

## Settlement Agreement

### RECITALS

A. In 1952, the Federal Energy Regulatory Commission (“FERC”) licensed the Public Utility District No. 1 of Pend Oreille County, Washington (“PUD”) to construct and operate the Box Canyon Hydroelectric Project (“Project”). The Project is located on the Pend Oreille River in northeastern Washington and northwestern Idaho.

B. The Project occupies approximately 717 acres of federal lands. Specifically, the Project (1) inundates 493.03 acres of land within the Kalispel Indian Reservation (“Reservation”) along the Pend Oreille River (in the upper half of the 55-mile reservoir) which the United States holds in trust for the Kalispel Tribe of Indians and allottees (“Tribe”); and (2) occupies 190.25 acres within the Colville National Forest. The Project also occupies lands held by the Bureau of Land Management and U.S. Fish and Wildlife Service (“USFWS”).

C. The PUD applied to FERC for a new license in January 2000. The Tribe, the United States Department of the Interior (“Interior”), the United States Forest Service (“Forest Service”), the Washington Department of Fish and Wildlife, Washington Department of Ecology, the State of Idaho and other entities intervened. The PUD operated the Project pursuant to annual licenses from the time the 1952 license expired in January 2002 until July 11, 2005.

D. Pursuant to Federal Power Act (“FPA”) section 4(e), 16 U.S.C. § 797(e), Interior and the Forest Service submitted conditions to FERC to be included in the new license. Pursuant to FPA section 18, 16 U.S.C. § 811, Interior submitted fishway prescriptions to FERC to be included in the new license.

E. On July 11, 2005, FERC issued the PUD a new 50-year license (“License”) to operate the Project. FERC included Interior’s section 18 fishway prescriptions in their entirety. FERC modified Interior’s and the Forest Service’s section 4(e) conditions to limit their applicability to either Reservation lands or National Forest System lands located “within the Project boundary.”

F. In August 2005, the PUD, Ponderay Newsprint Company (“PNC”), Interior, the Forest Service and others sought rehearing of the License order before FERC. On November 17, 2006, FERC issued an order revising the License. Among other things, FERC included Interior’s and the Forest Service’s section 4(e) conditions and Interior’s section 18 fishway prescriptions without limitation or modification.

G. After FERC issued its November 17, 2006 order revising the License, the PUD and PNC petitioned for review of FERC’s License in the United States Court of Appeals for the District of Columbia Circuit (“Court of Appeals”) (Nos. 06-1387 and 06-1389). Interior, the Forest Service, and the Tribe intervened in the petition proceedings.

H. PUD and PNC also filed complaints in the United States District Court for the District of Columbia (“District Court”) (Nos. 06-365, 06-768). In their complaints, PUD and PNC asked the District Court to set aside a regulation promulgated by Interior that established that the trial-type hearings set forth in section 241 of the Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, did not apply to any hydropower proceedings for which a license had been issued as of November 7, 2005, which includes the Box Canyon proceeding at issue. The District Court stayed proceedings pending resolution of PUD’s and PNC’s petitions for review in the Court of Appeals.

I. PUD, PNC, Interior, the Forest Service, and the Tribe entered into mediation sponsored by the Court of Appeals. After the parties made significant progress towards a settlement, the Court of Appeals stayed proceedings on PUD’s and PNC’s petitions to allow the parties to pursue a final settlement agreement.

J. The Parties have negotiated this Settlement Agreement in good faith. In order to avoid the costs and uncertainty of further litigation, the Parties have agreed to the Terms and Conditions set forth below.

### **TERMS AND CONDITIONS**

It is hereby agreed:

#### **1. Definitions**

“FERC” shall mean the Federal Energy Regulatory Commission.

“PUD” shall mean the Public Utility District No. 1 of Pend Oreille County, Washington.

“PNC” shall mean the Ponderay Newsprint Company.

“Tribe” shall mean the Kalispel Tribe of Indians.

“Interior” shall mean the United States Department of the Interior.

“Forest Service” shall mean the United States Forest Service, part of the United States Department of Agriculture.

“Parties” shall mean the PUD, PNC, Interior, the Forest Service, and the Tribe.

“Project” shall mean the Box Canyon Hydroelectric Project, located on the Pend Oreille River in northeastern Washington and northwestern Idaho.

“License” shall mean the new license issued by FERC on July 11, 2005, to PUD to operate the Project.

“FPA” shall mean the Federal Power Act.

“Settlement Agreement” shall mean this Settlement Agreement.

“Revised Conditions and Prescriptions” shall mean the revised FPA section 4(e) conditions and section 18 prescriptions that are attached to this Settlement as Appendices A-D.

“Resource Managers” shall mean the U.S. Fish and Wildlife Service (USFWS), Bureau of Indian Affairs (BIA), Forest Service, Washington Department of Fish and Wildlife, and Tribe.

“Technical Committee” shall consist of the Licensee, BIA, USFWS, Forest Service, Washington Department of Fish and Wildlife and the Tribe, and shall operate pursuant to the procedures set forth in Condition 2 of Appendix A of FERC’s July 11, 2005 license order, except to the extent that the dispute resolution procedures of section 1.12 of Appendix A or section 1.7 of Appendix C are applicable.

“Licensee” shall mean Public Utility District No. 1 of Pend Oreille County, Washington (“PUD”).

## **2. Purpose and Effect of this Agreement**

The Parties have entered into this Agreement for the purpose of resolving all issues that have or could have been raised by the PUD or PNC before the Court of Appeals in docket nos. 06-1387 and 06-1389. As set forth below, the Parties will submit to FERC revised conditions (attached to this Settlement as Appendices A-D) as well as additional settlement provisions (attached to this Settlement as Appendix E) and intend that these revised conditions will replace the relevant portions of the existing license conditions in their entirety.

Except as expressly provided, or necessarily implied, herein, this Settlement Agreement shall not affect, or be deemed to be an amendment of, the License.

## **3. Revised Conditions and Prescriptions to be Submitted to FERC**

a. Interior will submit to FERC revised FPA section 4(e) License conditions, which are attached to this Settlement as Appendices A and D. These revised conditions shall replace conditions 6 and 13, respectively, set forth in Appendix A of the July 11, 2005 License order.

b. Interior will submit to FERC revised FPA section 18 fishway prescriptions, which are attached to this Settlement as Appendix C. These revised prescriptions shall replace the prescriptions set forth in Appendix C of the July 11, 2005 License order.

c. The Forest Service will submit to FERC revised FPA section 4(e) License conditions, which are attached to this Settlement as Appendix B. These revised conditions shall replace conditions 4, 6, 7 and 15 set forth in Appendix B of the July 11, 2005 License order.

d. The PUD shall request FERC to amend the License to substitute the Revised Conditions and Prescriptions submitted by Interior and Forest Service pursuant to subparagraphs a., b. and c as well as the additional settlement provisions set forth in Appendix E. The PUD shall also request FERC to make conforming revisions to the due dates in License article 401 to reflect the Revised Conditions and Prescriptions.

e. The Parties agree to work together in good faith to speed FERC's inclusion of the Revised Conditions and Prescriptions in the License. The Parties agree to provide promptly any necessary information to FERC, including but not limited to any information FERC needs to fulfill its obligations under the Endangered Species Act or the National Environmental Policy Act. The Parties further agree to ask FERC to expedite inclusion of the Revised Conditions and Prescriptions in the License.

#### **4. Settlement Agreement is Contingent on FERC Adoption of Revised Conditions and Prescriptions**

a. The Settlement Agreement is contingent on FERC's adoption of the Revised Conditions and Prescriptions without any modification that any Party reasonably considers to be material. If a Party considers a modification to be material, the Party must provide written notice to all other Parties within 20 days of FERC's adoption. If no Party provides timely written notice of a modification that the Party believes to be material, then this contingency is deemed satisfied.

b. The Parties will each have 20 days from the date of a written notification that a Party considers a modification to be material either to agree that the modification is material or to object that the modification is not material. A failure to object will be considered to be agreement that the modification is material. If all of the Parties agree that a modification is material, then subparagraphs c. and d. apply. If one or more Parties believe that the modification is not material, then the Parties agree to ask the mediator appointed by the Court of Appeals to assist the Parties in non-binding mediation of the issue of materiality, not to last more than 30 days. During the mediation process, the Parties may exercise their rights to file a timely request for rehearing with FERC seeking removal or amendment of the modification. If mediation is unsuccessful, the Parties reserve their rights to contest the modification before FERC and/or any other appropriate forum or tribunal.

c. If FERC modifies, limits, or otherwise alters the impact of the Revised Conditions and Prescriptions in a way that is determined to be material after following the procedures outlined in subparagraphs a. and b., including review in any other appropriate forum or tribunal, the Parties shall confer within 20 days after the date that a modification is deemed material pursuant to the procedures set forth in subparagraph b.

above. Unless all of the Parties agree to accept FERC's modification or all of the Parties agree to modify the Settlement Agreement, the Settlement Agreement shall be rendered void and unenforceable and shall not bar the Parties from resuming the litigation described in the Recitals above without any limitations resulting from this Settlement Agreement.

d. If FERC modifies, limits, or otherwise alters the impact of the Revised Conditions and Prescriptions in a way that is determined to be material after following the procedures outlined in subparagraphs a. and b., including review in any other appropriate forum or tribunal, the Parties agree to file a joint motion in the Court of Appeals to reset the briefing schedule within 14 days of entry of a final order affirming the FERC decision.

## **5. Incorporation of Revised Conditions and Prescriptions**

The Settlement Agreement incorporates the Revised Conditions and Prescriptions (attached as Appendices A-D) as if fully set forth herein. Accordingly, a violation of a provision of the Revised Conditions and Prescriptions will constitute a breach of the Settlement Agreement.

## **6. Parties Bound**

This Settlement Agreement is binding upon each of the Parties and their successors and assigns. In the event of a change in ownership of the Project and transfer of the License to the new owner, the PUD shall have no further obligation under the License or this Agreement. In the event of a voluntary change of ownership, the PUD agrees that the acceptance of an assignment of this Agreement by the new owner shall be a condition of the transaction. In the event of an involuntary change of ownership, the PUD shall offer to assign this Agreement to the new owner.

## **7. Dismissal of Petitions and Court Case**

a. If no Party provides written notice that the Party considers a modification to be material pursuant to paragraph 4 above, then within 30 days of FERC's issuance of an order amending the License that adopts the Revised Conditions and Prescriptions, PUD and PNC will move to dismiss with prejudice their petitions for review in the Court of Appeals (Nos. 06-1387 and 06-1389) and their complaints in the District Court (Nos. 06-365, 06-768).

b. If a Party provides written notice that the Party considers a modification to be material pursuant to paragraph 4 above but the Parties ultimately agree that the modification is not material pursuant to the procedures set forth in paragraph 4, then within 20 days of the Parties' resolution of the issue of materiality, PUD and PNC will move to dismiss with prejudice their petitions for review in the Court of Appeals (Nos. 06-1387 and 06-1389) and their complaints in the District Court (Nos. 06-365, 06-768).

c. If the Court of Appeals or District Court refuses to dismiss, then the Settlement Agreement is void and unenforceable and shall not bar the Parties from resuming the litigation described in the Recitals above without any limitations resulting from this Settlement Agreement.

## **8. Covenant Not to Sue or Challenge by the Parties**

a. PUD and PNC covenant neither to sue nor to bring any other claims or causes of action that challenge the Revised Conditions or Prescriptions.

b. PUD and PNC covenant neither to sue nor to bring any other claims or causes of action that challenge FERC's inclusion of the Revised Conditions or Prescriptions in the License.

c. The Tribe covenants neither to sue nor to bring any other claims or causes of action that seek to challenge, modify or add to the Revised Conditions or Prescriptions. The Tribe retains the right to participate in any proceedings where a federal agency exercises its authority to require changes to the license conditions and the PUD contests such changes.

d. The remedies of the PUD, PNC and the Tribe in the event of default or a dispute regarding the implementation of this Settlement Agreement shall be limited to an action to enforce the terms of this Settlement Agreement, including an action before FERC to enforce the terms of the License and any License terms modified as a result of the Settlement Agreement. The Tribe expressly waives any claim or assertion of sovereign immunity from an action to interpret or enforce any provision or rights granted in this Settlement Agreement.

## **9. No Third Party Rights**

Nothing in this Settlement Agreement shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Settlement Agreement.

## **10. Reservation of Authority**

Notwithstanding any other provision of this Settlement Agreement, the United States, Interior, and the Forest Service retain all authority and reserve all rights to take any and all actions authorized by law, including all relevant authorities pursuant to the FPA. In the event the United States, Interior or the Forest Service exercise a reservation of authority, the PUD and PNC reserve all rights as they may have at the time of the exercise of such reservation.

## **11. Parties to Bear Own Costs and Fees**

Each Party shall bear its own costs and fees relating to pursuing, litigating and settling the administrative and judicial proceedings relating to the Project, including any litigation expenses that post-date the signing of this Settlement Agreement.

**12. No Approval of Litigation Positions**

The Parties shall not construe this Settlement Agreement as approval of any Party's position in the litigation described in the Recitals above.

**13. Integration**

a. This Settlement Agreement constitutes the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. This Settlement Agreement supersedes any prior written or oral agreement.

b. The Settlement Agreement may be modified only in a writing signed by the Parties.

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The undersigned representatives of the Parties to this Settlement Agreement certify that they are authorized to enter into the terms and conditions of this Settlement Agreement and to execute and bind legally each Party to this document. This Settlement Agreement shall become effective when executed by the Parties or their respective counsel.

This Settlement Agreement may be signed in counterparts.

[signature block]

**APPENDIX A**  
**U. S Department of the Interior (DOI)**  
**Conditions for Habitat Restoration Pursuant to Section 4(e)**  
**of the Federal Power Act**

This section shall replace Department of the Interior (DOI) 4(e) Condition 6 in its entirety. Consistent with agreements made among the settling parties, it is recognized that: basin-wide restoration is not the sole responsibility of the Licensee; target fish densities described in Table 1 of DOI 4(e) Condition 6 have been dropped and will not be a success criterion for the Licensee; payments for fish densities in the Box Canyon Reservoir have been dropped; reservoir fish survey requirements have been dropped; the Trout Restoration Fund has been dropped and funds already deposited in an escrow account will be returned to the Licensee; and the Licensee has no specific maintenance fund obligation, but is required to ensure that restoration measures continue to achieve the success criteria specified herein over the license term.

**1. Trout Habitat Restoration Program:** The Trout Habitat Restoration Program (Program) requires restoration of a specific number of stream miles by the Licensee pursuant to the terms of this section and is administered by a Technical Committee composed of the Licensee, DOI (Bureau of Indian Affairs (BIA) and U.S. Fish and Wildlife Service (FWS)), U.S. Forest Service (USFS), Washington Department of Fish and Wildlife (WDFW) and the Kalispel Tribe (Tribe) which shall operate pursuant to the procedures set forth in Condition 2 of Appendix A of FERC's July 11, 2005 license order, except to the extent that the dispute resolution procedures of section 1.12 of this Appendix or section 1.7 of Appendix C to the Settlement Agreement are applicable. The Secretary of the Department of the Interior (Secretary, or his/her designee) shall be the final decision maker with respect to implementation of the Program, although approval by the Secretary for specific implementation actions is not required as long as there are no disputes among the parties. The Secretary may require modification to any implementation action at his or her discretion, which is necessary to achieve the Objectives of the Program and consistent with the Financial Planning obligations of the Licensee. All restoration measures implemented pursuant to this condition on National Forest System (NFS) lands will also require approval of the USFS.

1.1 Objective: The Licensee shall restore 164 miles of tributary habitat pursuant to the terms identified in this section. These restoration efforts shall be completed within 25 years of this agreement and shall be prioritized in the Calispell, Cee Cee Ah, Cedar, LeClerc, Indian, Mill, Ruby, and Tacoma creek watersheds. Restoration activities in Calispell Creek should be developed and implemented as soon as possible to coincide with future fish passage measures at the Calispell Creek pumping plant – although final prioritization of all restoration measures will be determined by the Technical Committee pursuant to section 1.2. If 164 miles of appropriate tributary habitat cannot be restored in these watersheds, restoration efforts may occur in other watersheds in the Project area with priority

given to suitable streams within Pend Oreille County.

1.2 Technical Committee: The Technical Committee will be the body responsible for directing and approving the Licensee's tributary restoration efforts and will be responsible for making a determination as to whether the Licensee's restoration measures are successful. If one or more of the Resource Managers elect to disengage from the Technical Committee, the remaining Resource Managers will perform all functions of the Technical Committee as necessary to ensure implementation of this condition. The Licensee shall cooperate, coordinate, and consult with the Technical Committee on all aspects of its tributary restoration program. If requested by the Technical Committee, the Licensee shall acquire appropriate facilitation services from a qualified facilitator agreeable to the Technical Committee. The Secretary will not be required to approve implementation decisions, plans or reports as long as there are no disputes within the Technical Committee. If a dispute occurs, the dispute resolution procedures set forth in section 1.12 shall apply.

1.3 Restoration Measures: The Licensee shall restore and maintain the "physical parameters" of 164 miles of stream habitat. Physical parameters will be established by the Technical Committee and will be project- and site-specific based on the type(s) of measure(s) implemented in a given reach and the reference stream used to develop the success criteria. Fish target densities will not be considered a physical parameter and will not be used as a success criterion for the Licensee.

1.3.1 "Restoration" of each stream segment will include a combination (some or all) of the following measures as determined necessary by the Technical Committee:

- Channel improvements (limited to geomorphologic improvements and barrier removal)
- Floodplain restoration
- Riparian corridor restoration
- Fencing
- Conservation easements and/or purchases
- Non-native fish removal (see section 1.3.2)
- Reintroduction of target fish species (see section 1.3.3)

1.3.2 Non-native fish removal will be a one-time-per-restoration measure event, unless otherwise agreed to by the Technical Committee. "One-time-per-restoration measure" may involve more than one treatment (i.e., several treatments over a specified period of time) as necessary to eradicate non-native species in a given stream reach and may include barrier construction to prevent re-colonization.

1.3.3 Reintroduction of target fish species will occur through accepted fish

supplementation practices, on a one-time-per-restoration measure event, to expedite colonization, unless otherwise agreed to by the Technical Committee. The details of these efforts shall be developed by the Licensee in close coordination with and subject to the approval of the Technical Committee.

The Licensee shall make available the fish species to be reintroduced, with the appropriate background and identity, in the appropriate life stage, and in the appropriate numbers, as determined necessary by the Technical Committee. As such, the Licensee will be responsible for the means to hold the fish to be reintroduced, although it may be possible for other parties or entities to participate in those efforts.

The Licensee shall be responsible for obtaining approvals from Federal and State agencies as necessary for these efforts (e.g., reintroduction or supplementation of bull trout will need to be consistent with current bull trout recovery plans and fully coordinated and approved by the FWS). However, if supplementation plans are not approved by Federal and State agencies after the Licensee has modified the plans as determined necessary by the Technical Committee (or as a result of dispute resolution), then reintroduction as a component of a specific measure will not be required of the Licensee.

- 1.4 General Surveys: The Licensee shall survey watersheds as needed for purposes of identifying potential restoration and reference sites and for prioritizing implementation of restoration measures. These general surveys are in addition to any specific surveys that may be necessary for developing, monitoring, and demonstrating the success of specific restoration measures (see sections 1.6 and 1.8). Plans and methodologies for general surveys shall be developed by the Licensee in close coordination with and subject to the approval of the Technical Committee. Data may exist that proves useful or sufficient for these efforts, however, where existing data is either unavailable, insufficient or dated (at least 8 years old or as determined dated by the Technical Committee), the Licensee shall conduct new surveys.
- 1.5 Planning: Restoration measure proposals will be submitted between September and January of each year and ranked by the Technical Committee by no later than February 28<sup>th</sup> of each year. Details of the ranking process, including specific factors will be determined by the Technical Committee. Except for the first year, implementation of the approved restoration measure will generally be concurrent with the selection of measures to be implemented in the following year. Once a restoration measure is ranked and selected by the Technical Committee, the Licensee will be responsible for complying with all Federal, State and Tribal environmental laws and regulations. The Federal Energy Regulatory Commission will be responsible for compliance with section 7 of the Endangered Species Act unless designated in writing to a non-federal representative for that purpose, or

unless another Federal entity is willing to take a lead role for that purpose.

This process will continue for the 25 year restoration period although the process may be modified by agreement of the Technical Committee to account for multi-year measures, for consistency with Financial Planning (see section 1.11), or to improve coordination among various restoration measures. If a comprehensive plan (see section 1.5.1) has been developed and approved by the Technical Committee, the frequency of these planning meetings may be modified consistent with the plan.

1.5.1 **Comprehensive Planning:** Ideally, the Licensee will, subject to coordination with and approval by the Technical Committee, develop a comprehensive plan for coordinating all 164 miles of restoration into a coherent basin-wide effort that results, over time, in continuous stream segments well suited to support all life stages of the target species. This comprehensive plan should be well coordinated with other restoration efforts underway and should consider all other appropriate plans developed for the Project area.

The comprehensive plan would facilitate future planning and proposal development and would reduce the need and frequency of annual planning and coordination meetings. It may also facilitate various regulatory approval processes by allowing programmatic review of the restoration measures. However, this plan is not solely the responsibility of the Licensee and it is not required to proceed with restoration efforts.

1.6 **Proposal Development:** The Licensee shall be responsible for creating and/or soliciting proposals for specific restoration measure (see section 1.6.1) and sharing those proposals with the Technical Committee by January of each year, anticipating implementation to begin during the spring of the following year. Proposals should be developed in cooperation with the Technical Committee to the extent possible, although ultimate responsibility for development (and implementation) rests with the Licensee. Any member of the Technical Committee may also propose specific restoration measures for Licensee funding and implementation under this Program or the Technical Committee may solicit recommendations for specific restoration measures from outside sources as they determine appropriate. The Technical Committee will determine which of the proposals should be implemented by the Licensee or their contractor as recommended by the Technical Committee.

1.6.1 Proposals shall identify specific actions and shall include specific goals (e.g., total stream miles to be restored for each individual restoration measure), objectives (e.g., success criteria, accepted procedures for developing the success criteria (e.g., Overton et al. 1997 or other appropriate methodology), identification of the properly functioning system (i.e., reference stream or reach) used to develop the success criteria

(see section 1.6.1.1)), schedules for completion (including pertinent milestones), cost estimates, anticipated restoration techniques, maintenance requirements, and monitoring plans and methodologies (see section 1.6.1.2). If the proposal includes actions by other cooperating entities, the Licensee's contribution and expected proportional benefits (including stream miles) shall be specifically identified. All restoration measures will be designed to withstand a minimum 100 year flood event.

1.6.1.1 To ensure the highest level of comparability and to the greatest extent possible, properly functioning systems (e.g., floodplains) to be used as reference sites will be selected in the same tributary where the restoration measure will be implemented. If, however, a properly functioning system cannot be identified in that tributary, it may be selected in a similar tributary within the Box Canyon sub-basin. If a properly functioning system cannot be identified in the Box Canyon sub-basin, a reference site in another sub-basin – with the same physical parameters as the restoration site – would be acceptable. Properly functioning systems are not necessarily pristine, but rather typical examples of functioning systems found in comparable geographic areas. In order to determine an appropriate range of variability, several reference sites may be identified.

1.6.1.2 Evaluations and surveys required of the Licensee shall be limited to those necessary for determining the success of the restoration measure and for ensuring that success criteria are maintained over the license term. The information acquired through these evaluations and surveys will be used to determine the efficacy of each restoration measure implemented by the Licensee.

1.6.2 Within 90 days of submittal, the Technical Committee will determine whether to: 1) approve a proposal as submitted, 2) require or provide modifications to a proposal, 3) table a proposal for a subsequent year, or 4) deny a proposal. If the Technical Committee requires modifications to a proposal, a reasonable amount of time will be allowed to address the modifications. If no decision is made within these time periods, the proposal will be considered tabled until resolved through dispute resolution or required by the Secretary.

1.7 Implementation: Once a proposal is approved, the Licensee shall implement the restoration measures pursuant to the included schedule. Selection and approval of contractors for all restoration measures will be in accordance with Appendix A, Condition 2(D) of the License. However, the Kalispel Tribe will be considered for all appropriate contracts given that it is uniquely suited to perform restoration

work in the tributaries as a result of its previous experience, available resources, and ability to bring matching funds to the restoration efforts.

1.7.1 The Licensee shall be responsible for restoring 164 miles of tributary habitat within 25 years. This restoration shall occur consistent with parameters identified in Financial Planning (see section 1.11) – that is, 40% or 66 miles of habitat should be restored within the first 10-year period, 40% or 66 miles of habitat should be restored within the second 10-year period, and 20% or 32 stream miles of habitat should be restored within the remaining 5-year period. The Licensee shall restore 164 miles of tributary habitat on this schedule to ensure steady progress towards the 164 mile requirement by year 25. The Secretary may require additional restoration measures to achieve 164 miles of restoration within 25 years if steady progress is not occurring and the Licensee has not spent the allotted funds on tributary restoration as required by this condition. If at anytime during this process, the Technical Committee and/or the Secretary determine that the Licensee has achieved 164 miles of restoration, no additional implementation expenses will be incurred from that point on (although the requirements of sections 1.8 through 1.10 will still be required of the Licensee). The Secretary retains authority to require additional restoration measures and funding by the Licensee, if at the end of the 25 year implementation period, 164 miles of restoration has not been achieved.

1.7.2 If, during the term of the license, any improvements such as culverts or bridges are placed on NSF lands, such improvements shall become the property of the United States.

1.8 Measuring Success: The success criteria included in each approved restoration measure will be based on the measurable parameters of properly functioning systems within specific reference stream reaches (see section 1.6.1.1), or as determined appropriate by the Technical Committee. A specific restoration measure will be considered completed when annual stream monitoring conducted by the Licensee (or by a suitable contractor) demonstrates a score of 85% or greater of the success criteria, averaged over three years.

1.8.1 If as a result of annual stream monitoring (see section 1.9) a score of at least 50% of the reference site is not achieved, the Technical Committee shall require that the restoration measure either be redesigned and modified by the Licensee or abandoned. If a measure is abandoned, all stream miles related to the abandoned measure shall be replaced by the Licensee through implementation of another measure developed pursuant to this condition.

1.8.2 If as a result of annual stream monitoring (see section 1.9) a restoration measure demonstrates a score of between 50% and 85% of the reference

site, the Licensee shall implement improvements to the restoration measure at least annually or as determined necessary by the Technical Committee, in an attempt to achieve success (i.e., 85% or greater of the reference site). If, after a reasonable period of time (i.e., several years), the restoration measure continues to be unsuccessful, the Technical Committee shall require that it either be redesigned and modified by the Licensee or abandoned. If a measure is abandoned, all stream miles related to the abandoned measure shall be replaced by the Licensee through implementation of another measure developed pursuant to this condition.

- 1.9 Long-Term Monitoring: Once a restoration measure has been completed (see section 1.8), the Licensee shall reevaluate the measure every eight years for the term of the license to ensure continued compliance with the success criteria.
  - 1.9.1 If a restoration measure falls below success levels as determined through 8-year compliance monitoring (see section 1.8), the Licensee shall immediately develop a plan for repairs, for approval by the Technical Committee, to correct the deficiencies. The Licensee shall begin implementing these repairs within 30-days of approval or as determined appropriate by the Technical Committee. Subsequent monitoring will occur pursuant to section 1.8.
- 1.10 Maintenance: The Licensee shall conduct maintenance efforts pursuant to the approved restoration measure (see section 1.6). The Licensee shall also routinely visit each site (at least annually, as well as following significant weather events, or as reasonably required by the Technical Committee) to ensure no substantive adverse impacts have occurred at the restoration site. Formal reports will not be required as a result of these routine visits, although brief written updates shall be provided by the Licensee to the Technical Committee.
  - 1.10.1 If a restoration measure is damaged by floods at or below the 100 year event (as determined by the U.S. Geological Survey), the Licensee shall immediately develop a plan for repairs, for approval by the Technical Committee, to correct the damages. The Licensee shall begin implementing these repairs within 30-days of approval or as determined appropriate by the Technical Committee. Subsequent monitoring will occur pursuant to section 1.8, or as determined appropriate by the Technical Committee. The PUD will not be required to restore damages from events above this level.
- 1.11 Financial Planning: Spending by the Licensee over the first 10 years shall be limited to \$3.7 million, and the entire \$3.7 million shall be available within 30 days of the later of the dismissal of the petitions for review by the Court of Appeals and the dismissal of the complaints by the District Court. The Licensee shall provide an additional \$3.7 million for the second 10-year term, available at

year 10, and an additional \$1.85 million for the remaining 5-year term, available at year 20, for a total of \$9.25 million over 25 years. All amounts specified herein will be adjusted at the time of payment to current dollars using the escalator set forth in Appendix E of the Settlement Agreement. The Licensee will not be required to provide funds until the funds are needed (i.e., until the Technical Committee has approved or the Secretary requires implementation of a specific restoration measure). Spending limitations apply only to the implementation of the tributary restoration measures; reasonable costs for plan preparation, State and Federal environmental analyses, permitting, monitoring, maintenance, facilitation and dispute resolution services shall be additional expenses to the Licensee.

- 1.12 Dispute Resolution: If the members of the Technical Committee cannot agree on which stream segments should be restored, restoration measures, success criteria, reference streams, whether restoration work is adequate or not, whether steady progress is being made, or whether additional payments after the first 25 years are needed, any member of the Technical Committee can request dispute resolution pursuant to the following procedures. For the purpose of resolving issues related to these specific topics, the procedures set forth below shall supercede the dispute resolution procedures set forth in Appendix A, Condition 2(I) of the License. These procedures include: (1) an opportunity for informal dispute resolution; (2) mediation; and (3) policy-level review and resolution. The Secretary shall be the final decision maker for all disputes related to the implementation of the trout habitat restoration program or fishway measures.

#### 1.12.1 Informal Dispute Resolution

The Technical Committee shall strive to achieve consensus among its members. If consensus on an issue cannot be achieved because one or more members do not agree, any member of the Technical Committee may, in writing, request dispute resolution among the members of the Technical Committee. Upon receipt of a written request, the Licensee shall initiate good faith discussions among the members of the Technical Committee for a period not to exceed 30 days.

#### 1.12.2 Mediation

If the dispute is not resolved within 30 days after the receipt of a written request for dispute resolution, the disputing members of the Technical Committee may request the services of a neutral mediator. The Licensee shall arrange for the services of such mediator, either by employing a neutral third party or requesting the assistance of an ADR expert from one of the Federal agencies or FERC. The selected mediator must be agreed upon by the disputing members of the Technical Committee and must be available within a reasonable period of time. The mediator shall mediate the dispute for a period not to exceed 45 days from the date that his or her services were requested. In facilitating resolution of the dispute, the mediator may convene meetings or conference calls among the members of the Technical Committee and/or their immediate supervisors.

### 1.12.3 Policy Level Review and Resolution

If the dispute is not resolved within 45 days after the request for mediation services, the Licensee shall convene a meeting of policy-level officials representing the FWS, BIA, Licensee and, if applicable, the entity raising the dispute. Other members of the Technical Committee with a strong interest in the outcome of the dispute may also send a policy-level official to this meeting. Such meeting shall occur within 60 days after the request for mediation services. The FWS and the BIA shall each determine the appropriate regional-level officials to represent their respective bureaus at the meeting. At the meeting, all participants will have an opportunity to discuss their views regarding the dispute and provide documentation in support of those views. Within 15 days of the meeting, the regional-level officials representing the FWS and BIA shall confer to consider the issue and recommend resolution to their Regional Directors. The Secretary, through the Regional Directors of the FWS and BIA, shall make a final determination as to the outcome of the dispute and shall notify the appropriate entities within 30 days of the meeting of policy-level officials. The Secretary's final determination will be informed by the results of the dispute resolution process.

### 1.12.4 Habitat Restoration Measures on USFS Lands

A final determination as to the outcome of any disputes regarding implementation of habitat restoration measures on NFS lands will also require the approval of the USFS. For such disputes, the meeting required by section 1.12.3 shall also include a policy-level official representing the USFS. In addition, any final determination made by the Secretary of the Interior through the Regional Directors of the FWS and BIA shall require the concurrence of the Secretary of Agriculture or his/her designee.

1.13 **Reporting:** The Licensee shall provide updates on the restoration program's status on an annual basis consistent with Appendix A, Condition 1 of the License. Information shall be provided in tabular form and shall identify: 1) restoration measures proposed, underway, and completed; 2) location of restoration measures, denoting whether the measure is or will be situated on NFS lands; 3) the associated stream miles, anticipated completion dates, and anticipated monitoring dates; 4) determination of success; and 5) associated costs for each restoration measure identified. A concise written summary may also be included if necessary to identify substantive ongoing issues, recommended changes to the program, or other pertinent information.

**APPENDIX B**  
**USDA Forest Service**  
**Conditions Pursuant to Section 4(e) of the Federal Power Act**

Forest Service Condition No. 4 (Project Boundary) and Condition No. 15 (Fish Passage) in Appendix C to the License are hereby withdrawn.

In Appendix C to the License Forest Service Condition No. 7 (Recreation Management) provided the Licensee with the option to perform operation, maintenance, and replacement activities at select Forest Service recreation sites or make annual contributions of funds for those activities. The Licensee has chosen to make annual contributions. This necessitates changes to both Forest Service Conditions Nos. 6 and 7.

Forest Service Conditions Nos. 6 and 7 in Appendix C to the License are hereby replaced by the following:

**Condition No. 6 – Historic and Archaeological Properties**

In addition to complying with all federal and state cultural resource protection laws, the Licensee shall on National Forest System lands:

1. Within 1 year of license issuance prepare a Heritage Properties Management Plan (HPMP) in consultation with and approved by the USDA Forest Service and file the plan with the Commission. The Licensee shall implement the plan for all actions on National Forest System lands which shall require, at a minimum, that the Licensee:
2. Within 1 year of license issuance, perform formal determinations of effects from continued project operations on all eligible historic properties located on National Forest System lands, and submit determinations of effect to the USDA Forest Service and Washington State SHPO for review and concurrence.
3. Within 3 years of license issuance, provide for the stabilization, protection, restoration, and data recovery or mitigation of currently known damage and future damage to eligible historic properties on National Forest System lands as identified in the APE. These sites include, but are not limited to, 45PO149, 45PO150, 45PO185, 45PO491, and CNF-517. Mitigation shall meet USDA Forest Service standards, and conservation archaeology shall be applied whenever possible. The HPMP shall require that all proposed mitigation work shall be reviewed and approved by the USDA Forest Service.
4. Within 2 years of license issuance, implement the schedule for data recovery of known eligible historic properties, which will be part of the HPMP.
5. Within 7 years of license issuance, provide for the nomination of eligible historic properties to the National Register of Historic Places. Nomination may be

accomplished through inclusion of Colville National Forest eligible historic properties within a larger Historic District encompassing the entire Project boundary.

6. Provide for curation of materials recovered from eligible historic properties located within the Area of Potential Effect (APE) that meets the curation standards for artifacts recovered from historic properties as defined in 36 CFR 79.
7. Provide for curation of materials previously recovered from 45PO149 and 45PO150, including materials currently located at Washington State University and materials located at the Colville National Forest.
8. Provide for public outreach and interpretation as required by the Archaeological Resources Protection Act. Within 3 years of license issuance, in consultation with and approved by the USDA Forest Service, the Licensee shall complete an Interpretation and Education (I&E) Plan that will include, at a minimum, designs and an implementation schedule for the Licensee's new interpretive displays, brochures and public outreach and interpretation which shall begin within 5 years of license issuance and continue for the term of the license. The Licensee shall file the I&E Plan with the Commission and implement the plan.
9. Provide for the development and implementation of a monitoring program that shall include annual monitoring of known historic properties (both eligible and not eligible). Annual monitoring shall consist of, at a minimum, visiting each eligible historic property to ascertain efficacy of mitigations and/or possible effects to eligible properties, and to evaluate non-eligible historic properties to determine if conditions indicate a need for eligibility re-evaluation. Historic properties identified as looted shall require monitoring on intervals that shall be determined between the Licensee and the USDA Forest Service on a site-specific basis.

The monitoring program shall provide for a process, at an interval of no greater than 5 years, to determine the efficacy of mitigation measures and treatment plans. These evaluations shall be included in the subsequent annual report.

The monitoring program shall also provide for coordination with the Erosion Monitoring Plan and the Erosion Control Prevention and Remediation Plan in the development and implementation of provisions for erosion monitoring of historic properties.

10. Provide a schedule for completing all actions required in the HPMP.
11. Provide for the development and implementation of a process, which ensures protection of, and resolves any adverse effects upon, historic properties that may be discovered during the life of the license.

12. Provide that undertakings in response to other USDA Forest Service terms and conditions (Resource Coordination and Monitoring Implementation Plan) which affect or may affect eligible historic properties on National Forest System lands be implemented in a way that addresses the undertaking in an interdisciplinary manner and insures compliance with NHPA Section 106.
13. Provide development and implementation standards and oversight protocol.
14. Provide for designation of a HPMP coordinator.
15. Provide for development and implementation of a method and protocol for dispute resolution.
16. Provide for pre-disturbance inventories in areas slated for ground disturbance in the APE.
17. Provide for periodic review and/or revision of the HPMP that addresses, at an interval of no greater than every 5 years:
  - Changes in technology over time,
  - New knowledge about historic property conditions or effects, or
  - Changes in site eligibility as defined by regulation.
18. Provide an annual report that describes the progress of mitigation measures and treatment plans, records the findings of historic properties monitoring, and assesses the effectiveness of the HPMP. The annual report shall also address and include all information that is pertinent to each part of the HPMP that is implemented within that reporting period.
19. Provide a process for managing human remains discoveries, which shall insure that the USDA Forest Service be immediately informed of the discovery of any human remains, funerary items, sacred objects or objects of cultural patrimony, as defined in Native American Graves Protection and Repatriation Act (NAGPRA) and implementing regulations (43 CFR 10), discovered on National Forest System lands within the APE.
20. Provide for confidentiality of the nature and location of historic properties as required by ARPA.
21. Provide for coordination with the Erosion Monitoring Plan and the Erosion Control Prevention and Remediation Plan in the development and implementation of provisions for these Plans as they may affect historic properties. Monitoring shall include all historic properties, regardless of their eligibility.

## **Condition No. 7 – Recreation Management Plan**

Within one year of license issuance, the Licensee shall develop a Recreation Resource Management Plan (RRMP) which includes National Forest System lands and facilities within or adjacent to the Project. The RRMP shall be developed in consultation with and approved by the USDA Forest Service and filed with the Commission. The Licensee shall implement the RRMP and update it every six years in conjunction with filing the Commission's Form 80.

The RRMP shall include an annual implementation schedule, consultation and approval procedures, and shall require the Licensee to complete the following activities:

1. Within six years of license issuance, provide for the rehabilitation of disturbed areas between County Road 9325 and the reservoir while leaving pull-off parking for at least 5 vehicles at the old Ruby Ferry Landing area (T35N, R44E, Section 19) and the area north and adjacent to the Panhandle Campground (T35N, R44E, Sections 20 and 29).
2. For the purposes of contributing to the operation and maintenance of Project-related facilities on NFS lands, within one year of license issuance, the Licensee shall, through annual payments, contribute to the cost of operating, maintaining and replacing existing overnight, day use, and heritage facilities at Edgewater, Panhandle and Pioneer Park. The Licensee shall provide \$80,000.00 annually to the USDA Forest Service, adjusted for inflation, for the term of the new license and any annual licenses for the protection, mitigation or enhancement of recreation facilities impacted by the Project. Contributions shall be made through a collection agreement as outlined in USDA Forest Service License Condition No. 2. Funds provided by the Licensee will be made available to the USDA Forest Service by the beginning of the federal fiscal year (October 1) and remain available to the USDA Forest Service until expended. Adjustments for inflation will be calculated annually from the base period of 2007 to the time of payment and will be based on the Consumer Price Index (CPI-U) for the previous year (See Appendix E of Settlement Agreement).
3. The Licensee shall provide for future Project-related recreation needs and demands on National Forest System lands as follows:
  - a. Within one year of license issuance, develop and implement a monitoring program for evaluating recreation use at National Forest facilities, recreation user preferences and trends within the Project area. This monitoring program will incorporate results from USDA Forest Service annual site visitation records and the National Visitor Use Monitoring Project (NVUM) (found at [www.fs.fed.us/recreation](http://www.fs.fed.us/recreation)).
  - b. Provide for management strategies, facilities, and/or programs, as determined by the USDA Forest Service, to address impacts to National Forest System lands when monitoring required by 3(a) shows that average use levels over a 3-year

period at any individual National Forest facility listed in Section 2 above exceed 40 % of the capacity during the Managed Season of Use and 90% of the capacity during the Peak Use period (weekends during the July 1 to Labor Day period and intense-use holidays).

All capital improvements and activities on National Forest System lands are subject to site specific planning in accordance with USDA Forest Service License Condition No. 2.

**APPENDIX C**  
**U. S Department of the Interior (DOI)**  
**Prescriptions for Fishways Pursuant to Section 18**  
**of the Federal Power Act**

**1.0 Prescription for Fishways<sup>1</sup>**

Pursuant to Section 18 of the Federal Power Act (16 U.S.C. 811), the Secretary of the Interior (Secretary) hereby prescribes any Federal Energy Regulatory Commission (FERC) issued license with the construction, operation, and maintenance of fish passage facilities and measures at the Box Canyon Hydroelectric Project No. 2042-013, including Box Canyon Dam (BCD) and the Calispell Creek Pumping Plant (CCPP), as follows:

**1.1 General Prescriptions for Fish Passage Facilities and Measures at Box Canyon Dam**

The following general prescriptions apply to construction, operation, and maintenance of upstream and downstream fish passage facilities in the Pend Oreille River at Box Canyon Dam (BCD), and are prescribed to help ensure their effectiveness pursuant to section 1701 (b), of the 1992 National Energy Policy Act (P.L. 102-486, Title XVIII, 106 Stat. 3008):

- A. The Secretary retains the authority to require modifications to these fish passage facilities and measures at any time during the term of the license (including the installation of volitional fish passage facilities) if based on effectiveness and monitoring evaluations, these fish passage facilities do not provide “safe, timely and effective” fish passage as defined in section 1.2.1.
- B. The Secretary retains the right to review and approve all documents (e.g., plans specifications, measures, study designs, reports) identified in this prescription prior to construction and implementation of any required measure. To facilitate this review and approval process, correspondence between the Secretary and the Licensee will occur through the U.S. Fish and Wildlife Service (USFWS). All actions identified in this prescription requiring approval should be therefore sent to:

Project Leader  
Upper Columbia Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
11103 E. Montgomery Drive  
Spokane, WA 99206

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<sup>1</sup> This Prescription for Fishways replaces in its entirety the Prescription for Fishways filed with the Federal Energy Regulatory Commission on May 20, 2004.

Correspondence made by USFWS on behalf of the Secretary will occur following review and approval by all relevant DOI component bureaus, including the Bureau of Indian Affairs (BIA). The Secretary remains the final arbitrator in case of dispute.

- C. The Licensee shall provide safe, timely and effective fish passage facilities and measures at BCD, consistent with hydropower operations as approved by the Federal Energy Regulatory Commission (Commission) as needed to accommodate upstream and downstream passage for bull trout (*Salvelinus confluentus*), westslope cutthroat trout (*Oncorhynchus clarki lewisi*), and mountain whitefish (*Prosopium williamsoni*), collectively; “target fish species.”
- D. The Licensee shall maintain all fish passage facilities in proper working order and shall ensure that all fish passage facilities are clear of trash, sediment, logs, debris, and other material that would hinder fish passage. Anticipated maintenance shall be performed in sufficient time before a migratory period such that the fish passage facilities can be tested and inspected and will operate effectively prior to and during migratory periods.
- E. Upon request (either written or verbal), the Licensee shall provide designated DOI representatives, access to the Box Canyon Hydroelectric Project, and to pertinent Project records for the purpose of inspecting the fish passage facilities to determine compliance with these conditions for the fishway.
- F. *Dispute Resolution*: This Prescription provides the Licensee with the means to initiate Dispute Resolution under certain circumstances when specific modifications to the fishways are required. These circumstances are stipulated in sections 1.2.1.10, 1.3.11 and 1.5.1.9 of this prescription, and the procedures for resolving disputes are set forth at section 1.7 of this prescription.

## **1.2 Specific Measures Prescribed for Upstream Fish Passage Facilities at Box Canyon Dam (BCD)**

The following specific measures are prescribed for construction, operation and maintenance of upstream fishway(s) at BCD to provide effective (safe and timely) passage of juvenile, sub-adult and adult target fish species  $\geq 4$  inches ( $\sim 100$ mm) in total length.

### **1.2.1 BCD Upstream Trap and Haul-Type Fishway**

The upstream trap and haul-type fishway will require a fixed entrance(s) in the BCD tailrace and a release location(s) at least one mile upstream of the BCD spillway. This fishway will satisfy the upstream fish passage requirement once it achieves, and as long

as it maintains safe, timely, and effective passage for juvenile, sub-adult and adult target fish species  $\geq 4$  inches (~100mm) in total length.<sup>2</sup>

### **1.2.1.1 BCD Upstream Trap and Haul-Type Fishway – Timeline**

The upstream trap and haul fishway shall be operational by July 2018, or thirteen (13) years after license issuance (July 11, 2005). Therefore, to meet the designated operational start-up date (July 2018) of the upstream fishway, the Licensee shall begin conceptual design investigations and planning of the upstream trap and haul fishway no later than July 2014, as described in the following sections.

### **1.2.1.2 BCD Upstream Trap and Haul Fishway – Conceptual Design Investigations**

Within nine (9) years after license issuance and no later than July 2014, the Licensee shall, at its own expense and in consultation with the USFWS, BIA, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe (referred to hereafter as “Resource Managers”), develop and submit for review and approval by the Secretary, plans for completing design investigations to collect site-specific biological and engineering information required to site, design, and install the trap-and-haul fishway(s) at BCD. The Conceptual Design Plan shall require the completion of site-specific design investigations to determine, among other design details:

- A. The design range for the Pend Oreille River such that the fishway(s) is/are operational during the full range of flows and water surface elevations where the Licensee maintains operational control at BCD. Design and operation, for periods when the Pend Oreille River exceeds water quality criteria for temperature and Total Dissolved Gas (TDG), shall be consistent with the water quality certification issued by the Washington Department of Ecology under section 401 of the Clean Water Act (33 U.S.C. § 1341);
- B. Site-specific hydraulic conditions in the tailrace area of BCD, under all operating scenarios;
- C. Testing, using a model of the BCD auxiliary spillway, powerhouse, and tailrace area to insure proper siting of upstream fish passage facilities to accommodate upstream fish passage, including a fixed permanent entrance(s).

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<sup>2</sup> The goal of achieving safe, timely, and effective fish passage has its roots in the fishway definition provided by Congress in section 1701(b) of the Energy Policy Act of 1992 (Pub. L. 102-486): “*Safe and timely . . . upstream and downstream passage of fish . . . to maintain all life stages.*” In general, safe, timely, and effective fish passage is achieved when it is documented through effectiveness evaluations and monitoring, that fish enter, move through, and exit the fishway without serious injury, mortality, or delay. The Secretary retains the authority to require modifications to this system (including the installation of volitional fish passage facilities) if based on effectiveness evaluations and monitoring, it is determined that the upstream trap and haul fishway does not provide safe, timely and effective passage for the target species.

- D. Information on swimming performance, behavior, and migratory pattern of target fish species  $\geq 4$  inches ( $\sim 100\text{mm}$ ) in total length downstream of the dam sufficient to determine the proper siting of the permanent entrance point(s) and release location(s)<sup>3</sup> for fish collected in trap-and-haul fishway(s), under all operating scenarios and related environmental cues, including but not limited to temperature, TDG, water velocity and lighting;
- E. Structures, devices and measures to allow adjustment of the fixed (permanent) fishway entrance(s) elevation(s) and attraction flows as necessary to effectively attract target fish species into the upstream fishway when target fish species are present. The upstream fishway will be designed to include an attractant flow between 5% and 10% of the high fish passage design flow.<sup>4</sup> The 5% to 10% attractant flow is cumulative for one or more entrances included in the upstream fishway design. Any given entrance will not exceed 1000 cfs as an attractant flow;
- F. Structures, devices, and measures to allow adjustment of water flow, water velocity and water surface elevations within the upstream fish facilities as needed to effectively convey the target fish into the fish trapping device;
- G. BCD hydroelectric operations, to evaluate the influences of turbine discharge, turbine sequencing (first on, last off), auxiliary spillway, and spillway operations on the tailrace environment and to avoid masking of attraction flows for fish moving into the fishway entrance; and
- H. Provisions for counting and evaluating fish passing through the upstream fish passage facilities.

### **1.2.1.3 BCD Upstream Trap and Haul Fishway – Final Design Plans and Specifications**

Within twenty-four (24) months after notification by the USFWS that the Conceptual Design Investigations have been approved (see section 1.2.1.2, above), the Licensee shall submit for review by the Resource Managers and approval by the Secretary results of all trap-and-haul design investigations and design plans and specifications for the trap-and-haul fishway(s) at BCD. The upstream trap and haul fishway shall be operational during

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<sup>3</sup> The preliminary release point for target fish captured at the upstream trap and haul facility at BCD shall be located at least as far upstream as the confluence of Cedar Creek (at Ione, Washington) with the Pend Oreille River to avoid the risk of involuntary fallback of migrating fish at BCD.

<sup>4</sup> According to National Marine Fisheries Service (NMFS) fishway criteria (section 4.3), high fish passage design flow is defined as the mean daily average stream discharge that is exceeded 5% of the time during periods when migrating fish are usually (historically) present at the site as determined by a flow-duration curve summarizing at least the previous 25 years of daily discharges, or by an appropriate artificial streamflow duration record if discharge records are not available. This is the highest stream discharge for which migrants are expected to be present, migrating, and dependent on the proposed facility for safe passage.

the time frame recommended by the Resource Managers and approved by the Secretary, based on the anticipated presence of target fish species in the in the Pend Oreille River.

#### **1.2.1.4 BCD Upstream Trap and Haul Fishway – Operation and Maintenance Plan**

Within twenty-four (24) months after notification by the USFWS that the Conceptual Design Investigations have been approved (see section 1.2.1.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary an Operation and Maintenance Plan for the trap-and-haul fishway(s) describing anticipated operations, maintenance tasks, schedules, inspections, contingencies and emergency operating measures (including notifying Resource Managers of fish delay, injury and/or mortality as a result of daily observations). A lead technician designated by the Licensee shall be on site during all times when fish are being handled or loaded to help ensure maximum fish safety. Either cumulative experience and/or training of this technician shall be required to assure full understanding of direct and delayed mortality potential relating to stress and handling of fish (NMFS 1995a, 1995b).

Some loss of fish is expected to occur during the reasonable and prudent operation of the trap-and-haul fishway. If inherent defects in the system prevent the fishway from providing safe, timely and effective downstream passage, then the Secretary may require that the fishway be modified or replaced, as appropriate.

#### **1.2.1.5 BCD Upstream Trap and Haul Fishway – Monitoring and Reporting Plan**

Within twenty-four (24) months after notification by the USFWS that the Conceptual Design Investigations have been approved (see section 1.2.1.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers develop and submit for review and approval of the Secretary a plan for monitoring the trap-and-haul fishway at BCD. The monitoring plan shall require the Licensee to submit an annual monitoring report to the Resource Managers identified herein and shall include, at a minimum, the following information:

- A. The number of fish, by species, size, age class, and date observed at the trap-and-haul fishway collection point and transported upstream;
- B. The number of hours and days the trap-and-haul fishway was in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;
- C. A record of the daily observations at BCD conducted by a qualified fish biologist (approved by the Resource Managers), of the physical condition of fish using the trap-and-haul fishway, including their transportation to a designated release point upstream from BCD. Such observations shall include, but will would not be limited to, fish delay, injury, descaling,

disease and gas bubble trauma. The Licensee shall report any observed fish delay, injury, and/or mortality to the Resource Managers within twenty-four (24) hours and shall immediately implement appropriate corrective measures consistent with the Operations and Maintenance Plan (see section 1.2.1.4, above). In addition, a random sub-sample of fish will be externally examined for evidence of gas bubble trauma (GBT) using methods based on those most currently published by the Northwest Power and Conservation Council. A percentage of these fish will be killed and necropsied for internal evidence of GBT using accepted methods based on current fishery practices. The total percentage of fish examined will be determined by the Resource Managers and may be subject to change based on the results of examinations, or alterations in the design or placement of the trap and haul facility. Federally listed threatened or endangered species will not be used for these tests; and

- D. A continuous record<sup>5</sup> of TDG levels, water temperature, river flow and velocity, both within the fishway and at or near the fishway entrance(s), as required to accurately monitor the effectiveness of the trap-and-haul fishway.

#### **1.2.1.6 BCD Upstream Trap and Haul Fishway – Post-Installation Effectiveness Evaluation Plan**

Within twenty-four (24) months after notification by the USFWS that the Conceptual Design Investigations have been approved (see section 1.2.1.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary a plan for post-installation evaluations of the trap-and-haul fishway. The plan shall provide for documentation of the upstream movement of the target fish species, as determined by radio telemetry or other means of accurately tracking target fish movement from the approved target fish release point within Box Canyon Reservoir. This plan shall include methods for documenting fish passage efficiency, passage time, mortality, injury, and fallback rates for a representative range of operating scenarios, flow releases, and spill patterns from below BCD tailrace to the approved fish release point.

#### **1.2.1.7 BCD Upstream Trap and Haul Fishway – Installation and Operation**

Within eighteen (18) months after notification by the USFWS that the Licensee's Final Design Plans and Specifications have been approved (see section 1.2.1.3, above), the Licensee shall, at its own expense, complete the installation, and begin the operation of the trap-and-haul fishway at BCD in accordance with the approved plans to provide effective (safe and timely) upstream passage for juvenile, sub-adult, and adult target fish species of  $\geq 4$  inches (~100mm) in total length over the full range of river flows for which Box Canyon Hydroelectric Project maintains operational control. The Licensee

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<sup>5</sup> For the purpose of this fishway prescription, a "continuous record" is defined as a minimum of one measurement taken on an hourly basis.

shall notify the Resource Managers in writing when the trap-and-haul fishway becomes operational. The Licensee shall operate, maintain, and monitor the trap-and-haul fishway in accordance with the approved trap-and-haul fishway Operation and Maintenance Plan (see section 1.2.1.4, above) and trap-and-haul fishway Monitoring Plan (see section 1.2.1.5, above). In addition, the Licensee shall operate the upstream fishway when target fish species are present in the Boundary Dam Reservoir, as recommended by the Resource Managers and approved by the Secretary using the best scientific information available. The Licensee may also request a 120-day extension from the Resource Managers, if justified, due to seasonal construction constraints.

#### **1.2.1.8 BCD Upstream Trap and Haul Fishway – Post Installation Effectiveness Evaluations**

Upon initiating the operation of the trap-and-haul fishway at BCD, the Licensee shall, at its own expense, conduct Post-installation Effectiveness Evaluations in accordance with the approved plan (see section 1.2.1.6, above). Within twelve (12) months after the date that the trap-and-haul fishway begins operation, the Licensee shall submit to the Resource Managers for review and comment, results of the effectiveness evaluations. Once the Licensee has addressed any issues raised during the comment period and modified the document accordingly, the report shall be filed with the Commission by the Licensee. If notified by the USFWS that deficiencies are observed in the fishway, the Licensee shall provide the Resource Managers a remediation plan to rectify such deficiencies that includes a schedule for repeating the effectiveness evaluation within sixty (60) days after notification. Subsequent to approval of the remediation plan by the Secretary, the Licensee shall file the remediation plan with the Commission and shall implement the plan in accordance with its approved schedule. This effectiveness evaluation process shall continue until it is demonstrated that all reasonable measures necessary and appropriate to provide safe, timely and effective upstream fish passage have been taken to the satisfaction of the Secretary. The Licensee shall conduct Post-installation Effectiveness Evaluations of the trap-and-haul fishway at least once every five (5) years for the duration of the license

#### **1.2.1.9 BCD Upstream Trap and Haul Fishway – Monitoring Report**

Within twelve (12) months after the date that the trap-and-haul fishway begins operation, and annually thereafter, the Licensee shall submit to the Resource Managers, a report summarizing information obtained through monitoring (see section 1.2.1.5, above). The Monitoring Report shall include results of observations taken by the Licensee pursuant to all approved plans.

#### **1.2.1.10 BCD Upstream Fishway – Provision for Modifications to the Upstream Trap and Haul Fishway, Requirement for an Upstream Volitional Fishway and Dispute Resolution**

The Secretary may require the Licensee to (1) modify the trap and haul upstream fishway or (2) construct a volitional upstream fishway if, based on monitoring and effectiveness

evaluations, the trap and haul system does not provide safe, timely and effective upstream fish passage. Any decision to require modifications to the trap and haul system or to require volitional upstream fish passage will not require the exercise of a reservation of authority under Section 18 of the Federal Power Act (FPA), and will not trigger the opportunity for the Licensee or any other party, to pursue a trial-type hearing or submit an alternative prescription under the Energy Policy Act. The Secretary will provide the opportunity for any member of the Technical Committee<sup>6</sup> to request dispute resolution of the Secretary's decision pertaining to parts (1) and (2) of this section, pursuant to the procedures set forth in section 1.7 of this prescription.

## **1.2.2 BCD Volitional Upstream Fishway**

As provided for under section 1.2.1.10, above, if the Secretary ultimately determines that a volitional upstream fishway will be required at BCD in order to provide safe, timely and effective fish passage for the target species, the USFWS will notify the Licensee and the Commission of that determination and the following will be required.

### **1.2.2.1 BCD Volitional Upstream Fishway – Conceptual Fishway Design Investigation**

Within twelve (12) months after notification by the USFWS that a volitional upstream fishway will be required at BCD the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, plans for completing design investigations to collect site-specific biological and engineering information required to site, design, and install a volitional pool and weir, vertical slot, or similar fishway at BCD. The Licensee shall apply design details and information learned from operation and monitoring of the trap-and-haul fishway, as appropriate, to the development of design and specifications for the construction and operation of the volitional upstream fishway. The plan shall provide for completion of site-specific design investigations to determine, among other design details:

- A. The design range for the Pend Oreille River such that the fishway is operational during the full range of flows and water surface elevations where the Licensee maintains operational control at BCD. Design and operation, for periods when the Pend Oreille River exceeds water quality criteria for temperature and TDG, shall be consistent with the water quality certification issued by the Washington Department of Ecology under section 401 of the Clean Water Act (33 U.S.C. § 1341);
- B. Site-specific hydraulic conditions at BCD, under all operating scenarios; 1) in the forebay and tailrace at BCD, and 2) in the Pend Oreille River upstream of BCD to River Mile 35.5 (or one mile above BCD, whichever is greater). The latter is to avoid or minimize the level of involuntary fallback of target fish species;

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<sup>6</sup> The "Technical Committee" consists of the Resource Managers and the Licensee.

- C. Testing, using a model of the BCD, forebay, auxiliary spillway, powerhouse, and tailrace area to insure the proper siting of fishway facilities to accommodate upstream fish passage, including entrance(s) and exit point(s) for the permanent volitional upstream fishway;
- D. Information on the swimming performance, behavior, and migratory pattern of juvenile  $\geq 4.0$  inches ( $\sim 100\text{mm}$ ) in total length, sub-adult and adult target fish species upstream and downstream of the dam sufficient to ensure proper siting of the entrance(s) and exit point(s) for the permanent upstream volitional fishway, under all operating scenarios and related environmental cues, including, but not limited to temperature, TDG, river flow and velocity and lighting;
- E. Structures, devices and measures to allow the adjustment of fishway entrance(s) attraction flows as necessary to effectively attract the target fish species into the upstream fishway. The upstream fishway will be designed to include an attractant flow between 5% and 10% of the high fish passage design flow.<sup>7</sup> The 5% to 10% attractant flow is cumulative for one or more entrances included in the upstream fishway design. Any given entrance will not exceed 1000 cfs as an attractant flow.
- F. Structures, devices, and measures to allow adjustment of water flow, water velocity and water surface elevations *within* the fishway necessary to provide the safe, timely and effective passage of target fish species through the fishway upstream to the fishway exit(s);
- G. Information to determine the distance the fishway exit will need to extend upstream above the spillway to prevent the fallback of upstream migrating fish under both spill and non-spill operating conditions at BCD, using site-specific hydraulic conditions under all operating scenarios in the forebay and in the Pend Oreille River upstream of BCD to River Mile 35.5 (or one mile above BCD, whichever is greater distance from the dam);
- H. BCD hydroelectric operations, to evaluate the influences of turbine discharge, turbine sequencing (first on, last off), auxiliary spillway, and spillway operations on the tailrace environment and to avoid masking of attraction flows for fish moving into the fishway entrance; and
- I. Provisions for counting and evaluating fish passing through the volitional upstream fishway.

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<sup>7</sup> According to National Marine Fisheries Service (NMFS) fishway criteria (section 4.3), high fish passage design flow is defined as the mean daily average stream discharge that is exceeded five (5) % of the time during periods when migrating fish are usually (historically) present at the site as determined by a flow-duration curve summarizing at least the previous twenty-five (25) years of daily discharges, or by an appropriate artificial streamflow duration record if discharge records are not available. This is the highest stream discharge for which migrants are expected to be present, migrating, and dependent on the proposed facility for safe passage.

### **1.2.2.2 BCD Volitional Upstream Fishway: Final Design Plans and Specifications**

Within twenty-four (24) months after notification by the USFWS that a volitional upstream fishway is required at BCD, the Licensee shall submit for review by the Resource Managers and approval of the Secretary, results of all volitional upstream fishway final design investigations and design plans and specifications for a volitional upstream fishway at BCD. The volitional upstream fishway shall be operational during the time frame recommended by the Resource Managers and approved by the Secretary, based on the anticipated presence of target fish species in the Pend Oreille River.

### **1.2.2.3 BCD Volitional Upstream Fishway – Operation and Maintenance Plan**

Within twenty-four (24) months after notification by the USFWS that a volitional upstream fishway is required at BCD, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary an Operation and Maintenance Plan for the volitional upstream fishway, describing anticipated operations, maintenance tasks, schedules, inspections, contingencies and emergency operating measures (including procedures for notifying the Resource Managers of fish delay, injury, and/or mortality as a result of daily observations). A lead technician designated by the Licensee shall be on site during all times when fish are being handled to help ensure maximum fish safety. Either cumulative experience and/or training of this technician shall be required to assure full understanding of direct and delayed mortality potential relating to stress and handling of fish (NMFS 1995a, 1995b).

Some loss of fish is expected to occur during the reasonable and prudent operation of the volitional upstream fishway. If inherent defects in the system prevent the fishway from providing safe, timely and effective upstream passage for the target species, then the Secretary may require that the fishway be modified or replaced, as appropriate..

### **1.2.2.4 BCD Volitional Upstream Fishway – Monitoring and Reporting Plan**

Within twenty-four (24) months after notification by the USFWS that a volitional upstream fishway is required at BCD, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, a plan for monitoring the volitional upstream fishway at BCD. The monitoring plan shall require the Licensee to submit an annual monitoring report to the Resource Managers for the duration of the Box Canyon Hydroelectric Project license and any subsequent annual licenses, and shall include, at a minimum, the following information:

- A. The number of fish, by species, size, age class, and date observed at the volitional upstream fishway;

- B. The number of hours and days that the volitional upstream fish passage facilities were in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;
- C. A record of the daily observations at BCD prepared by a qualified fish biologist (approved by the Resource Managers), of the physical condition of fish using the volitional fishway. Such observations shall include, but not be limited to, fish delay, injury, descaling, disease and gas bubble trauma. The Licensee shall report any observed fish delay, injury, and mortality to the Resource Managers within twenty-four (24) hours and shall immediately implement appropriate corrective measures consistent with the Operations and Maintenance Plan (see section 1.2.2.3, above). In addition, a random sub-sample of fish will be externally examined for evidence of GBT using methods based on those most currently published by the Northwest Power Planning council. A percentage of these fish will be killed and necropsied for internal evidence of GBT using accepted methods based on current fishery practices. The total percentage of fish examined will be determined by the Resource Managers and may be subject to change based on the results of examinations, or alterations in the design or placement of the volitional upstream fishway. Federally listed threatened or endangered species will not be used for these tests; and
- D. A continuous<sup>8</sup> record of TDG levels, water temperature, river flow and velocity both within the volitional fishway, and at or near the fishway entrance and exit points, as required to accurately monitor the effectiveness of the upstream volitional fishway.

#### **1.2.2.5 BCD Volitional Upstream Fishway – Post-Installation Effectiveness Evaluations Plan**

Within twenty-four (24) months after notification by the USFWS that a volitional upstream fishway is required at BCD, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, a plan for post-installation evaluations of the volitional upstream fishway(s). The plan shall provide for documentation of the upstream movement of target fish species, as determined by radio telemetry or other means of accurately tracking fish movement through the fishway and upstream from the forebay of BCD, at least to the confluence of Cedar Creek (at Ione, Washington) with the Pend Oreille River. This plan shall include methods for documenting fish passage efficiency, passage time, mortality, injury, and fallback rates for a representative range of operating scenarios, flow releases, and spill patterns from below BCD tailrace to a point upstream, as approved by the Secretary.

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<sup>8</sup> For the purpose of this fishway prescription, a “continuous record” is defined as a minimum of one measurement taken on an hourly basis

### **1.2.2.6 BCD Volitional Upstream Fishway – Installation and Operation**

Within twenty-four (24) months after notification by the USFWS that the Licensee's Final Design Plans and Specifications for the construction and operation of a volitional upstream fishway have been approved (see section 1.2.2.2, above), the Licensee shall, at its own expense, install and operate an upstream volitional pool and weir, vertical slot, or similar fishway at BCD in accordance with the approved plans (see section 1.2.2.2, above) to provide for effective (safe and timely) upstream passage of juvenile, sub-adult, and adult target fish species  $\geq 4$  inches (~100mm) over the full range of river flows for which Box Canyon Hydroelectric Project maintains operational control. The Licensee shall notify the Resource Managers in writing when the volitional upstream fishway becomes operational. The Licensee shall operate, maintain, and monitor the volitional upstream fishway in accordance with the approved Volitional Upstream Fishway Operation and Maintenance Plan (see section 1.2.2.3, above) and Volitional Upstream Fishway Monitoring and Reporting Plan (see section 1.2.2.4, above). In addition, the Licensee shall operate the upstream fishway when target fish species are present in the Boundary Dam Reservoir, as recommended by the Resource Managers and approved by the Secretary using the best scientific information available. The Licensee may also request a 120-day extension from the Resource Managers, if justified, due to seasonal construction constraints.

### **1.2.2.7 BCD Volitional Upstream fishway – Post-Installation Effectiveness Evaluations**

Upon initiating the operation of the volitional upstream fishway at BCD, the Licensee shall, at its own expense, implement Post-Installation Effectiveness Evaluations in accordance with the approved plan (see section 1.2.2.5, above). Within twelve (12) months after initiating the operation of the volitional upstream fishway, the Licensee shall submit to the Resource Managers for review and comment, results of the Post-installation Effectiveness Evaluations. Once the Licensee has addressed any issues raised during the comment period and modified the document accordingly, the report shall be filed with the Commission by the Licensee. If notified by the USFWS that deficiencies are observed in the fishway, the Licensee shall provide the Resource Managers with a remediation plan to rectify such deficiencies that includes a schedule for repeating the effectiveness evaluation within sixty (60) days after notification. Subsequent to approval of the remediation plan by the Secretary, the Licensee shall file the remediation plan with the Commission and shall implement the plan in accordance with its approved schedule. This effectiveness evaluation process shall continue until it is demonstrated that all reasonable measures necessary and appropriate to provide safe, timely and effective upstream fish passage for the target species have been performed to the satisfaction of the Secretary. The Licensee shall conduct Post-installation Effectiveness Evaluations of the volitional upstream fishway at least once every five (5) years for the duration of the license.

### **1.2.2.8 BCD Volitional Upstream Fishway – Monitoring Report**

Within twelve (12) months after start-up of the volitional upstream fishway, and annually thereafter, the Licensee shall submit to the Resource Managers, a report summarizing the information obtained through monitoring (see section 1.2.2.4, above). The Monitoring Report shall include the results of observations taken by the Licensee pursuant to all approved plans.

### **1.3 Specific Measures Prescribed for Downstream Fish Passage Facilities at BCD**

The following specific measures are prescribed for construction, operation, and maintenance of downstream fish passage facilities at BCD as necessary to provide effective (safe and timely) passage of juvenile, sub-adult and adult bull trout, westslope cutthroat trout, and mountain whitefish (i.e., target fish species). Furthermore, the goals of these facilities and measures are to provide 95% fish passage efficiency (FPE) for target fish species  $\geq 10$  inches (250mm) in total length. Fish passage efficiency is defined as:  $(\text{fish passing through a non-turbine route} \div \text{total fish passing the project}) \times 100$ . These goals will be achieved through the installation of turbine exclusion devices in combination with fish bypass facilities and measures for target fish species  $\geq 10$  inches (250 mm) in total length. The Licensee will formulate a design solution that is best suited to the project in consultation with the Resource Managers. Examples of a non-turbine fish passage route may include; spill, TDG bypass system, or non-pressurized fish bypass conduit, and will be subject to review and approval by the Secretary. All provisions for downstream fish passage shall work in unison and will be evaluated in total.

#### **1.3.1 BCD Downstream Fishway - Timeline**

Downstream fish passage facilities and measures will be operational no later than July 2015 or ten (10) years after license issuance. Therefore, to meet the designated date for initiating the operation of the downstream fishway, the Licensee shall begin conceptual design investigations at least five (5) years prior to July 2015 (i.e., no later than July 2010) as described in the following sections.

#### **1.3.2 BCD Downstream Fishway.-Fish Behavior, Survival, and Design Investigations**

Within five (5) years after license issuance and no later than July 2010, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary plans for completing design investigations to collect site-specific biological and engineering information required to properly site, design, and install downstream fish passage facilities and measures at BCD and to determine the extent of injury/mortality to the target fish species moving through the generating turbines, spillway gates, and the TDG bypass system. The plans shall be prepared by a qualified contractor with experience in conducting fish investigations, and

selected by mutual agreement of the Resource Managers and the Licensee. The plans shall provide for the completion of site-specific investigations to determine:

- A. Biological information on swimming performance, in consideration of the best scientific information available, to determine behavior and migratory pattern of target fish species in the forebay and tailrace area of BCD. The information shall be sufficient to ensure proper siting of downstream fishway structures (including entrance and exit points for fish migrating downstream through BCD and appurtenant facilities, and shall be obtained for all operating scenarios and related environmental cues, including but not limited to water temperature, TDG, water velocity, and lighting;
- B. Modeling of the Pend Oreille River that takes into consideration the channel configuration above the forebay. Such testing shall be used to determine the proper siting of fishway facilities to accommodate downstream fish passage, including entrance and exit points for the downstream fishway in consideration of proposed modifications to the existing power house, spillway, or other bypass features;
- C. Design information, as needed to accommodate the installation of devices and measures to allow the adjustment of fishway entrance attraction flows as necessary to effectively attract target fish species into the fishway;
- D. Design information that meets industry standards, as needed to operate the turbines at BCD under a full range of operations to support safe, timely and effective downstream fish passage at or near a survival of 93 - 95% for target fish species  $\leq 10$  inches in length; and
- E. An assessment, of direct and indirect/delayed (48 hour) injury and mortality to juvenile, sub-adult and adult target fish species entrained at BCD. The Licensee shall assess injury and mortality to target fish species, using methods approved by the Secretary: (1) within the turbines, (2) when passing over the existing spillway and TDG bypass system and (3) when passing through partially opened spillway gates. This investigation shall also include: (4) a record of the species and size of fish that are being entrained in the turbines; and (5) observations of how, when and where fish entrained in the turbine inlet (including trash racks), turbines, and/or spillway (considering various gate openings) and TDG bypass system are injured or killed.

Within eighteen (18) months after the commencement of the fish behavior, survival, and design investigations as described above and no later than January 2012, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary the initial results of their investigations, and thereafter on an annual basis until the full term of investigations have been completed.

### 1.3.3 BCD Downstream Fishway – Preliminary Design Plans

Within twenty-four (24) months after notification by the USFWS that the Fish Behavior, Survival, and Design Investigations Plan has been approved (see section 1.3.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, preliminary plans and design investigations for downstream fish passage facilities and measures. The preliminary plans shall include:

- A. A plan for the installation and operation of downstream fish passage facilities and measures to accommodate effective (safe and timely) downstream movement of target fish species  $\geq 10.0$  inches (250mm) by a non-turbine<sup>9</sup> route from the forebay to the tailrace. The downstream fishway shall be designed to operate with sufficient flow to successfully attract target fish species when present in the forebay. The combined non-turbine routes shall have a Fish Passage Efficiency<sup>10</sup> (FPE) of 95% for target fish species  $\geq 10.0$  inches (250 mm) in total length;
- B. A provision to direct target fish species through BCD via a non-turbine route, that employs methods such as partial screening, louvers, modified trash-racks, bypass conduit(s), or other devices. The bypass conduit shall be of an open-channel or non-pressurized pipe design;
- C. A provision to operate the generating turbines, as necessary to provide safe, timely and effective downstream fish passage at or near a survival of 93 - 95% for target fish species  $\leq 10$ " in length.
- D. The design range for the Pend Oreille River such that the downstream fish passage facilities and measures is/are operational during the full range of flows and water surface elevations during which the Licensee maintains operational control at BCD. Design and operation for periods when the Pend Oreille River exceeds water quality criteria for temperature and TDG, shall be consistent with the water quality certification issued by the Washington Department of Ecology under section 401 of the Clean Water Act (33 U.S.C. § 1341);

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<sup>9</sup> A “non-turbine route” means; a route of passage that allows fish to successfully move from the Pend Oreille River downstream from the inlet channel (forebay) of BCD through a fish bypass(es) and/or spillway(s). The spillway(s) and fish bypass(es) shall be designed to pass target fish species without appreciable direct and/or indirect/delayed (48 hr) injury and/or mortality. Fish moving upstream away from BCD that do not pass downstream into the tailrace area have not moved through a “non-turbine route.”

<sup>10</sup> Fish Passage Efficiency (FPE) is defined as (fish passing through a non-turbine route/total fish passing the project) x 100, and will be verified by tagging fish moving downstream through BCD. Only fish that successfully pass through BCD to the tailrace area, without evidence of direct or indirect/delayed (48 hr) injury and/or mortality will be considered in meeting a 95% FPE.

- E. Structures, devices, and measures to allow adjustment of water flow, water velocity and water surface elevations within the downstream fish passage facilities as needed to effectively convey the target fish through BCD; and
- F. Provisions for counting and evaluating fish passing through the downstream fish passage facilities.

In developing a preliminary plan for the downstream fish passage facilities and measures, the Licensee shall consider the results of the fish survival, behavior and design investigations.

#### **1.3.4 BCD Downstream Fishway – Final Design Plans and Specifications**

Within twelve (12) months after notification by the USFWS that the Preliminary Design Plans for completing the downstream fishway have been approved (see section 1.3.3, above) and within twelve (12) months of any other approval required by law, the Licensee shall submit for review and approval of the Secretary the results of all downstream fish passage design investigations and design plans and specifications for construction and operation of the downstream fish passage facilities at BCD.

#### **1.3.5 BCD Downstream Fishway – Operations and Maintenance Plan**

Within twelve (12) months after notification by the USFWS that the Final Design Plans and Specifications for the downstream fish passage facilities have been approved (see section 1.3.4, above) and within twelve (12) months of any other approval required by law, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary an Operation and Maintenance Plan describing anticipated operations, maintenance tasks, schedules, inspections, contingencies and emergency operating procedures (including procedures for notifying the Resource Managers of fish delay, injury and/or mortality as a result of daily observations) of the downstream fish passage facilities and measures. A lead technician designated by the Licensee shall be on site during all times when fish are being handled or loaded to help ensure maximum fish safety. Either cumulative experience and/or training of this technician shall be required to assure full understanding of direct and delayed mortality potential relating to stress and handling of fish (NMFS 1995a, 1995b).

Some loss of fish is expected to occur during the reasonable and prudent operation of the approved downstream fishway. If inherent defects in the system prevent the fishway from providing safe, timely and effective downstream passage for the target species, then the Secretary may require that the fishway be modified or replaced, as appropriate.

#### **1.3.6 BCD Downstream Fishway – Monitoring and Reporting Plan**

Within twelve (12) months after notification by the USFWS that Final Design Plans and Specifications for the downstream fish passage facilities and measures have been approved (see section 1.3.4, above) and within twelve (12) months of any other approval required by law, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary a plan

for monitoring the downstream fish passage facilities and measures at BCD. The monitoring plan shall require submission of an annual monitoring report to the resource agencies identified herein for the duration of the operation of the downstream fishway and shall include, at a minimum, the following information:

- A. The number of fish, by species, size, age class, and date observed at the permanent downstream fish passage facilities;
- B. The number of hours and days the downstream fish passage facilities were in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;
- C. A record of the daily observations at BCD forebay and tailrace, conducted by a qualified fish biologist (approved by the Resource Managers), about the physical condition of the fish using the downstream fish passage facilities. Such observation shall include, but not be limited to delay, injury, descaling, disease, gas bubble trauma, or any indication of predation by piscivorous birds or fish resulting from disorientation of target fish species using the downstream fish passage facilities. The Licensee shall report any observed delay, injury, and mortality of fish to the Resource Managers within 24 hours and shall immediately implement appropriate corrective measures consistent with the Operations and Maintenance Plan (see section 1.3.5, above); and
- D. A continuous<sup>11</sup> record of TDG levels, water temperature, river flow, and velocity, measured at least hourly, as required to accurately monitor the effectiveness of the downstream fish passage facilities.

### **1.3.7 BCD Downstream Fishway – Post-Installation Effectiveness Evaluation Plan**

Within twelve (12) months after notification by the USFWS that the Final Design Plans and Specifications for the downstream fish passage facilities and measures have been approved (see section 1.3.4, above), and within twelve (12) months of any other approval required by law, the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, a Post-installation Effectiveness Evaluation Plan for the downstream fish passage facilities and measures. The plan shall provide for documentation of downstream movement of target fish species as determined by radio telemetry or other means of accurately tracking fish movement through BCD and into the tailrace area. The number of fish selected for the fish movement investigation shall be determined by the Resource Managers based on an accepted sampling protocol. This documentation shall include fish passage efficiency, passage time, mortality, and injury for a representative range of operating scenarios and flow releases from BCD.

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<sup>11</sup> For the purpose of this fishway prescription, a “continuous record” is defined as a minimum of one measurement taken on an hourly basis.

### **1.3.8.1 BCD Downstream Fishway – Installation and Operation**

Within eighteen (18) months after notification by the USFWS that the Licensee's Final Design Plans and Specifications for the downstream fish passage facilities and measures have been approved (see section 1.3.4, above), the Licensee shall, at its own expense, install and commence operation of the downstream fish passage facilities and measures at BCD. The installation and operation of the downstream fish passage facilities and measures at BCD shall be conducted in accordance with these plans to provide effective (safe and timely) downstream passage for juvenile, sub-adult and adult target fish species. The Licensee shall notify the Resource Managers and the other resource agencies identified herein in writing when the downstream fish passage facilities and measures become operational. The operation, maintenance, and monitoring of downstream fishway operations shall be conducted in accordance with plans set forth in sections 1.3.5 and 1.3.6, above, and shall begin concurrent with the initiation of downstream fishway operations.

In addition, the Licensee shall operate the downstream fishway when target fish species are present in the Box Canyon Reservoir, as recommended by the Resource Managers and approved by the Secretary using the best scientific information available. The downstream fishway will not be required to be operational when spill gates are fully open. The Licensee may also request a 120-day extension from the Resource Managers, if justified, due to seasonal construction constraints.

### **1.3.9 BCD Downstream Fishway – Post-Installation Effectiveness Evaluations**

Upon initiating operations of the downstream fish passage facilities and measures at BCD, the Licensee shall, at its own expense, conduct Post-Installation Effectiveness Evaluations in accordance with the approved plan (see section 1.3.7, above). Within twelve (12) months after start-up of the downstream fishway, the Licensee shall submit to the Resource Managers for review and comment, results of the effectiveness evaluations. Once the Licensee has addressed any issues raised during the comment period and modified the document accordingly, the report shall be filed with the Commission by the Licensee. If notified by the USFWS that deficiencies are observed in the fishway, the Licensee shall provide the Resource Managers a remediation plan to rectify such deficiencies that includes a schedule of repeating the effectiveness evaluation within sixty (60) days after notification. Subsequent to approval of the remediation plan by the Secretary, the Licensee shall file the remediation plan with the Commission and shall implement the plan in accordance with its approved schedule. This effectiveness evaluation process shall continue until it is demonstrated that all reasonable measures necessary and appropriate to provide safe, timely and effective downstream fish passage have been performed to the satisfaction of the Secretary. The Licensee shall conduct Post-installation Effectiveness Evaluations of the downstream fishway at least once every five (5) years for the duration of the license.

### **1.3.10 BCD Downstream Fishway – Monitoring Report**

Within twelve (12) months after the installation and commencement of operation of the downstream fish passage facilities and measures, and annually thereafter, the Licensee shall submit to the Resource Managers a report summarizing the information obtained through monitoring (Monitoring Report) (see section 1.3.6, above). The Monitoring Report shall include the results of observations made by the Licensee pursuant to all approved plans.

### **1.3.11 BCD Downstream Fishway – Provision for Major Structural Changes and Dispute Resolution**

The downstream fishway design ultimately approved by the Secretary and the Commission will be based on the best available information and technologies, and it is expected that major structural changes to the fishway would not be necessary. However, minor modifications to the fishway or even major structural changes may be necessary if, based on monitoring and effectiveness evaluations, it does not provide safe, timely and effective downstream fish passage. Any decision to require modifications to the downstream fishway will not require the exercise of a reservation of authority under section 18 of the Federal Power Act (FPA), and will not trigger the opportunity for the Licensee or any other party to pursue a trial type hearing or to submit an alternative prescription under the Energy Policy Act. The Secretary will provide the opportunity for any member of the Technical Committee to request dispute resolution if the Secretary determines that the downstream fishway is not providing safe, timely and effective fish passage and that major structural and operational<sup>12</sup> changes to the downstream fishway are necessary. The Secretary's final decision would be informed by this dispute resolution process pursuant to the procedures set forth in section 1.7, below.

## **1.4 General Prescriptions for Fish Passage Facilities at the Calispell Creek Pumping Plant**

The following general prescriptions apply to the construction, operation, and maintenance of upstream and downstream fish passage facilities and measures at the Calispell Creek Pumping Plant (CCPP), and are prescribed to ensure effectiveness of the fishways pursuant to section 1701(b), of the 1992 National Energy Policy Act) P.L. 102-486, Title XVIII, 106 Stat. 3008):

- A. The Secretary retains the authority to require modifications to these fish passage facilities and measures at any time during the term of the license (including the installation of volitional fish passage facilities), if based on

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<sup>12</sup> An action such as modifying or adding a pump or other equipment to facilitate downstream fish passage through a non-turbine route would be considered a "structural change" (i.e. would not be considered an operational change) and therefore would be subject to the dispute resolution process. In addition, "change of operation" would not be subject to dispute resolution if that operational change is limited to the use of existing equipment approved by the Secretary during the planning stage of the downstream fishway.

monitoring and effectiveness evaluations, these fish passage facilities do not provide safe, timely and effective fish passage as defined in Section 1.2.1.

- B. The Secretary retains the right to review and approve all documents (e.g., plans specifications, measures, study designs, reports) identified in this prescription prior to construction and implementation of any required measure. To facilitate this review and approval process, correspondence between the Secretary and the Licensee will occur through the U.S. Fish and Wildlife Service (USFWS). All actions identified in this prescription requiring approval should therefore be sent to:

Project Leader  
Upper Columbia Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
1103 E. Montgomery Drive  
Spokane, WA 99206

Correspondence made by USFWS on behalf of the Secretary will occur following review and approval by all relevant DOI component bureaus, including the Bureau of Indian Affairs (BIA). The Secretary remains the final arbitrator in case of dispute.

- C. The Licensee shall provide safe, timely and effective fish passage facilities and measures at CCPP consistent with hydropower operations as approved by the Commission, as needed to accommodate upstream and downstream passage for the target fish species.
- D. The Licensee shall maintain all fish passage facilities in proper working order and shall ensure that all fish passage facilities are clear of trash, sediment, logs, debris, and other material that would hinder fish passage. Anticipated maintenance shall be performed in sufficient time before a migratory period such that the fish passage facilities can be tested and inspected and will operate effectively prior to and during the migratory periods.
- E. Upon request, the Licensee shall provide designated DOI representatives access to the CCPP site and to pertinent Project records for the purpose of inspecting the fish passage facilities as necessary to determine compliance with these conditions for the fishway.
- F. *Dispute Resolution*: This Prescription provides the Licensee with the means to initiate Dispute Resolution under certain circumstances when the Secretary requires specific modifications to the fish passage facilities. These circumstances are stipulated in section 1.5.1.9 of this prescription, and the procedures for resolving disputes are set forth at section 1.7 of this prescription.

## **1.5 Specific Prescription Measures for Upstream Fishways at the Calispell Creek Pumping Plant (CCPP)**

The following specific measures are prescribed for the construction, operation and maintenance of upstream fish passage facilities at the CCPP to provide effective (safe and timely) passage of juvenile, sub-adult and adult target fish species of  $\geq 4.0$  inches (~100 mm) in total length.

### **1.5.1 CCPP Upstream Fishway- Timeline**

The upstream fishway shall be complete and operational no later than January 2018, or twelve and one-half (12.5) years after the original license was issued (July 11, 2005). Therefore, to meet the designated operational start-up date (January 2018) of the upstream fishway, the Licensee shall commence submitting conceptual design investigations to the USFWS at least two and one-half (2.5) years prior to January 2018 (i.e., no later than July 2015), as described in the following sections.

#### **1.5.1.1 CCPP Upstream Fishway – Conceptual Design Investigation**

Within ten (10) years after license issuance (July 2015), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary plans for completing design investigations to collect site-specific biological and engineering information required to site, design, and install an upstream trap-and-haul fishway at CCPP. The plan shall provide for the completion of site-specific design investigations to determine, among other design details:

- A. The design range for Calispell Creek shall be such that the trap-and-haul fishway is operational at the full range of flows and water surface elevations, both upstream and downstream from the CCPP Design and operation, for periods when Calispell Creek exceeds the water quality criterion for temperature, shall be consistent with section 401 (Clean Water Act) water quality certification, issued by the Environmental Protection Agency or appropriate Tribal authority;
- B. Site-specific hydraulic conditions, under all operating scenarios, of Calispell Creek upstream of the CCPP;
- C. Testing, using a model of Calispell Creek, that takes into consideration: channel configuration above and below the CCPP, operation of the existing pumps; modifications to existing pumping operations (including but not limited to the installation of fish screens, fish guidance structures, trash racks, etc.); and location of existing or additional outfall structures downstream from the CCPP. Such testing shall be used to determine proper siting of fish passage facilities and measures to accommodate upstream fish passage, including entrance and exit points for a future volitional fishway (if required) and release location(s) for fish collected in the upstream trap-and-haul fishway;

- D. Information on the swimming performance, in consideration of the best scientific information available, to assist in determining the behavior and migratory pattern of juvenile  $\geq 4.0$  inches ( $\sim 100\text{mm}$ ), sub-adult and adult target fish species upstream and downstream from the CCPP sufficient to ensure proper siting of trap-and-haul upstream trap-and-haul fish passage facilities and entrance and exit point(s) for fish migrating upstream through the CCPP and appurtenant facilities, and transported to streams tributary to Calispell Creek, under all operating scenarios and related environmental cues, including but not limited to water temperature, water velocity and lighting;
- E. Devices and measures to allow adjustment of fishway entrance attraction flows as necessary to effectively attract target fish species into the fishway;
- F. Devices and measures to allow adjustment of fishway entrance configuration, elevation, and location to effectively attract target fish species into the fishway under the full range of Box Canyon Hydroelectric Project operations, including but not limited to operational pool elevation in Box Canyon Reservoir and the operation of a pump(s) located in Calispel Creek, upstream of CCPP; and
- G. Provisions for counting and evaluating fish passing through the upstream fish passage facilities.

#### **1.5.1.2 CCPP Upstream Fishway – Final Design Plans and Specifications**

Within twelve (12) months after notification by the USFWS that the Conceptual Design Investigation Plan has been approved (see section 1.5.1.1, above), the Licensee shall submit for the review and approval of the Secretary the results of all upstream trap-and-haul fishway design investigations and design plans and specifications for construction and operation of the upstream trap-and-haul fishway at the CCPP.

#### **1.5.1.3 CCPP Upstream Fishway – Operations and Maintenance Plan**

Within twelve (12) months after notification by the USFWS that their Conceptual Design Investigation Plan has been approved (see section 1.5.1.1, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, an Operations and Maintenance Plan describing anticipated operation, maintenance, schedules, inspections, contingencies and emergency operating measures (including procedures for notifying the Resource Managers of fish delay, injury, and/or mortality as a result of daily observations) for the upstream fishway at CCPP.

#### **1.5.1.4 CCPP Upstream Fishway – Monitoring and Reporting Plan**

Within twelve (12) months after notification by the USFWS that their Conceptual Design Investigation Plan has been approved (see section 1.5.1.1, above), the Licensee shall, at

its own expense and in consultation with the Resource Managers develop and submit for the review and approval of the Secretary a plan for monitoring the upstream trap-and-haul fishway at CCPP. The monitoring plan shall require submission of an annual monitoring report to the Resource Managers for the duration of the operation of the upstream trap-and-haul fishway and shall include, at a minimum, the following information:

- A. The number of fish, by species, size, age class, and date collected at the upstream trap-and-haul fishway collection point and transported upstream;
- B. The number of hours and days the upstream trap-and-haul fishway was in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;
- C. A record of the daily observations conducted by a qualified fish biologist (approved by the Resource Managers) regarding the physical condition of fish using the upstream trap-and-haul fishway. Such observations shall include, but not be limited to, fish delay, injury, descaling and disease. The Licensee shall report any observed fish delay, injury and/or mortality to the Resource Managers within twenty-four (24) hours and shall immediately implement appropriate corrective measures consistent with the Operations and Maintenance Plan; and
- D. A continuous record of Dissolved Oxygen (DO) levels, water temperature, stream flow and velocity, measured at least hourly, or as required to accurately monitor effectiveness of the upstream fish passage facilities and measures. Water quality data that has been collected to meet other Federal, State, and/or Tribal requirements may be utilized if applicable.

#### **1.5.1.5 CCPP Upstream Fishway – Post-Installation Effectiveness Evaluation Plan**

Within twelve (12) months after notification by the USFWS, that the Conceptual Design Investigation Plan has been approved (see section 1.5.1.1, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, a plan for post-installation effectiveness evaluations of the upstream trap-and-haul fish passage facilities and measures. The plan shall require documentation of the upstream movement of target fish species as determined by radio telemetry or other means of accurately tracking fish movement. The number of fish selected for this fish movement study shall be recommended by the Resource Managers and approved by the Secretary, and will be based on accepted sampling protocol. This documentation shall include fish passage efficiency, passage time, mortality, injury, and fallback rates for a representative range of operating scenarios, and flow releases from the CCPP.

#### **1.5.1.6 CCPP Upstream Fishway – Installation and Operation**

Within twelve (12) months after notification by the USFWS that the Final Design Plans and Specifications for construction and operation of the upstream trap-and-haul fish passage facilities and measures have been approved (see section 1.5.1.2, above), the Licensee shall, at its own expense, install and commence operation of the upstream fish passage facilities and measures at CCPP. The installation and operation of the upstream trap-and-haul fishway shall be conducted in accordance with these plans to provide effective (safe and timely) upstream passage for juvenile, sub-adult, and adult target fish species. The Licensee shall notify the Resource Managers in writing when the upstream trap-and-haul fish passage facilities and measures become operational. Operation, maintenance, and monitoring of upstream trap-and-haul fishway operations, shall be in accordance with the approved upstream fishway Operations and Maintenance Plan (see section 1.5.1.3, above) and shall commence with the start-up of upstream trap-and-haul fish passage facility operations. In addition, the Licensee shall operate the upstream fishway when target fish species are present in the Box Canyon Reservoir, as recommended by the Resource Managers and approved by the Secretary using the best scientific information available.

#### **1.5.1.7 CCPP Upstream Fishway - Post-Installation Effectiveness**

Upon completion of installation and commencement of operation of the upstream trap-and-haul fish passage facilities and measures, the Licensee shall, at its own expense; initiate post-installation effectiveness evaluations in accordance with the approved plan (see section 1.5.1.5, above). Within twelve (12) months of installation of the upstream fishway, the Licensee shall submit to the Resource Managers, the results of initial effectiveness evaluations. Results of the evaluations shall be submitted to the Resource Managers for review and comment prior to being filed with the Commission. If notified by the USFWS of deficiencies in the fishway, the Licensee shall provide the Resource Managers a remediation plan to rectify such deficiencies, including a schedule for repeating the effectiveness evaluation within sixty (60) days after notification. Subsequent to approval of the remediation plan by the Secretary, the Licensee shall file the remediation plan with the Commission and shall implement the plan in accordance with its approved schedule. This effectiveness evaluation process shall continue until it is demonstrated that all reasonable measures necessary and appropriate to provide safe, timely and effective upstream fish passage have been performed to the satisfaction of the Secretary. The Licensee shall conduct post-construction evaluations of the effectiveness of the upstream trap-and-haul fish passage facilities and measures at least once every five (5) years, for the duration of the license, or until replaced with an upstream volitional fishway (if required).

#### **1.5.1.8 CCPP Upstream Fishway – Monitoring Report**

Within twelve (12) months after start-up of the upstream fish passage facilities, and on an annual basis thereafter, the Licensee shall submit to the Resource Managers a report summarizing information obtained through monitoring (see section 1.5.1.4, above). The

monitoring report shall include results of observations taken by the Licensee pursuant to the stipulations described in sections 1.5.1.4 and 1.5.1.5.

#### **1.5.1.9 CCPP Upstream Fishway – Provision for Modification of the Upstream Fishway, Installation of Volitional Upstream Fishway and Dispute Resolution**

No permanent volitional upstream passage system will be required at CCPP as long as safe, timely and effective passage is achieved and maintained by the upstream trap and haul fishway. The Secretary may require the Licensee to (1) modify the trap-and-haul upstream fishway or (2) construct a volitional upstream fishway if, based on monitoring and effectiveness evaluations, the trap-and-haul system does not provide safe, timely, and effective upstream fish passage. Any decision to require modifications to the trap-and-haul system or to require volitional fish upstream fish passage will not require the exercise of authority under section 18 of the Federal Power Act (FPA), and will not trigger the opportunity of the Licensee or any other party to pursue a trial-type hearing or to submit an alternative prescription under the Energy Policy Act. The Secretary will provide the opportunity for any member of the Technical Committee to request dispute resolution of the Secretary's decision pertaining to parts (1) and (2) of this section, pursuant to the procedures set forth in section 1.7 of this prescription.

#### **1.5.2 CCPP Volitional Upstream Fishway– Notification by U.S. Fish and Wildlife Service**

As provided for under section 1.5.1.9, above, if the Secretary ultimately determines that a volitional upstream fishway will be required at the CCPP, the USFWS will notify the Licensee and the Commission of that determination and the following will be required:

##### **1.5.2.1 CCPP Volitional Upstream Fishway – Conceptual Design Investigation**

Within six (6) months after being notified in writing by the USFWS that the Volitional Upstream Fishway will be required at CCPP, the Licensee shall, at its own expense and in consultation with the Resource Managers develop and submit for review and approval by the Secretary, plans for completing design investigations to collect site-specific biological and engineering information required to site, design, and install permanent, volitional pool and weir, vertical slot, or similar fishway at the CCPP. The plan shall provide for the completion of site-specific design investigations to determine, among other design details:

- A. The design range for Calispell Creek shall be such that the fishway(s) is/are operational at the full range of flows and water surface elevations, both upstream and downstream from the CCPP. Design and operation, for periods when Calispell Creek exceeds water quality criterion for temperature, shall be consistent with section 401 (Clean Water Act) water

quality certification issued by the Environmental Protection Agency or appropriate Tribal authority;

- B. Site-specific hydraulic conditions, under all operating scenarios, of Calispell Creek upstream of CCPP;
- C. Testing, using a model of Calispell Creek, that takes into consideration: channel configuration above and below the CCPP, operation of the existing pumps; modifications to the existing pumping operations (including but not limited to the installation of fish screens, fish guidance structures, trash racks, etc.); and location of existing or additional outfall structures downstream from the CCPP that are associated with pumps operated by the Licensee. Such testing shall ensure proper siting of fishway facilities to accommodate upstream fish passage, including entrance and exit points for the permanent upstream volitional fishway;
- D. Information on swimming performance, in consideration of the best scientific information available, to determine behavior and migratory pattern of juvenile, sub-adult and adult target fish species  $\geq 4.0$  inches (~100mm) in length, upstream and downstream from CCPP sufficient to determine proper siting of the permanent upstream fishway structure(s), including entrance and exit point(s) for fish migrating upstream through CCPP and appurtenant facilities under all operating scenarios and related environmental cues, including but not limited to water temperature, water velocity and lighting;
- E. Devices and measures to allow adjustment of the fishway entrance attraction flows as necessary to effectively attract target fish species into the fishway;
- F. Devices and measures to allow adjustment of the fishway entrance configuration, elevation, and location to effectively attract target fish species into the fishway under the full range of Box Canyon Hydroelectric Project operations, including but not limited to operational pool elevation in Box Canyon Reservoir and the operation of a pump(s) located in Calispel Creek, upstream of CCPP; and
- G. Provisions for counting and evaluating fish passing through the upstream fish passage facilities.

Moreover, the Licensee shall apply design details and information learned from operation and monitoring of the upstream trap-and-haul fish passage facilities and measures, as appropriate, to development of the design and specifications for construction and operation of the volitional fishway.

### **1.5.2.2 CCPP Volitional Upstream Fishway – Final Design Plans and Specifications**

Within twelve (12) months after notification by the USFWS that its Conceptual Design Investigation Plan (see section 1.5.2.1, above) for a Volitional Fishway Design has been approved, the Licensee shall submit for review and approval of the U.S. Fish and Wildlife Service the results of the Conceptual Upstream Fishway design investigations and for construction and operation of a volitional upstream fishway at CCPP.

### **1.5.2.3 CCPP Volitional Upstream Fishway – Operations and Maintenance Plan**

Within twelve (12) months after notification by the USFWS, that the Final Design Plans and Specifications have been approved (see section 1.5.2.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary an operation and maintenance plan describing anticipated operation, maintenance, schedules, inspections, contingencies and emergency operating measures (including procedures for notifying the Resource Managers of fish delay, injury, and/or mortality as a result of daily observations) for the upstream fishway at the CCPP.

### **1.5.2.4 CCPP Volitional Upstream Fishway – Monitoring and Reporting Plan**

Within twelve (12) months after notification by the USFWS, that their Final Design Plans and Specifications have been approved (see section 1.5.2.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval of the Secretary, a plan for monitoring the permanent upstream volitional fishway at the CCPP. The monitoring plan shall require the submission of an annual report to the resource entities identified herein for the duration of the Box Canyon Hydroelectric Project's license and any subsequent annual license, and shall include, at a minimum, the following information:

- A. The number of fish, by species, size, age class, and date observed at a fish counting facility at the permanent upstream volitional fishway;
- B. The number of hours and days the permanent upstream fishway was in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;
- C. A record of the daily observations conducted by a qualified fish biologist (approved by the Resource Managers), about the physical condition of fish using the permanent upstream volitional fishway. Such observations shall include, but not be limited to, delay, injury, descaling and disease. The Licensee shall report any observed fish delay, injury and/or mortality to the Resource Managers within twenty-four (24) hours and shall immediately implement appropriate corrective measures consistent with the Operations and Maintenance Plan (see section 1.5.2.3, above); and

- D. A continuous record of DO levels, water temperature, stream flow and velocity, measured at least hourly, as required to accurately monitor the effectiveness of the upstream fishway structure. Water quality data collected to meet other Federal, State, and/or Tribal requirements, may be utilized if applicable.

#### **1.5.2.5 CCPP Volitional Upstream Fishway – Post-Installation Effectiveness Evaluation Plan**

Within twelve (12) months after notification by the USFWS, that their Final Design Plans and Specifications have been approved (see section 1.5.2.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval of the Secretary, a plan for post-installation evaluations of the volitional upstream fishway. The plan shall provide for documentation of upstream movement of target fish species, as determined by radio telemetry or other means of accurately tracking fish movement. The number of fish selected for this fish movement study shall be recommended by the Resource Managers and approved by the Secretary, and will be based on accepted sampling protocol. This documentation shall include fish passage efficiency, passage time, mortality, injury, and fallback rates for a representative range of operating scenarios, and flow releases from the CCPP.

#### **1.5.2.6 CCPP Volitional Upstream Fishway – Installation and Operation**

Within twelve (12) months after notification by the USFWS that the Final Design Plans and Specifications for construction and operation of the volitional upstream fishway have been approved (see section 1.5.2.2, above), the Licensee shall, at its own expense, install and commence operation of permanent upstream volitional pool and weir, vertical slot, or similar fishway at CCPP. The installation and operation of a permanent upstream volitional fishway shall be conducted in accordance with these plans to provide effective (safe and timely) upstream passage for juvenile, sub-adult, and adult target fish species over the full range of river flows for which the Box Canyon Hydroelectric Project maintains operational control. The Licensee shall notify the Resource Managers in writing when the volitional upstream fishway becomes operational. Operation, maintenance, and monitoring of volitional upstream fishway operations, in accordance with the approved Volitional Upstream Fishway Operations and Maintenance Plan (see section 1.5.2.3, above) and Volitional Upstream Fishway Monitoring and Reporting Plan (see section 1.5.2.4, above) shall commence with initiation of volitional upstream fishway operations. In addition, the Licensee shall operate the upstream fishway when target fish species are present in the Box Canyon Reservoir and Calispell Creek, as recommended by the Resource Managers and approved by the Secretary using the best scientific information available. The Licensee may also request a 120-day extension from the Resource Managers, if justified, due to seasonal construction constraints

### **1.5.2.7 CCPP Volitional Upstream Fishway – Post-Installation Effectiveness Evaluations**

Upon start-up of the volitional upstream fishway, the Licensee shall, at its own expense, begin post-installation effectiveness evaluations in accordance with the approved plan (see section 1.5.2.5 above). Within twelve (12) months of the installation of the permanent upstream fishway, the Licensee shall submit to the Resource Managers results of initial effectiveness evaluations. Results of the evaluations shall be submitted to the resource managers identified herein for review and comment prior to being filed with the Commission. If notified by the USFWS that deficiencies are observed in the fishway, the Licensee shall provide the Resource Managers a remediation plan to rectify such deficiencies that includes a schedule of repeating the effectiveness evaluation within sixty (60) days after notification. Subsequent to approval of the remediation plan by the Secretary, the Licensee shall file the remediation plan with the Commission and shall implement the plan in accordance with its approved schedule. This effectiveness evaluation process shall continue until it is demonstrated that all reasonable measures necessary and appropriate to provide safe, timely and effective upstream fish passage have been performed to the satisfaction of the Secretary. The Licensee shall conduct post-construction evaluations of the effectiveness of the permanent upstream volitional fishway at least once every five (5) years for the duration of the license.

### **1.5.2.8 CCPP Volitional Upstream Fishway – Monitoring Report**

Within twelve (12) months after start-up of the upstream volitional fishway, and on an annual basis thereafter, the Licensee shall submit to the Resource Managers a report summarizing the monitoring information (see section 1.5.2.4, above). The monitoring report shall include results of observations taken by the Licensee pursuant to the stipulations as described in sections 1.5.2.4 and 1.5.2.5., above.

## **1.6 Specific Prescriptions for Downstream Fishways at the Calispell Creek Pumping Plant (CCPP)**

The following conditions are prescribed for construction, operation and maintenance of downstream fish passage facilities and measures at the CCPP to provide effective (safe and timely) passage of juvenile, sub-adult and adult target fish species  $\geq 4.0$  inches (~100 mm) in total length.

The downstream fishway shall be complete and operational by **July 2017**, or twelve (12) years after the original license was issued (July 11, 2005). Therefore, to meet the designated operational start-up date (July 2017) of the downstream fishway, the Licensee shall commence submitting conceptual design investigations to the USFWS at least 3.5 years prior to July 2017 (i.e., no later than January 2014), as described in the following sections.

### **1.6.1 CCPP Downstream Fishway – Conceptual Design Investigations and Construction Plan**

Within eight and one-half (8.5) years after license issuance (by January 2014), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for approval by the Secretary, plans for completing design investigations to collect site-specific biological and engineering information required to properly situate, design, and install downstream fish passage facilities and measures at the CCPP. The plans shall be prepared by a qualified contractor with experience in conducting fish investigations, and selected by mutual agreement of the Resource Managers and the Licensee. The plans shall provide for the completion of site-specific design investigations to determine, among other design details:

- A. Biological information on swimming performance, in consideration of the best scientific information available, to determine the behavior and migratory pattern of target fish species in Calispell Creek, upstream and downstream from the CCPP. The information shall be sufficient to ensure the proper siting of downstream fish passage facilities (including entrance and exit points for fish migrating downstream through the CCPP) and appurtenant facilities, and shall be obtained for all operating scenarios and related environmental cues, including but not limited to water temperature, DO, stream velocity, and lighting;
- B. Design investigations, using a model of Calispell Creek that takes into consideration the channel configuration above the CCPP. Such investigations shall be used to determine the proper siting of fish passage facilities to accommodate downstream fish passage, including entrance and exit points for the permanent downstream fishway;
- C. Design investigations, as needed to accommodate the installation of devices and measures to allow adjustment of fishway entrance attraction flows as necessary to effectively attract target fish species into the fishway;
- D. The design range for Calispell Creek shall be such that the fishway is operational at the full range of flows and water surface elevations and/or during the time frame recommended by the Resource Managers and approved by the Secretary, based on the likely presence of target fish species in Calispell Creek. Design and operation during periods when Calispell Creek exceeds the water quality criterion for temperature shall be consistent with section 401 (Clean Water Act) water quality certification issued by the Environmental Protection Agency or appropriate Tribal authority;
- E. The design plan shall include a provision for the installation of at least one Hidrostral ® or Archimedes type pump(s), as determined to be most effective for the downstream movement of target fish species, as recommended by the Resource Managers and approved by the Secretary. The pump shall have a variable speed drive, have a pumping capacity of no less than 80 cubic feet per second (cfs), and shall have a head capacity

equal to the maximum difference in surface water elevation between Calispell Creek upstream and downstream from the CCPP, for those periods in which the pump is operating;

- F. The design plan shall include a provision for the installation of a fish exclusion barrier (i.e., full screening) to prevent entrainment and impingement of target fish species  $\geq 4.0$  inches ( $\sim 100$ mm) in total length, at a point upstream from CCPP, as needed to guide target fish species past existing pumps to the Hidrostal <sup>®</sup> or Archimedes type pump(s). This fish exclusion barrier shall be comprised of fish exclusion screens;
- G. Fish exclusion screens will be designed to accommodate an approach velocity of 0.80 ft/s, over the gross screen surface area, as measured perpendicular and 3 inches from the screen (NMFS 1995a). The narrowest dimension in the screen openings shall not exceed  $\frac{1}{4}$  or 0.25 inches (6.35 mm) in narrow direction, as needed to prevent entrainment or impingement of target fish species  $\geq 4.0$  inches ( $\sim 100$ mm) in total length (NMFS 1995a). The design shall include a cleaning device necessary to maintain the fish exclusion screen free of debris and/or detritus; and
- H. When the stage of Calispell Creek downstream from the CCPP is lower than the stage of Calispell Creek upstream of the CCPP, *and* Calispell Creek is free flowing through existing culverts, the pump(s) may be shut down, provided that target fish species (at any life stage) are free to move through the culverts.

### **1.6.2 CCPP Downstream Fishway – Final Design Plans and Specifications**

Within twelve (12) months after notification by the USFWS, that the Conceptual Design Investigation and Construction Plan for downstream fish passage facilities and measures has been approved (see section 1.6.1 above), the Licensee shall at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, the Final Design Plans and Specifications for the permanent downstream fish passage facilities and measures at the CCPP.

### **1.6.3 CCPP Downstream Fishway – Operations and Maintenance Plan**

Within twelve (12) months after notification by the USFWS that the Conceptual Design Investigation and Construction Plan for downstream fish passage facilities and measures has been approved (see section 1.6.1, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, an operations and maintenance plan for the downstream fish passage facilities and measures describing anticipated operations, maintenance, schedules, inspections, contingencies and emergency operating measures (including procedures for notifying the Resource Managers of fish delay, injury, and/or mortality as a result of daily observations) for the downstream fishway at CCPP.

#### **1.6.4 CCPP Downstream Fishway – Monitoring and Reporting Plan**

Within twelve (12) months after notification by the USFWS, that the Conceptual Design Investigation and Construction Plan for the downstream fishway has been approved (see section 1.6.1, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, a plan for monitoring the downstream fish passage facilities at the CCPP. The monitoring plan shall require that the Licensee submit an annual monitoring report to the Resource Managers for the duration of the operation of the Box Canyon Hydroelectric Project's license and any subsequent annual license, and shall include at a minimum, the following information:

- A. The number of fish, by species, size, age class, and date observed at the downstream fishway;
- B. The number of hours and days the fishway was in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;
- C. A continuous (minimum of an hourly measurement) record of water temperature, stream flow and velocity. Measurements shall be taken at a location at or near the entrance to the fishway as required to accurately monitor the effectiveness of the Hidrostal® or Archimedes type pump(s); and
- D. A record of daily observations by a qualified fish biologist (approved by the Resource Managers), about the physical condition of target fish using the downstream fishway. Such observations shall include, but not be limited to: delay, injury, descaling, disease, and/or any indication of predation by piscivorous birds or fish resulting from disorientation of the target fish species using the downstream fishway. The Licensee shall report any observed fish delay, descaling, disease, injury and/or mortality of fish to the Resource Managers within twenty-four (24) hours and shall immediately implement appropriate corrective measures consistent with the Operations and Maintenance Plan (see section 1.6.3, above).

#### **1.6.5 CCPP Downstream Fishway – Post-Installation Effectiveness Evaluation Plan**

Within twelve (12) months after notification by the USFWS, that the Final Design Plans and Specifications for the downstream fishway have been approved (see section 1.6.2, above), the Licensee shall, at its own expense and in consultation with the Resource Managers, develop and submit for review and approval by the Secretary, a plan for post-installation evaluations of the downstream fish passage facilities. The plan shall provide for documentation of the downstream movement of target fish species, as determined by radio-telemetry or other means of accurately tracking fish movement. The plan shall include methods for documenting fish passage efficiency, passage time, mortality, and injury for a representative range of operating scenarios and flow releases from the CCPP.

### **1.6.6 CCPP Downstream Fishway – Installation and Operation**

Within twenty-four (24) months after notification by the USFWS that the Final Design Plans and Specifications for the downstream fishway have been approved (see section 1.6.2 above), the Licensee shall, at its own expense, install and commence operation of the downstream fishway at the CCPP. The installation and operation of the downstream fishway shall be conducted in accordance with approved plans to provide effective (safe and timely) downstream passage for juvenile, sub-adult, and adult target fish species  $\geq 4.0$  inches (~100 mm) in total length. The Licensee shall notify the Resource Managers in writing when the permanent downstream fishway becomes operational. The Licensee shall operate, maintain and monitor the downstream fishway in accordance with the approved Downstream Fishway Operations and Maintenance Plan (see section 1.6.3 above). In addition, the Licensee shall operate the downstream fishway when target fish species are present in the Box Canyon Reservoir and Calispell Creek, as recommended by the Resource Managers and approved by the Secretary using the best scientific information available.

### **1.6.7 CCPP Downstream Fishway—Post-Installation Effectiveness Evaluations**

Upon start-up of the downstream fishway, the Licensee shall, at its own expense, conduct a Post-Installation Effectiveness Evaluation (see section 1.6.5., above). Within twelve (12) months of the installation of the downstream fishway, the Licensee shall submit to the Resource Managers, the results of the initial Post-Installation Effectiveness Evaluation. Results of the evaluation shall be submitted to the Resource Managers with sufficient time for review and comment prior to being filed with the Commission. If notified by the USFWS that deficiencies have been observed in the fishway, the Licensee shall provide the Resource Managers a remediation plan to rectify such deficiencies that includes a schedule for repeating the effectiveness evaluation within sixty (60) days after notification. Subsequent to approval of the remediation plan by the Secretary, the Licensee shall file the remediation plan with the Commission and shall implement the plan in accordance with its approved schedule. This effectiveness evaluation process shall continue until it is demonstrated that all reasonable measures necessary and appropriate to provide safe, timely and effective upstream fish passage have been performed to the satisfaction of the Secretary. The Licensee shall repeat post-construction evaluations of effectiveness of the permanent downstream fishway at least once every five (5) years for the duration of the license.

### **1.6.8 CCPP Downstream Fishway—Monitoring Report**

Within twelve (12) months after start-up of the downstream fishway, and annually thereafter, the Licensee shall submit to the Resource Managers a report summarizing the information obtained through monitoring as required by section 1.6.4, above.

## **1.7 Dispute Resolution**

The dispute resolution procedures set forth below shall apply to any dispute among the Parties related to the implementation of the fishway measures set forth at sections 1.2.1.10, 1.3.11 and 1.5.1.9 of this prescription. For the purpose of resolving issues related to these specific sections, the procedures set forth below shall supersede the dispute resolution procedures set forth in Appendix A, Condition 2(I) of the License. These procedures include: (1) an opportunity for informal dispute resolution; (2) mediation; and (3) policy-level review and resolution. The Secretary shall be the final decision maker for all disputes related to the implementation of the trout habitat restoration program or fishway measures.

### **1.7.1 Informal Dispute Resolution**

The Technical Committee shall strive to achieve consensus among its members. If consensus on an issue cannot be achieved because one or more members do not agree, any member of the Technical Committee may, in writing, request dispute resolution among the members of the Technical Committee. Upon receipt of a written request, the Licensee shall initiate good faith discussions among the members of the Technical Committee for a period not to exceed 30 days.

### **1.7.2 Mediation**

If the dispute is not resolved within 30 days after the receipt of a written request for dispute resolution, the disputing members of the Technical Committee may request the services of a neutral mediator. The Licensee shall arrange for the services of such mediator, either by employing a neutral third party or requesting the assistance of an ADR expert from one of the Federal agencies or FERC. The selected mediator must be agreed upon by the disputing members of the Technical Committee and must be available within a reasonable period of time. The mediator shall mediate the dispute for a period not to exceed 45 days from the date that his or her services were requested. In facilitating resolution of the dispute, the mediator may convene meetings or conference calls among the members of the Technical Committee and/or their immediate supervisors.

### **1.7.3 Policy Level Review and Resolution**

If the dispute is not resolved within 45 days after the request for mediation services, the Licensee shall convene a meeting of policy-level officials representing the FWS, BIA, Licensee and, if applicable, the entity raising the dispute. Other members of the Technical Committees with a strong interest in the outcome of the dispute may also send a policy-level official to this meeting. Such meeting shall occur within 60 days after the request for mediation services. The FWS and the BIA shall each determine the appropriate regional-level officials to represent their respective bureaus at the meeting. At the meeting, all participants will have an opportunity to discuss their views regarding the dispute and provide documentation in support of those views. Within 15 days of the meeting, the regional-level officials representing the FWS and BIA shall confer to

consider the issue and recommend resolution to their Regional Directors. The Secretary, through the Regional Directors of the FWS and BIA, shall make a final determination as to the outcome of the dispute and shall notify the appropriate entities within 30 days of the meeting of policy-level officials. The Secretary's final determination will be informed by the results of the dispute resolution process

## **APPENDIX D**

### **U.S. Department of the Interior (DOI) Conditions for Tribal Recreation Pursuant to Section 4(e) Of the Federal Power Act**

1. This section shall replace Department of the Interior (DOI) 4(e) condition 13 in its entirety.
2. Within 30 days of the later of the dismissal of the petitions for review by the Court of Appeals and the dismissal of the complaints by the District Court, the Licensee shall make a one-time payment to the Kalispel Tribe of Indians of \$300,000.00 for the Tribe to use for construction or improvement of one or more of the following recreational facilities: the Pow Wow Grounds, the Kalispel Boat Launch, and Manresa Grotto Beach. The use of the funds for those purposes shall be subject to the sole discretion of the Kalispel Tribe of Indians.
3. Within 30 days of the later of the dismissal of the petitions for review by the Court of Appeals and the dismissal of the complaints by the District Court, and on each anniversary date thereafter during the term of the new License, including any subsequent annual licenses, the Licensee shall make payments of \$30,000.00 to the Kalispel Tribe of Indians to fund daily operation and maintenance of any or all of the facilities identified in paragraph 2. The use of the funds for those purposes shall be subject to the sole discretion of the Kalispel Tribe of Indians.
4. Within 30 days of the later of the dismissal of the petitions for review by the Court of Appeals and the dismissal of the complaints by the District Court, and on each anniversary date thereafter during the term of the new License, including any subsequent annual licenses, the Licensee shall make payments of \$10,000.00 to the Kalispel Tribe of Indians to fund major maintenance of any or all of the facilities identified in paragraph 2. The use of the funds for those purposes shall be subject to the sole discretion of the Kalispel Tribe of Indians.
5. The amounts specified in paragraphs 2, 3 and 4, above, shall be as of the year 2007, subject to adjustment as provided in Appendix E.

## APPENDIX E

### Escalation of Costs and/or Payment Amounts

#### Escalation of Costs

Unless otherwise indicated, all costs or payment amounts specified in dollars shall be deemed to be stated as of the year 2007, and Licensee shall escalate such sums as of January 1 of each following year (starting in January 2008) according to the following formula:

$$AD = D \times \frac{(CPIUC - CPIUB)}{(CPIUB)} + D$$

#### WHERE:

|       |   |   |
|-------|---|---|
| AD    | = | Adjusted dollar amount as of January 1 of the year in which the adjustment is made. |
| D     | = | Dollar amount prior to adjustment.  |
| CPIUC | = | Consumer Price Index-Urban Current Year   |
| CPIUB | = | Consumer Price Index-Urban Base Year (2007) = 201.60                                |

“CPIUC” is the annual value for the preceding calendar year published for the Consumer Price Index-Urban by the U.S. Department of Labor, Bureau of Labor Statistics in the table *Consumer Price Index All Urban Consumers – (CPI-U) U.S. City Average All Items* (being on the basis of 1982-84 = 100) in January of the current year. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Labor Statistics may be substituted by the Parties. If the base year for CPIU is changed or if publication of the index is discontinued, the Parties shall promptly make adjustments or, if necessary, select an appropriate alternative index to achieve the same economic effect.