulfill overnight camping Section 4(e) requirements. As such, PG&E filed a request for amendment to Section 4(e) Condition No. 26.4 with the Lassen National Forest Supervisor on July 14, 2014. The Forest Service reviewed the proposed language and approved the revisions to Section 4(e) Condition 26.4 in a letter to FERC dated October 23, 2014.

PG&E consulted extensively with State Parks, which has agreed in principle to accept PG&E's funding to construct this additional group campground in the MBF State Park. Construction of a group campground at Lake Britton will help State Parks meet one of the needs identified in the MBF State Park's General Plan.

Pursuant to the 2011 RRMP, on or prior to Year 10 of the license, PG&E will further consult with the State Water Board to determine whether additional overnight capacity is needed at Lake Britton. If a determination is made that additional overnight capacity is needed, the additional facilities will be provided by Year 15 of the license. These steps will fulfill PG&E's requirements under Mitigation Measure 12, original Item J.4).

Revisions of Original Item J.6):

The revision to original Item (b) of J.6) corrects the text to match developments in the 2011 RRMP, by allowing for installation of a bench or a picnic table. To fulfill the requirement outlined

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in original Item (c) of J.6), PG&E began drilling a well on June 1, 2012 at Jamo Point boat launch. The well was unable to produce water of sufficient quantity or quality for public consumption. Further investigation of the well site suggested that the location sat atop several layers of diatomaceous earth, which significantly limited production. Since the adjacent Pines picnic area was very likely to have the same geologic substrate, PG&E and the Forest Service felt that similar water quality problems would result from well drilling at that location as well. Per RRMP requirements, PG&E drilled a well at nearby Dusty Campground and did not encounter the same geologic issues. As a result, PG&E plans to direct recreational users to the Dusty Campground for potable water.

## **Section 2: Revisions to Certification Conditions to Ensure Consistency with Forest Service Section 4(e) Conditions**

This section provides revisions to certification Conditions 4, 5, 6, and 7 to remove inconsistencies with the revised Final Section 4(e) License Conditions filed by the Forest Service with FERC on December 28, 2011. Text from the January 25, 2007 Project certification is referenced in *italicized* text, with deletions shown in ~~strike out~~, and additions shown as **bold**, *italicized*, and underlined text. An explanation of the revisions follows each condition's changes.

### **Condition 4: Reservoir Level and Operation Protocols**

Revise portions of Condition 4 as follows (note that portions of Condition 4 that are not revised below remain in effect as written in the existing certification):

#### *4. Reservoir Level and Operation Protocols:*

*The Licensee shall, beginning as early as reasonably practicable and within six months after License issuance, operate Project dams, reservoirs, and powerhouses according to the operation protocols specified below.*

*For the purposes of this Condition, a spill event is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre-feet) above the required minimum stream flow.*

**Operation protocols described below dictate ramping rates as long as other ramping rate criteria specified in Condition 7 do not apply.**

#### *A. Operation Protocols for Pit 3 Dam, Lake Britton, and Pit 3 Powerhouse...*

*9. If the Pit 3 Powerhouse is operating at less than full flow **load** during a spill event **at any time of year**, and is able to return to full flow **load**, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse flow **load**:*

*a) Powerhouse flow **load** shall be increased in steps;*

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b) Each step shall not exceed 50 percent of the stream flow passing Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, based on the midnight stream flow measurements; and

c) There shall be at least a 24-hour interval between steps.

**d) To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.**

~~d)~~**e) This protocol applies until the Pit 3 Powerhouse reaches full flow load or the rate of stream flow passing Pit 3 Dam is less than 200 cfs above the required minimum stream flow for the Pit 3 Reach. If the powerhouse is not at full flow load at this point, the stream flow passing the Pit 3 Dam may be reduced to the required minimum stream flow.**

**B. Operation Protocols for Pit 4 Dam, Pit 4 Reservoir, and Pit 4 Powerhouse**

1. The normal operating elevation for Pit 4 Reservoir shall be between 2,415.5 feet and 2,422.5 feet (NGVD) (2,435 feet and 2,442 feet, PG&E datum). **During spill conditions, the normal water surface elevations can be temporarily exceeded in order to operate the facility according to the operations protocol. The minimum instream flow release valve can be utilized at any time during the operation of Pit 4 Dam to attempt to better control water fluctuations during transitional operation from spill to release flow from low-level outlets or drum gates.**

2. During periods of increasing inflow to Pit 4 Reservoir, Licensee shall take the following steps in the sequence indicated, until inflow ceases to increase:

a) As inflow to Pit 4 Reservoir increases, Pit 4 Powerhouse flows shall be ramped up to match inflow, up to full powerhouse flow.

b) If inflow to Pit 4 Reservoir continues to increase, and the reservoir water surface elevation reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), ~~the #1 a~~ low-level outlet gate shall be fully opened. As ~~the #1 a~~ low-level outlet gate is opened, stream flow shall be transferred ~~smoothly~~ from spill to release. ~~The minimum stream flow release valve shall be closed to prevent plugging with sediment or debris.~~

c) Step b) above shall be repeated for **each of the remaining** low level outlet gates #2 ~~and #3 until all three low level outlets are opened or inflow ceases to increase.~~

d) If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), all three low-level outlets shall be closed and ~~the #2 a~~ spillway drum gate shall be lowered, ~~smoothly~~ transferring the release from the low-level outlets to the open spillway.

e) If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step b) and c) above shall be repeated until all three low level outlets are opened or inflow ceases to increase.



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- f) *If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 (NGVD) feet (2,443.7 feet, PG&E datum), step d) shall be repeated for the #1 **remaining** spillway drum gate.*
  - g) *If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step b) and c) above shall be repeated until all three low level outlets are opened or inflow ceases to increase.*
  - h) *Further inflow increases shall be allowed to pass through the open spillway and open low-level outlets.*
3. *In order to minimize flow pulses during the recession of spill flow, after inflow has reached a peak and inflow to Pit 4 Reservoir is decreasing, the Licensee shall take the following actions in the sequence listed, beginning with the action corresponding to the actual peak inflow:*
- a) *As inflow to the reservoir declines, and the water surface elevation drops to 2,422.5 feet (NGVD) (2,442.0 feet, PG&E datum), ~~the #3~~ **a** low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.*
  - b) *As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), ~~the #2~~ **a** spillway drum gate shall be raised and all three low-level outlets shall be opened, ~~smoothly~~ transferring a portion of the spill flow to release flow.*
  - c) *As inflow to the reservoir continues to decline, and the water surface elevation again drops to approximately 2,422.5 feet (NVGD) (2,442.0 feet, PG&E datum), ~~the #3~~ **a** low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.*
  - d) *As inflow to the reservoir continues to decline, and the water surface drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), ~~the #1~~ **a** spillway drum gate shall be raised and all low-level outlets shall again be opened, ~~smoothly~~ transferring spill flow to release flow.*
  - e) *As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,422.5 feet (NVGD) (2,442.0 feet, PG&E datum), ~~the #3~~ **a** low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.*
  - f) *As the #1 **last** low-level outlet is closed, the minimum ~~streamflow~~ **stream flow** release valve shall be opened to the appropriate required minimum ~~streamflow~~ **stream flow** release setting.*
  - g) *If the Pit 4 Powerhouse is operating at less than full load during a spill event, **at any time of year**, and is able to return to full load, the Licensee shall utilize the following*

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*protocol to not cause a rapid cessation of spill when increasing powerhouse load by utilizing the following protocol:*

- 1) Powerhouse load shall be increased in steps;
- 2) Each step shall not exceed 50 percent of the flow passing Pit 4 Dam in excess of the required minimum ~~streamflow~~ **stream flow** for the Pit 4 Reach; ~~and~~
- 3) There shall be at least a 24-hour interval between steps; **and**
- 4) **To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.**

*This protocol applies until the powerhouse reaches full flow **load** or the rate of stream flow passing Pit 4 Dam is less than 200 cfs above the required minimum stream flow for the Pit 4 Reach. If the powerhouse is not at full flow **load** at this point, the stream flow passing the Pit 4 Dam may be reduced to the required minimum stream flow.*

C. Operation Protocols for Pit 5 Dam, Pit 5 Reservoir, and Pit 5 Powerhouse

1. As inflow to Pit 5 Reservoir increases, Pit 5 Powerhouse flows shall be ramped up to match inflow up to the full powerhouse flow.
2. As inflow to Pit 5 Reservoir exceeds the full flow of Pit 5 Powerhouse, the Pit 5 Dam spillway gates **and/or minimum instream flow gates** shall be operated to maintain an approximately constant water surface elevation of 2,040.5 feet (NGVD) (2,060 feet PG&E datum) at Pit 5 Reservoir.
3. If the Pit 5 Powerhouse is operating at less than full flow **load** during a spill event, **at any time of the year**, and is able to return to full flow **load**, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse flow **load**:
  - a) Powerhouse flow **load** shall be increased in steps;
  - b) Each step shall not exceed 50 percent of the **stream** flow passing Pit 5 Dam in excess of **the** required minimum stream flow for the Pit 5 Reach, ~~based on the midnight stream flow measurements; and~~
  - c) There shall be at least a 24-hour interval between steps; **and.**
  - d) **To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.**

*This protocol applies until the powerhouse reaches full flow **load** or the rate of stream flow passing Pit 5 Dam is less than 200 cfs above the required minimum stream flow for the Pit 5*

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*Reach. ~~If the~~ and the powerhouse is not at full flow load at this point, at which point the stream flow passing the Pit 5 Dam may be reduced to the required minimum stream flow.*

**Explanation of Revisions to Condition 4:**

At the time the State Water Board and Forest Service wrote the certification and Final Section 4(e) License Conditions, respectively, it was not known that PG&E would need to reconstruct the Pit 4 and Pit 5 dams to allow variable flows. This revision creates a need to revise the operations protocols. Additionally, there were differing interpretations of Condition 4 made by PG&E operators when deciding how to operate the reservoir. This revised wording considers the new instream flow release infrastructure and clarifies wording for operational implementation. These revisions meet the original intent of Condition 4 and do not create any significant environmental impacts.

**Condition 5: Freshet Flows**

Revise portions of Condition 5 as follows (note that portions of Condition 5 that are not revised below remain in effect as written in the existing certification):

*5. Freshet Flows*

*Licensee shall implement the following planning events and actions each year: . . .*

*D. For the purposes of this condition, spill is defined as a stream flow event at a Project dam during the 17 months prior to the March 1 freshet flow implementation date that meets all of the following characteristics: occurs between December 1 and May 31; has a cumulative volume of at least 25,000 acre-feet; has a duration of at least 21 **consecutive** days; and has at least two average daily flows exceeding 1,500 cfs. Spill may be made up of natural and released flows **above base flow**.*

**Explanation of Revisions to Condition 5:**

PG&E found that differing interpretations of the existing Condition 5 language could be made by PG&E operators when deciding if flows met the spill definition, which is used to determine if additional freshet flows are required. The revised wording provides necessary clarification. This revision does not change the original intent of Condition 5 and does not create any significant environmental impacts.

**Condition 6: Out-of-Season Spill Reduction**

Revise portions of Condition 6 as follows (note that portions of Condition 6 that are not revised below remain in effect as written in the existing certification):

*6. Out-of-Season Spill Reduction*

*The Licensee shall operate the Project in a manner that does not cause discretionary, out-of-season spill flows in excess of twice the required minimum stream flow at Pit 3 Dam, Pit 4 Dam, and Pit 5 Dam. An out-of-season spill is defined as a spill that occurs during the*

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*normally non-spill summer and fall period **(April 16 – September 30)**. The Licensee shall take all reasonable controllable actions necessary to control out-of-season spill flows, which shall include, as a first priority, utilization of Project storage.*

**Discretionary spills are releases from the dams through any means (spillways, gates, or valves) that exceed twice the minimum instream flow for that month. These spills are those that the Licensee voluntarily undertakes, and do not include those caused by unit failures, natural events during periods of reduced diversion capacity (facility outages), or those caused by other factors beyond the Licensee's control.**

#### **Explanation of Revisions to Condition 6:**

During implementation of Condition 6, it became clear to PG&E that Condition 6 could be interpreted in various ways. There are also several definitions of spill and out-of-season spill events for different instream flow components associated with this Project. Therefore, PG&E, Forest Service, and State Water Board staff collaborated on the language to clarify implementation and applicable dates, while still retaining the original intent of the condition. The revision does not create any significant environmental impacts.

#### **Condition 7: Ramping Rates**

Revise portions of Condition 7 as follows (note that portions of Condition 7 that are not revised below remain in effect as written in the existing certification):

##### **7. Ramping Rates**

*To prevent adverse effects of rapid changes in regulated stream flow that are inconsistent with the natural rate of change in stream flow, the Licensee shall follow the ramping rates specified below when making stream flow releases from Pit 3, Pit 4, and Pit 5 Dams unless a different ramping rate is specified in another condition.*

*A ramping rate is defined as the rate of change in stream stage height, up or down, over a time period, such as 0.5 foot/hour. The Licensee shall be deemed in compliance with the specified up and down ramping rate if at least 75 percent of the actual incremental changes in flow are less than or equal to the specified ramping rate, and all of the actual incremental changes in flow are less than 150 percent of the specified ramping rate.*

**For the purposes of this condition, a spill event (excluding out-of-season spills defined in Condition 6) is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs above the required minimum stream flow (and a volume of at least 1,800 acre-feet). If a spill event does not meet this definition, ramping rates are not required.**

*Ramping Rate after Spills Influenced by Powerhouse Outages: As described in the Reservoir Operations condition, some spills may include, or be composed entirely of, flow that would otherwise be going through a powerhouse but is instead released as spill due to a powerhouse outage. The Reservoir Operations condition specifies that when returning the powerhouse to full load, the 24-hour increase of powerhouse flow shall not exceed 50 percent of the flow passing the associated dam in excess of the required minimum stream*

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~~flow for the affected reach, based on the midnight stream flow measurements. The ramping rate shall be 0.5 foot/hour or less. The final step to the required minimum stream flow is allowed when the difference between the flow passing the dam is less than 200 cfs above the required minimum stream flow for the affected reach. The ramping rate for the downstream reach shall be 0.5 foot/hour or less and there shall be an hour separation between each step until the daily decrease in spill is reached.~~ **If a powerhouse is operating at less than full load during a spill event, at any time of the year, and is able to return to full load, the Licensee shall utilize the following protocol to prevent a rapid cessation of spill when increasing powerhouse load:**

**Powerhouse load shall be increased in the following manner: (1) each step shall not exceed 50 percent of the stream flow passing the dam in excess of the required minimum stream flow for the reach; and (2) there shall be at least a 24-hour interval between steps.**

**To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.**

**There is no ramping rate when the spill is over 1,200 cfs.**

Ramping Rate Before and After Out-of-Season Spills: If the Licensee anticipates that an out-of-season spill is imminent because the storage capacity of the affected reservoir will be exceeded, the Licensee shall make a good faith effort to initiate stream flow releases that ramp up to the expected spill flow in at least three steps. An out-of-season spill is defined as a **flow greater than twice the required minimum stream flow** spill that occurs at **past Pit 3 Dam, Pit 4 Dam, or Pit 5 Dam during the normally non-spill summer and fall period, from April 16 to September 30.**

The out-of-season spill, **once below 1,200 cfs,** shall be ramped down **as follows:** at a rate that is dependent on the duration of the spill. ~~(1) if the spill was less than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot/hour; and (2) if the spill was longer than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot~~ **or less** /hour, ~~but one~~ **with two hours** separating ~~each step~~ **ramping rate adjustment** so that the down ramp is more gradual.

#### **Explanation of Revisions to Condition 7:**

PG&E found that differing interpretations of Condition 7 language could be made by PG&E operators when attempting to implement ramping rates. The revisions will remove confusion and meet the intent of the original text. The 1,200 cubic feet per second threshold represents the flow control capacity of the instream flow release valves at the Project dams. The revision does not create any significant environmental impacts.

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This document contains a clean version of the amendments to the Pit 3, 4, and 5, Hydroelectric Project (Project) water quality certification (certification) based on Pacific Gas and Electric Company's (PG&E or Licensee) September 16 and 30, 2014, request. This document is divided into two sections: (1) revisions to Mitigation Measure 12; and (2) revisions to certification Conditions 4, 5, 6, and 7.

**Section 1: Revisions to Mitigation Measure 12 of the Certification to Ensure Consistency with the 2011 Recreation Resource Management Plan**

This section provides revisions to Mitigation Measure 12, Section J., to remove inconsistencies with the approved 2011 Recreation Resource Management Plan (RRMP).

Revise Mitigation Measure 12, Section J. as follows (note that all portions of Mitigation Measure 12 that are not revised below remain in effect as written in the existing certification):

*J. The following measures that pertain to Lake Britton:*

- 1) Implementation of the following improvements at the North Shore Campground: (a) institute measures to create and maintain beach areas and to reduce shoreline erosion due to beach use; (b) designate swimming areas to separate swimming and boat mooring and beaching; (c) provide directional signage, as appropriate; (d) provide firewood to campground users (either for sale or free of charge); and (e) install flush toilets and showers;*
- 2) Identification of additional beach day-use capacity around Lake Britton that would increase the existing capacity by 100 people at one time and concentrate on enhancing existing sites or disturbed areas below any new location are considered. Day use areas would include the following: (a) regularly maintained beach sand, if needed; (b) access to the shore designed to minimize erosion; (c) restroom on site or nearby; (d) access by road or boat; (e) designated parking, if access is by road; (f) trash collection; and (g) regular monitoring by a host or PG&E employee;*
- 3) Addition of up to 25% more public overnight developed camping units over the life of the License (equivalent to an increase of up to 39 campsites or 156 people-at-one-time ("PAOT")). This increase shall be attained within the first 15 years of License issuance with: a) at least half of the capacity added in the first 10-year period, and b) any needed outstanding balance completed by Year 15. New overnight sites in this provision should reflect the current or planned development level of an existing campground. Any new campgrounds will be development level 3 or 4. Additions to capacity should be within the project boundary or, within a 1-1/2 mile radius of the project waters. New capacity shall emphasize expansion of existing sites/use areas over development of new sites/use areas. An existing site is defined as a designated and managed recreation site containing man-made improvements. A use area is defined as an area being heavily utilized by the public such that its natural character has been heavily impacted. Examples are loss of vegetation due to parking and trampling, existence of makeshift facilities such as campfire rings, shelters, sanitation; considerable evidence of trash.*

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*The 10-year requirement will be fulfilled when the Licensee completes the construction of campground facilities equivalent to 80 PAOT or more. To meet the 10-year requirement, the Licensee may elect to partner with the California State Park to develop non-Project campgrounds at McArthur-Burney Falls State Park, including but not limited to, the construction of a 100 PAOT-group campground.*

*Upon completion of the 10-year requirement, the Licensee shall develop a plan to provide the remaining balance of campsites (up to 80 PAOT) at Lake Britton by Year 15 of the License. This plan shall be submitted to the Deputy Director on or prior to Year 10 of the License. The Licensee shall consult with the State Water Board to evaluate recreation survey data and triggers identified in the State Water Board and FERC-approved Project recreation management plan, along with other factors, to determine if there is sufficient user demand to develop these additional campsites. The 15-year requirement will be fulfilled upon the completion of any additional campsites deemed necessary by the State Water Board. After fulfillment of the 10-year and 15-year requirements, Licensee will have fulfilled this Condition for providing additional overnight capacity at Lake Britton;*

- 4) Establishment of a reservoir water surface zoning plan that documents existing speed zones and displays recommended changes; and*
- 5) Identification of measures to enhance the existing Jamo Point boat launch area, including: (a) designating parking spaces for vehicles with trailers; (b) providing a picnic table or bench between the restroom and shoreline; and (c) providing personnel at the Jamo Point boat launch area and Pines picnic area to provide trash removal and maintenance of restrooms during weekends from Labor Day through September.*

**Section 2: Revisions to Certification Conditions to Ensure Consistency with United States Forest Service Section 4(e) Conditions**

This section provides revisions to certification Conditions 4, 5, 6, and 7 to remove inconsistencies with the revised Final Section 4(e) License Conditions filed by the United States Forest Service with the Federal Energy Regulatory Commission on December 28, 2011. The revised certification conditions are provided in their entirety.

**Condition 4: Reservoir Level and Operation Protocols**

Revise Condition 4 as follows:

**4. Reservoir Level and Operation Protocols:**

*The Licensee shall, beginning as early as reasonably practicable and within six months after License issuance, operate Project dams, reservoirs, and powerhouses according to the operation protocols specified below.*

*For the purposes of this Condition, a spill event is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs (and a volume of at least 1,800 acre-feet) above the required minimum stream flow.*

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*Operation protocols described below dictate ramping rates as long as other ramping rate criteria specified in Condition 7 do not apply.*

A. *Operation Protocols for Pit 3 Dam, Lake Britton, and Pit 3 Powerhouse*

1. *The year-round minimum water surface elevation of Lake Britton shall be 2,731.5 feet (NGVD) (2,751 feet, PG&E datum).*
2. *Each year, within 24 hours following the cessation of the first spill event after November 1, but no later than December 1, at least one of the Pit 3 Dam spillway bladder gates shall be kept in the fully deflated position.*
3. *The Licensee shall take reasonable care to prevent a sudden release of flow when deflating the bladder gates if the bladder gates must be deflated as per item 2 above and Lake Britton surface elevation is at 2,732.5 feet (NGVD) (2,752 feet, PG&E datum) or higher with the bladder gates inflated.*
4. *During the period from December 1 through at least April 20 of each year, the minimum water surface elevation of Lake Britton shall be 2,731.5 feet (NGVD) (2,751 feet PG&E datum) and to the greatest extent possible, within the limitation of the Pit 3 Powerhouse capabilities and Pit 3 Dam Spillway capacity, the maximum water surface elevation shall be 2,733.5 feet (NGVD) (2,753 feet PG&E datum).*
5. *At least one of the Pit 3 Dam Spillway bladder gates shall remain deflated until April 20 or until there is no flow passing the Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, whichever is later.*
6. *The maximum allowable Lake Britton water surface elevation shall be 2,735.5 feet (NGVD) (2,755 feet, PG&E datum) between April 21 and the Saturday preceding Memorial Day weekend.*
7. *The maximum normal water surface elevation of Lake Britton shall increase to 2,737.5 feet (NGVD) (2,757 feet, PG&E datum) on the Saturday preceding Memorial Day weekend or once there is no stream flow passing the Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, whichever is later.*
8. *If after April 20, and after the stream flow in the Pit 3 Reach has receded to the minimum required stream flow, the inflow to Lake Britton increases to a magnitude that requires deflation of a bladder gate to keep the elevation of Lake Britton within the levels specified above, the bladder gate shall remain deflated until stream flow in the Pit 3 Reach recedes to the required minimum stream flow.*
9. *If the Pit 3 Powerhouse is operating at less than full load during a spill event at any time of year, and is able to return to full load, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse load:*
  - a) *Powerhouse load shall be increased in steps;*



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- b) *Each step shall not exceed 50 percent of the stream flow passing Pit 3 Dam in excess of the required minimum stream flow for the Pit 3 Reach, based on the midnight stream flow measurements; and*
- c) *There shall be at least a 24-hour interval between steps.*
- d) *To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.*
- e) *This protocol applies until the Pit 3 Powerhouse reaches full load or the rate of stream flow passing Pit 3 Dam is less than 200 cfs above the required minimum stream flow for the Pit 3 Reach. If the powerhouse is not at full load at this point, the stream flow passing the Pit 3 Dam may be reduced to the required minimum stream flow.*

B. Operation Protocols for Pit 4 Dam, Pit 4 Reservoir, and Pit 4 Powerhouse

1. *The normal operating elevation for Pit 4 Reservoir shall be between 2,415.5 feet and 2,422.5 feet (NGVD) (2,435 feet and 2,442 feet, PG&E datum). During spill conditions, the normal water surface elevations can be temporarily exceeded in order to operate the facility according to the operations protocol. The minimum instream flow release valve can be utilized at any time during the operation of Pit 4 Dam to attempt to better control water fluctuations during transitional operation from spill to release flow from low-level outlets or drum gates.*
2. *During periods of increasing inflow to Pit 4 Reservoir, Licensee shall take the following steps in the sequence indicated, until inflow ceases to increase:*
  - a) *As inflow to Pit 4 Reservoir increases, Pit 4 Powerhouse flows shall be ramped up to match inflow, up to full powerhouse flow.*
  - b) *If inflow to Pit 4 Reservoir continues to increase, and the reservoir water surface elevation reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), a low-level outlet gate shall be fully opened. As a low-level outlet gate is opened, stream flow shall be transferred from spill to release.*
  - c) *Step b) above shall be repeated for each of the remaining low level outlet gates.*
  - d) *If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), all three low-level outlets shall be closed and a spillway drum gate shall be lowered, transferring the release from the low-level outlets to the open spillway.*
  - e) *If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step b) and c) above shall be repeated until all three low level outlets are opened or inflow ceases to increase.*

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- f) *If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step d) shall be repeated for the remaining spillway drum gate.*
  - g) *If inflow continues to increase, and the reservoir water surface elevation again reaches 2,424.2 feet (NGVD) (2,443.7 feet, PG&E datum), step b) and c) above shall be repeated until all three low level outlets are opened or inflow ceases to increase.*
  - h) *Further inflow increases shall be allowed to pass through the open spillway and open low-level outlets.*
3. *In order to minimize flow pulses during the recession of spill flow, after inflow has reached a peak and inflow to Pit 4 Reservoir is decreasing, the Licensee shall take the following actions in the sequence listed, beginning with the action corresponding to the actual peak inflow:*
- a) *As inflow to the reservoir declines, and the water surface elevation drops to 2,422.5 feet (NGVD) (2,442.0 feet, PG&E datum), a low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.*
  - b) *As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), a spillway drum gate shall be raised and all three low-level outlets shall be opened, transferring a portion of the spill flow to release flow.*
  - c) *As inflow to the reservoir continues to decline, and the water surface elevation again drops to approximately 2,422.5 feet (NGVD) (2,442.0 feet, PG&E datum), a low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.*
  - d) *As inflow to the reservoir continues to decline, and the water surface drops to approximately 2,415.5 feet (NGVD) (2,435.0 feet, PG&E datum), a spillway drum gate shall be raised and all low-level outlets shall again be opened, transferring spill flow to release flow.*
  - e) *As inflow to the reservoir continues to decline, and the water surface elevation drops to approximately 2,422.5 feet (NGVD) (2,442.0 feet, PG&E datum), a low-level outlet shall be closed. This step shall be repeated until all three low-level outlets are closed.*
  - f) *As the last low-level outlet is closed, the minimum stream flow release valve shall be opened to the appropriate required minimum stream flow release setting.*
  - g) *If the Pit 4 Powerhouse is operating at less than full load during a spill event, at any time of year, and is able to return to full load, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse load:*

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- 1) *Powerhouse load shall be increased in steps;*
- 2) *Each step shall not exceed 50 percent of the flow passing Pit 4 Dam in excess of the required minimum stream flow for the Pit 4 Reach;*
- 3) *There shall be at least a 24-hour interval between steps; and*
- 4) *To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.*

*This protocol applies until the powerhouse reaches full load or the rate of stream flow passing Pit 4 Dam is less than 200 cfs above the required minimum stream flow for the Pit 4 Reach. If the powerhouse is not at full load at this point, the stream flow passing the Pit 4 Dam may be reduced to the required minimum stream flow.*

C. Operation Protocols for Pit 5 Dam, Pit 5 Reservoir, and Pit 5 Powerhouse

1. *As inflow to Pit 5 Reservoir increases, Pit 5 Powerhouse flows shall be ramped up to match inflow up to the full powerhouse flow.*
2. *As inflow to Pit 5 Reservoir exceeds the full flow of Pit 5 Powerhouse, the Pit 5 Dam spillway gates and/or minimum instream flow gates shall be operated to maintain an approximately constant water surface elevation of 2,040.5 feet (NGVD) (2,060 feet PG&E datum) at Pit 5 Reservoir.*
3. *If the Pit 5 Powerhouse is operating at less than full load during a spill event, at any time of the year, and is able to return to full load, the Licensee shall utilize the following protocol to not cause a rapid cessation of spill when increasing powerhouse load:*
  - a) *Powerhouse load shall be increased in steps;*
  - b) *Each step shall not exceed 50 percent of the stream flow passing Pit 5 Dam in excess of the required minimum stream flow for the Pit 5 Reach;*
  - c) *There shall be at least a 24-hour interval between steps; and*
  - d) *To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.*

*This protocol applies until the powerhouse reaches full load or the rate of stream flow passing Pit 5 Dam is less than 200 cfs above the required minimum stream flow for the Pit 5 Reach. If the powerhouse is not at full load at this point, the stream flow passing the Pit 5 Dam may be reduced to the required minimum stream flow.*

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**Condition 5: Freshet Flows**

Revise Condition 5 as follows:

5. *Freshet Flows*

*The Licensee shall make freshet flow releases into each of the three Project-affected reaches of the Pit River as described below. Project reaches shall be considered separately and independently when determining if a freshet flow is required. The Licensee shall not initiate a freshet flow in the Pit 4 Reach if mean daily water temperature at Licensee gage PH30 exceeds 11° C for two consecutive days in the two-week period prior to the scheduled initiation of the freshet flow. The temperature criteria for not initiating a freshet flow may be modified after consultation with the Deputy Director and other appropriate agencies, and with approval of the Deputy Director and the U.S. Forest Service, based on available information and monitoring of foothill yellow-legged frog breeding and egg deposition in the Pit River.*

*Licensee shall implement the following planning events and actions each year:*

- A. If, as of January 1 of each year, there has been no spill, as defined in item D below, in the previous 15 months into a given Project-affected river reach, the Licensee shall notify by January 30 the Deputy Director, other appropriate agencies, and interested parties that there is a potential need for a freshet flow release for that reach during the upcoming March.*
- B. If no spill has occurred per item A, the Licensee shall post, following the provisions in the Recreation Stream Flow Information condition, a notice prior to February 15 of a planned freshet flow for that reach beginning between March 1 and March 7, scheduled so that the peak flow occurs over a weekend to facilitate whitewater boating opportunities.*
- C. A freshet flow shall have the following characteristics: the duration of the event, including the flow increase, decrease and the peak, must be at least 21 days in length; the instantaneous peak flow magnitude must be at least 1,500 cfs; and there must be a two-day average flow of at least 1,500 cfs. After the peak, stream flow shall decrease in five steps of approximately equal magnitude and duration over the remaining days of the freshet period, ending at the winter required minimum stream flow for the reach. Ramping between each flow step shall be 0.5 foot/hour or less, as defined by the Ramping Rates condition.*
- D. For the purposes of this condition, spill is defined as a stream flow event at a Project dam during the 17 months prior to the March 1 freshet flow implementation date that meets all of the following characteristics: occurs between December 1 and May 31; has a cumulative volume of at least 25,000 acre-feet; has a duration of at least 21 consecutive days; and has at least two average daily flows exceeding 1,500 cfs. Spill may be made up of natural and released flows above base flow.*

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**Condition 6: Out-of-Season Spill Reduction**

Revise Condition 6 as follows:

6. *Out-of-Season Spill Reduction*

*The Licensee shall operate the Project in a manner that does not cause discretionary, out-of-season spill flows in excess of twice the required minimum stream flow at Pit 3 Dam, Pit 4 Dam, and Pit 5 Dam. An out-of-season spill is defined as a spill that occurs during the normally non-spill summer and fall period (April 16 – September 30). The Licensee shall take all reasonable controllable actions necessary to control out-of-season spill flows, which shall include, as a first priority, utilization of Project storage.*

*Discretionary spills are releases from the dams through any means (spillways, gates, or valves) that exceed twice the minimum instream flow for that month. These spills are those that the Licensee voluntarily undertakes, and do not include those caused by unit failures, natural events during periods of reduced diversion capacity (facility outages), or those caused by other factors beyond the Licensee's control.*

*In the event an out-of-season spill occurs, the Licensee shall take reasonable controllable actions to minimize the magnitude, duration, and potential adverse ecological impacts of such spill. Such actions shall include, utilizing upstream reservoir capacity, and to the extent practicable, ramping the spill flow up and down as described in the Ramping Rates condition. The Licensee shall develop and implement, within one year of license issuance, reasonable actions to mitigate for adverse ecological impacts in the event a discretionary out-of-season spill occurs. Licensee shall submit proposed mitigation measures for review and approval by the Deputy Director. The Licensee shall prepare, maintain, and on an annual basis provide to the Deputy Director a record of any out-of-season spills, identifying the affected reach, hourly discharge, the maximum flow magnitude, dates and duration, cause of spill, and mitigation provided. Licensee may incorporate this requirement as a component of the Recreation Streamflow Release Plan (Condition 8 and Mitigation Measure 8).*

**Condition 7: Ramping Rates**

Revise Condition 7 as follows:

7. *Ramping Rates*

*To prevent adverse effects of rapid changes in regulated stream flow that are inconsistent with the natural rate of change in stream flow, the Licensee shall follow the ramping rates specified below when making stream flow releases from Pit 3, Pit 4, and Pit 5 Dams unless a different ramping rate is specified in another condition.*

*A ramping rate is defined as the rate of change in stream stage height, up or down, over a time period, such as 0.5 foot/hour. The Licensee shall be deemed in compliance with the specified up and down ramping rate if at least 75 percent of the actual incremental changes in flow are less than or equal to the specified ramping rate, and all of the actual incremental changes in flow are less than 150 percent of the specified ramping rate.*

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*For the purposes of this condition, a spill event (excluding out-of-season spills defined in Condition 6) is defined as a flow period that lasts at least three consecutive days and has a three-day mean of more than 300 cfs above the required minimum stream flow (and a volume of at least 1,800 acre-feet). If a spill event does not meet this definition, ramping rates are not required.*

*Ramping Rate for Freshet Flow Releases:* *A freshet flow may be released in March of some years, and will consist of a 21-day flow event that is described in detail in the Freshet Flow Release condition. The ramping rate to reach the daily target values for freshet flows shall be 0.5 foot/hour or less, up and down.*

*Ramping Rate after Spills Influenced by Powerhouse Outages:* *As described in the Reservoir Operations condition, some spills may include, or be composed entirely of, flow that would otherwise be going through a powerhouse but is instead released as spill due to a powerhouse outage. If a powerhouse is operating at less than full load during a spill event, at any time of the year, and is able to return to full load, the Licensee shall utilize the following protocol to prevent a rapid cessation of spill when increasing powerhouse load:*

*Powerhouse load shall be increased in the following manner: (1) each step shall not exceed 50 percent of the stream flow passing the dam in excess of the required minimum stream flow for the reach; and (2) there shall be at least a 24-hour interval between steps.*

*To achieve each step the ramping rate for the downstream reach shall be 0.5 foot or less with two hours separating each ramping rate adjustment until the 24-hour step is reached.*

*There is no ramping rate when the spill is over 1,200 cfs.*

*Ramping Rate Before and After Out-of-Season Spills:* *If the Licensee anticipates that an out-of-season spill is imminent because the storage capacity of the affected reservoir will be exceeded, the Licensee shall make a good faith effort to initiate stream flow releases that ramp up to the expected spill flow in at least three steps. An out-of-season spill is defined as flow greater than twice the required minimum stream flow past Pit 3 Dam, Pit 4 Dam, or Pit 5 Dam during the normally non-spill summer and fall period, from April 16 to September 30.*

*The out-of-season spill, once below 1,200 cfs, shall be ramped down as follows: (1) if the spill was less than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot/hour; and (2) if the spill was longer than 24 hours in duration, the down ramp shall be at a rate of 0.5 foot or less with two hours separating each ramping rate adjustment so that the down ramp is more gradual.*

*Ramping Rate for Recreation Stream Flow Releases:* *The ramping rate up and down for recreation stream flow releases shall be 0.5 foot/hour or less. Both up and down ramping steps shall be separated by one hour until the specified recreation stream flow release (ramp up) or the required minimum stream flow (ramp down) is reached.*

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*Ramping Rate for Changes in Required Minimum Stream Flow: Because the magnitude of changes in required minimum stream flow is less than the change in stream flow associated with a 0.5-foot change in stage height, no ramping is required for these changes in stream flow.*