APPENDIX A

THE U.S. DEPARTMENT OF THE INTERIOR MODIFIED CONDITIONS FILED WITH THE FEDERAL ENERGY REGULATORY COMMISSION PURSUANT TO SECTION 4(e) OF THE FEDERAL POWER ACT FOR THE BOX CANYON HYDROELECTRIC PROJECT PEND OREILLE RIVER, WASHINGTON[1]

1. Box Canyon Section 4(e) Implementation and Monitoring Plan and Annual Reporting

A. Section 4(e) Implementation and Monitoring Plan

1. Within 120 days after license issuance, the Licensee, in collaboration with the Department of the Interior, the Kalispel Indian Tribe ("Tribe"), the Washington Department of Fish and Wildlife, the U.S. Forest Service, and other relevant resource agencies, shall prepare and submit for Secretarial approval an outline of a Section (e) Implementation and Monitoring Plan (IMP) providing specific information about how the Licensee intends to comply with the requirements specified in the Department's Section 4(e) Conditions Nos. 3 through 13. In its submission, the Licensee shall include documentation of its collaboration with the above entities.

2. Subject to the same requirements as the outline described in paragraph (A) (1), the Licensee shall submit a final IMP within 1 year after license issuance. Subsequent to Secretarial approval, the Licensee shall submit the IMP to the Federal Energy Regulatory Commission (Commission).

3. The IMP shall include the items listed below. More detail on what each item shall include is provided under the specific condition numbers listed in parentheses.

   a. Sampling strategy and procedures to assess fish stranding resulting rom drawdowns (Condition No. 3);

   b. Plan for Geotechnical Engineering studies (Condition o. 3);

   c. Erosion monitoring plan (Condition No. 3)

[1] By letter dated May 20, 2004 unless otherwise indicated.

d. Trout Assessment and Restoration Plan (Condition No. 6);

e. Cultural resources Management Plan (Condition No. 8);

f. Plan to monitor cultural resources on the KIR (Condition No. 9)

4. In all elements of the IMP, the Licensee shall include:

a. Scientifically rigorous and current methodologies.

b. Specifically quantified program goals;

c. Criteria by which to measure progress towards program goals;

d. Procedures for redirecting effort, including funding, as necessary under adaptive management to achieve the stated goals;

e. Schedule for implementation of activities to achieve goals;

f. A monitoring plan to evaluate progress towards achievement of goals; and

g. A format for reporting annually, as required in paragraph (B), on i) progress made during the previous year and ii) the activities planned for the forthcoming year.

B. Annual Reporting

Each year on the anniversary date of the Secretary's acceptance of the IMP, the Licensee shall submit to the Secretary an Annual Report detailing the work accomplished the previous year, progress made toward program goals, plans or suggestions to redirect effort per adaptive management with a detailed justification of why this is warranted, and documentation of collaboration with the Tribe and resource agencies and their responses.

1. The Annual Report shall include:

a. Written verification from the USGS that the Licensee's gage at the Box Canyon Dam headwater is consistent with USGS quality assurance and quality control procedures for hourly water level measurement (Condition 3).

b. Documentation and records describing any emergencies or other operating condition(s) beyond the control or knowledge of the

Licensee occurring in a given year that require the Licensee to deviate from the drawdown limitation in Condition No. 3, as well as resulting Project operations that occurred for the duration of the deviation(s) (Condition No. 3);

c. Summary and analysis of monthly operational reports (Condition No. 3);

d. Fish stranding data and analysis in relevant years following drawdown events (Condition No. 3);

e. Fish stranding data and analysis in relevant years following drawdown events that occur after trout population levels reached, respectively, 25%, 50%, 75%, and 100% of the reservoir target levels specified in Condition No. 5 (Condition No. 3).

f. Results of geotechnical engineering studies (Condition No. 2);

g. Updates to slope stability model using data from erosion monitoring (Condition No. 3);

h. Results of biannual erosion monitoring and results of all other monitoring, studies, assessments, remedial measures, and other items (Condition No. 3);

i. Results of water quality monitoring (Condition No. 4);

j. Results of TDG monitoring, including physical and biological parameters (Condition No. 4);

k. Summary of any non-compliance reports filed in a given year (Condition No. 4);

l. Reports on restoration, enhancement, or supplementation measures implemented pursuant to the TARP, trout population assessment results, comparison against target levels, and calculation of TRF contribution (Condition No. 6);

m. Updated TARP in relevant years (Condition No. 6);

n. Full accounting of all transactions under the Trout Remediation Fund, including funds deposited, detailed description of funds expended, and interest earned (Condition No. 6);

o. Progress made towards replacing lost wildlife habitat AAHUs and cottonwood habitat, and results of monitoring replace efforts (Condition No. 7);

p. Results of all cultural resource monitoring (Condition No. 9)

q. Report on progress made towards ethnobiology study (Condition No. 12);

r. Results of recreation surveys in relevant years (Condition 13); and

s. An Annual Work Plan detailing the coming year's expected activities. The work plan must provide sufficient detail for the Secretary to determine whether the Plan continues to provide for the protection and utilization of the reservation. The Annual Work Plan shall include but not be limited to: i) detailed information on methods to be employed; ii) schedule of activities; and iii) explanations of how planned activities will help attain program goals.

2. The Secretary will review the Annual Report and reserves the authority to accept, reject, or otherwise alter the document, in whole or in part, to ensure the adequate protection and utilization of the KIR. Subsequent to Secretarial acceptance of the Annual Report the Licensee shall submit the report to the Commission.

2. Box Canyon Resource Technical Committee

A. Formation and Participation

Within 15 days after license issuance, the Licensee shall request in writing that the U.S. Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, the United States Forest Service, the Washington State Department of Fish and Wildlife, the Kalispel Tribe of Indians, the Washington State Department of Ecology, the Idaho Department of Fish and Game, and the U.S. Environmental Protection Agency designate representatives to participate with the Licensee as members of a Box Canyon Resource Technical Committee (Technical Committee). The Licensee shall request that the above entities advise the Licensee in writing within 30 days of the request whether they wish to participate in the Technical Committee and, if so, that they have designated a representative for that purpose. Within 60 days after license issuance, the Licensee shall convene the first meeting of the Technical Committee. Thereafter, the Technical Committee shall determine the frequency and location of its meetings, as well as other procedural aspects of its operation not specifically defined in this condition. The Technical Committee shall function, as

necessary, for the term of the license and any subsequent annual licenses. Each member with a representative on the Technical Committee may designate replacements or make substitutions for its representative at any time.

B. Duties and Functions

The duties of the Technical Committee shall include, but are not limited to:

1. guiding and advising the Licensee in the development and preparation of plans and reports to be submitted by the Licensee for approval of the Secretary of the Interior (Secretary), as required by these conditions.

2. reviewing and providing comment on drafts of plans and reports required by these conditions;

3. identifying, developing, and reviewing specific measures – including goals, methods, schedules, and costs for implementing such measures – that may be appropriate to carry out the requirements of these conditions;

4. identifying, developing, and reviewing plans for implementing identified measures;

5. identifying, developing, and reviewing short- and long-term monitoring necessary to ensure that proposed measures achieve desired results;

6. ensuring that all proposed measures adhere to scientifically sound principles and that they are implemented in a cost effective manner; and

7. preparing and reviewing scopes of work and proposals to implement the measures contained in such scopes of work, and making recommendations to the Licensee as to the selection of contractors and/or means of implementing proposed measures.

C. Scopes of Work

Except as otherwise provided herein, the Technical Committee shall prepare a detailed statement defining the scope of work for each project to be carried out pursuant to plans developed and approved in accordance with these conditions. Each scope of work may include, but may not be limited to, a description of the tasks to be accomplished; a description of the methods to be employed and a schedule for each task; a proposed budget for each task and project; monitoring and oversight by the Technical Committee; and preparation of interim and final reports. Each scope of work may also identify potential bidders or entities that

members of the Technical Committee believe may be interested in the type of project being proposed.

D. Selection and Approval of Contractors

All measures required by these conditions shall be carried out, as agreed to by the Technical Committee, a) by the Licensee, through a qualified contractor selected by competitive bidding, "sole source" procedures, or other lawful contracting procedures, or b) by any of the other members of the Technical Committee, in accordance with the requirements of applicable law, including but not limited to the Interlocal Cooperation Act, ch. 39.34 RCW. The Technical Committee may recommend the persons, entities, or specific arrangements for carrying out any requirement of these conditions, and the Licensee shall follow that recommendation unless it provides the Technical Committee in writing sufficient information to show that such arrangement would be unlawful or that such persons or entities would not be qualified to perform the work.

E. Bidding and Procurement

The procedures set forth below shall apply to the execution of any contracts proposed to be let by the Licensee pursuant to competitive bidding to carry out the requirements of these conditions:

1. The Licensee shall advertise for bids or statements of qualifications for each project in accordance with applicable procurement laws. Any member of the Technical Committee may submit a bid or statement of qualification in response to the Licensee's advertisement or request. The Licensee shall submit all bids or statements of qualification to the non-bidding members of the Technical Committee for evaluation, and shall request that the non-bidding members make a joint recommendation to the Licensee as to the selection of a potential contractor and/or the terms of the contract to accomplish the project. As soon as is practicable during the evaluation of bids and statements of qualification, and prior to any recommendation, the Licensee shall provide the non-bidding members of the Technical Committee with any and all reasons known to it that a bidder may not be qualified to perform the proposed project or should otherwise lawfully be excluded from consideration.

2. If the Licensee accepts the recommendation described in paragraph (E) (1), the Licensee shall enter into a contract with the selected contractor to carry out the project in accordance with the scope of work.

3. If the Licensee does not accept the recommendation described in paragraph (E) (1), it shall state its reasons in writing. The Licensee shall submit the bids or statements of qualification of alternative potential contractors to the non-bidding members of the Technical Committee for evaluation and shall request that the non-bidding members make a joint recommendation to the Licensee that attempts to resolve the Licensee's concerns. The Licensee shall repeat this process as necessary until the non-bidding members of the Technical Committee have made a recommendation that is accepted by the Licensee.

F. Determinations Regarding Proper Expenditure of Funds

Any and all funds provided by the Licensee under these conditions shall be spent only on measures for the protection, enhancement, or mitigation of erosion control, water quality, fish and wildlife resources, cultural resources, recreation, and other resources, as provided in these conditions. Except where the precise amount of funding to be provided by the Licensee is specified by these conditions, funding for particular measures designed to carry out the requirements of these conditions shall be determined by the Technical Committee.

G. Administration of Contracts

The Licensee shall administer each contract in accordance with applicable procurement laws and shall provide an annual report to the Technical Committee and the Commission, documenting all project activities and payments made to contractors for work performed pursuant to the requirements of these conditions. The Licensee shall make available for inspection by the members of the Technical Committee and by the Secretary copies of all contract documents, reports and products associated with work performed pursuant to the requirements of these conditions. The Licensee shall provide copies of these items upon reasonable notice. The Licensee shall be responsible for funding any and all costs of contract administration separate and apart from the funds required by these conditions.

H. The Technical Committee may form technical subcommittees, and may delegate responsibilities to such subcommittees or individual members, provided that the Licensee shall have the right to be represented on any technical subcommittee. All subcommittee decisions are subject to the terms of paragraphs (A)-(G) of this condition. The Licensee shall provide reasonable administrative, clerical, and support facilities for the Technical Committee and any subcommittees separate and apart from the funds required by these conditions, but the Licensee shall be responsible for funding only its own participation on the Technical Committee and any subcommittees.

I. Dispute Resolution

Unless otherwise agreed to by the members of the Technical Committee, the following provisions shall govern the resolution of disputes:

1. In performing its duties and function, and in carrying out any other requirements in paragraphs (A)-(H), the Technical Committee shall strive to achieve consensus. In the event that consensus cannot be achieved, to the extent practicable, the Technical Committee shall resolve matters pursuant to a majority vote of the Technical Committee members.

2. Notwithstanding the provisions of paragraph (I) (1), any member of the Technical Committee may, in writing, raise a dispute to the other members of the Technical Committee. Upon receipt of a written dispute, the members of the Technical Committee shall engage in good faith discussions to resolve the dispute for a period not to exceed 10 days from the date that the written dispute is received by the Technical Committee.

3. In the event that resolution cannot be reached by the Technical Committee, the members of the Technical Committee shall engage the services of a mutually agreed upon third party facilitator with expertise regarding the matter in dispute. The Technical Committee and the facilitator shall agree on the means and schedule for achieving resolution under this process. The Licensee shall pay for the cost of the facilitator.

J. Nothing in the condition shall be construed to limit or substitute for the authority of the Secretary, with regard to section 4(e) conditions, or the Federal Energy Regulatory Commission, with regard to any conditions of the license.

3. Erosion Control and Fish Stranding Prevention

A. Except as provided in paragraph (B), the Licensee shall, for the term of the License and any subsequent annual licenses, operate the Project so that at all times, the rate of drawdown of the Box Canyon Reservoir water surface stage does not exceed 3 inches within any one-hour period, as proposed by the Licensee in its Final License Application. Compliance with this requirement shall be measured at the Licensee's gage at the Box Canyon Dam headwater. As part of the Annual Report required by Condition No. 1, the Licensee shall submit to the Secretary of the Interior (Secretary) verification from the United States Geological Survey (USGS) that this gage is consistent with USGS quality assurance/quality control procedures for hourly water level measurement.

B. In the event of emergencies or other operating conditions beyond the Licensee's control or knowledge, the Licensee may deviate temporarily from the 3-inch-per-hour drawdown rate limit, provided:

1. The Licensee shall immediately notify the Secretary, the Kalispel Indian Tribe ("Tribe"), and the Federal Energy Regulatory Commission ("Commission") of the emergency or other operating condition beyond the Licensee's control or knowledge that caused deviations from the 3-inch-per-hour drawdown rate limit.

2. Within seven (7) days of the notification required by paragraph (B) (1), the Licensee shall provide the Secretary, the Tribe, and the Commission documentation and records describing the emergency or other operating condition beyond the Licensee's control or knowledge that caused the deviation, as well as the resulting Project operations, including hourly stage and hourly change-in-stage (measured at the gage identified in paragraph (A)) that occurred for the duration of the deviation. The Licensee shall also include this information in the Annual Report for the year in which the deviation(s) occurred.

3. For purposes of this condition, the Licensee's compliance with the reservoir drawdown requirement of Plan E, as proposed in the Licensee's Final License Application, or with any other operating constraint shall not constitute an emergency or other operating condition beyond the Licensee's control or knowledge.

C. Monitoring Reports

The Licensee shall, on a monthly basis for the term of the license and any subsequent annual licenses, produce and submit to the Secretary, the Tribe and the Commission a monitoring report within 2 weeks after the end of each month. The Licensee shall also summarize the monthly monitoring reports and include them in the Annual Report required by Condition No. 1. The Licensee shall provide the following information in the monthly monitoring reports:

1. A record of monitoring data of the previous completed month, including spreadsheet tables and chart plots of actual measurements of hourly stage and hourly change-in-stage at the gage identified in paragraph (A); and

2. An evaluation of monitoring data collected for the previous month documenting compliance with, and any deviations from, the operating requirements of paragraph (A). In its evaluation of monitoring data, the Licensee shall include an examination of the stage and hourly change-in-

stage data with an explanation for any deviations from the operating requirements of this condition.

D. Fish Stranding Studies

1. As part of the Section 4(e) Implementation and Monitoring Plan required by Condition No. 1, the Licensee shall develop a study plan to assess fish stranding, and its effects on fish, that results from drawdown events during which the Licensee lowers the Box Canyon Reservoir surface stage for 12 or more consecutive hours at a rate of 3 inches per hour. In the plan, the Licensee shall include provisions for assessing the following effects:

    a. Stranding in high risk areas (e.g. Cusick Flats);

    b. Physical condition and stress factors (e.g. elevated water temperature, low dissolved oxygen, increased predation, lack of forage);

    c. Stranding by season, species, and life stage.

2. The Licensee shall assess fish stranding following each of the first 5 drawdown events described in paragraph (D)(1) that occur during the license term and any subsequent annual licenses.

3. Notwithstanding paragraph (D)(2), the Licensee shall assess fish stranding following each of the first 3 drawdown events described in paragraph (D)(1) that occur after trout production levels have reached, respectively, 25%, 50%, 75%, and 100% of the reservoir target levels specified in condition No. 6.

E. Geotechnical Engineering Studies

As part of the Section 4(e) Implementation and Monitoring Plan (IMP) required by Condition No. 1, the Licensee shall develop a plan for conduction geotechnical engineering studies on the Kalispel Indian Reservation (KIR), including:

1. Accurate field surveys of the shoreline profile at 8 erosion monitoring transects located on the KIR. The eight transects shall include the one at river mile 64.5 identified in the Erosion Monitoring Plan the Licensee filed in response to the Commission's February 27, 2001, Additional Information Request (AIR), as well as 7 additional erosion monitoring transects located on the KIR and identified through consultation with the Secretary and the Tribe. The Licensee shall coordinate the locations of the erosion monitoring

transects with data needs for other resources, such as cultural resources and fisheries resources, to maximize the value of the data collected.

2. Monitoring of shoreline embankment ground water elevations with respect to a fixed elevation reference to determine changes in the phreatic surface in response to reservoir level fluctuations.

3. Incorporation of soil/site parameters (including, but not limited to, stratigraphy, friction angle, cohesion, graduation, unit weight, permeability, and ground water level) into a quantitative slope stability model to determine how the 3 inch-per-hour drawdown rate limit affects KIR shorelines. The model can be calibrated with field measurements acquired during erosion monitoring (described in paragraph F) with updates included in the Annual Reports required by Condition No. 1.

F. Erosion Monitoring Plan

As part of the Section 4(e) Implementation and Monitoring Plan (IMP) required by Condition No. 1, the Licensee shall develop an Erosion Monitoring Plan (EMP) for Trust lands affected or potentially affected by the Box Canyon Hydroelectric Project (Project). The EMP shall incorporate the Licensee's erosion monitoring plan, as described in the Licensee's final License Application (FLA) and amended by the Licensee's June 27, 2001 Response to the Commission's February 27, 2001, AIR. As part of the EMP, the Licensee shall:

1. Establish monitoring stations on the KIR at the 8 erosion monitoring transects described in paragraph (E) (1).

2. Conduct biannual monitoring during early spring and early fall. In addition, within 7 days after an emergency event or operating condition beyond the control of the Licensee, or within seven days after a flood event with a recurrence interval of 20 years or greater (as measured at USGS gage number 12395500, Pend Oreille River at Newport, Washington), the Licensee shall conduct additional monitoring, the results of which the Licensee will provide to the Secretary, the Tribe, and the Commission within 14 days of the emergency event or operating condition.

3. Update the Erosion Occurrence Maps located at Figure 8.1 in Appendix E8-1 of the District's FLA 1) within 3 years after license issuance, 2) at intervals not greater than 5 years thereafter, and 3) within 1 year after a flood event with a recurrence interval of 20 years or greater.

4. Monitor areas that are currently actively eroding at low, moderate and high rates as described in Appendix E8-1 of the District's FLA.

5. Monitor areas for which the erosion hazard is moderate or high, as described in Appendix E8-1 of the District's FLA.

6. Identify the effects of Project operations, including drawdowns, on wave action, undercutting, bank toppling, slumping, ground water piping, and rilling and dry ravel erosion processes.

7. Identify the effects of project operation on riparian habitat loss caused by inundation, bank toppling and slumping.

8. Identify remedial measures.

G. The Secretary reserves the authority to adjust the drawdown limit in paragraph (A) or to require bank stabilization on the KIR based on information from the fish stranding, geotechnical or erosion monitoring studies. In this regard, the Secretary can either accept or reject the Licensee's recommendations for remedial measures.

4. Compliance With Applicable Water Quality Standards

A. The Licensee shall operate the Box Canyon Hydroelectric Project ("Project") so that, at all times during the license term and any subsequent annual licenses, it complies with applicable numeric and narrative federal, state, and tribal water quality standards and with all requirements of applicable certifications issued under section 401 of the Clean Water Act.

B. The Licensee shall provide the Secretary of the Interior ("Secretary") and the Kalispel Indian Tribe ("Tribe") copies of all plans developed pursuant to applicable 401 certifications.

C. Water Quality Monitoring

Within 1 year after license issuance, the Licensee shall begin monitoring water quality in the Box Canyon Reservoir and in Calispell Creek. Specifically, the Licensee shall:

1. Monitor water quality parameters including, but not limited to, pH, temperature, dissolved oxygen, total dissolved gases (TDG), and turbidity.

2. Use monitoring methods consistent with those used by federal, state, and tribal agencies that regulate water quality that are capable of discerning

Project impacts from background levels, and that are capable of representing spatial and temporal dimensions.

3. Use fixed automated instruments that meet industry standards for accuracy, that contain an internal datalogger capable of storing a minimum of four month's data.

4. Collect data hourly from fixed automated instruments at the following locations:

   a. Box Canyon Reservoir – RM 88.3 (Albeni Falls tailrace);

   b. Box Canyon Reservoir – RM 71.8 (mid-reservoir, near the Kalispel Indian Reservation);

   c. Calispell Creek – at or near the pump station(s) on the upstream side of the railroad dike;

   d. Calispell Creek – at or near the discharge point of the pump stations:

   e Box Canyon Reservoir – RM 37.9 (Box Canyon Dam forebay); and

   f. Boundary Dam Reservoir – RM 34.4 (Box Canyon Dam tailrace)

5. Report water quality monitoring data as part of the Annual Report required by Condition No. 1.

D. Monitoring for Total Dissolved Gas at Box Canyon Dam

1. The licensee shall conduct biological monitoring in accordance with conditions 10.2.1.3(D), 10.2.2.5(C), and 10.2.3.6(C) of the Department's section 18 fishway prescriptions for upstream passage at Box Canyon Dam and conditions 10.3.1.5(D) and 10.3.2.5(D) of the Department's section 18 fishway prescriptions for downstream passage at Box Canyon Dam. In addition to reporting requirements of the prescription, the licensee shall also submit results of biological monitoring as part of the Annual Report required by Condition No. 1.

2. Beginning with the first spill event after license issuance, the Licensee shall collect data on TDG pressure every 15 minutes during periods of spill using fixed automated instruments described in paragraph (C) (3) at locations identified in paragraphs (C)(4)(e) and (f). As part of the Annual Report

required by Condition No. 1, the Licensee shall provide monitoring data indicating the following:

a. The presence, levels, and duration of TDG pressure and percent saturation in the forebay and tailrace at Box Canyon Dam; and

b. Project-induced TDG and upriver cumulative contributions.

3. In addition to the monitoring required in paragraph (D) (2), the Licensee shall monitor TDG levels in the tailrace using automated instruments arranged in a spatial pattern adequate to quantify instantaneous TDG data along lateral and longitudinal lines through out the TDG mixing zone, describing both spatial and temporal variability in TDG exchange processes in relation to Project operations ("grid monitoring"). The Licensee shall coordinate grid monitoring with dam operations to collect data encompassing the entire range of flows (i.e. up to 90,000 cfs) and associated spillway gate configurations. The Licensee shall conduct grid monitoring once in the first spill season after license issuance, and then again at the end of the ten-year compliance period allowed under the State of Washington Department of Ecology's 401 certification. The Licensee shall provide this information in the Annual Report for the year(s) in which grid monitoring is performed.

E. Non-compliance Report

The Licensee shall immediately notify the Secretary and the Tribe of any non-compliance with any applicable state, federal or tribal water quality standard detected at any monitoring stations. Within 7 days after notification of such non-compliance, the Licensee shall submit to the Secretary, the Tribe, and the Federal Energy Regulatory Commission ("Commission") a Non-Compliance Report containing the following information:

1. Date(s) the non-compliance occurred;

2. Water quality data from the monitoring site(s) where non-compliance occurred;

3. Facts and circumstances that lead to the non-compliance event and any documentation thereof;

4 Measures the Licensee took or will take to correct the non-compliance and to prevent future non-compliance.

F. Request for Variance, Use Attainability Analysis, Site-Specific Criterion

In the event that the Licensee (1) requests a variance from applicable water quality standards for the Project or for the stretch of the Pend Oreille River that includes the Project; (2) requests to conduct a Use Attainability Analysis for removal of a designated use on the Pend Oreille River; or (3) submits an analysis for the development of new site-specific water quality criterion for any of the parameters identified in paragraph (C)(1), the Licensee shall provide the Secretary a copy of the request or analysis and any scientific justification used in support of such request or analysis.

1. If the Secretary determines, through analysis of scientific data that the operation of the Project according to the terms set forth in an approved variance, Use Attainability Analysis, or site-specific water quality criterion is adversely affecting aquatic species, in particular native salmonids, the Licensee shall consult with the Secretary and the Tribe for a period not to exceed six (6) months to develop additional measures to mitigate for the adverse effect caused by the Project. Such measures may include, but are not limited to, restoration of aquatic habitat, supplementation of native fish species, or other measures to benefit native fish species.

2. If at the end of the consultation period described in paragraph (F)(1), the Licensee, the Secretary, and the Tribe cannot agree on additional mitigation measures, the Licensee shall implement such additional mitigation measures as the Secretary deems necessary for the protection of the aquatic species of concern.

5. Fish Passage

For purposes of its authority under section 4(e) of the Federal Power Act (FPA), the Department of the Interior ("Department") adopts, and incorporates by reference, the prescriptions for upstream and downstream fishways submitted to the Federal Energy Regulatory Commission by the Department pursuant to section 18 of the FPA.

6. Trout Assessment and Restoration

A. Trout Assessment and Restoration Plan

As part of the Section 4(e) Implementation and Monitoring Plan required by Condition No. 1, the Licensee, in collaboration with the Kalispel Indian Tribe (Tribe), the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Washington Department of Fish and Wildlife, shall develop a Trout Assessment and Restoration Plan (TARP) indicating: 1) the methods the Licensee will use to

assess trout populations in the Box Canyon Reservoir and its tributaries to demonstrate progress toward the target trout population levels listed in Table 1; and 2) the strategies and implementation schedule the Licensee will use to produce naturally sustainable trout populations that achieve the target.

Table 1. Minimum targets levels for naturally sustainable trout populations.

		Trout Densities (No./Mi)				
		Bull Trout		Westslope Cutthroat Trout		
Area	Length (mi)	Resident	Migratory	Resident	Migratory	Other[a]
Box Canyon Reservoir[b]	55.7	435[d]	NA	870[c]	NA	695
Bull trout recovery tributaries[e]	208.2	450	50	90[c]	10	--
Other Tributaries[f]	119.7	135	15	270	30	--

[a] Rainbow and brown trout only.
[b] BCR densities are intended to provide an index to the success of tributary remediation since these fish will be recruited from the tributaries.
[c]Based on 44% of the total trout, the percent composition from historical creel records (1948 to 1956).
[d]Based on the target of bull trout being 50% of westslope cutthroat trout densities used in the Kalispel Natural Resource Department's fisheries management plan (KNRD 1997).
[e]Calispell, Indian, Mill, Cedar, Ruby, Tacoma, and LeClerc creeks.
[f]Cee Cee Ah, Cusick, Trimble, Gardiner, Middle, Lost, Maitlen, Renshaw, Big Muddy, Little Muddy, Exposure, Mickey, Davis, Skookum, Bracket, Kent, and McCloud creeks.

B. Implementation of TARP

1. Trout Habitat Restoration and Enhancement, and Supplementation

Beginning with the first field season after approval of the TARP, the Licensee, using funds contributed to the Trout Restoration Fund (TRF), described in paragraph (C), shall implement tributary habitat restoration, enhancement and/or supplementation measures in accordance with the TARP for the duration of the license term, including any annual licenses, or until target levels are met. Such measures shall include, but are not limited to:

a. Tributary habitat enhancement measures, including but not limited to, instream and riparian restoration, conservation and maintenance, removal of impassable barriers, purchase of land or conservation easements, and exotic species control;

b. Supplementation of natural production of native trout through conservation aquaculture using stock of appropriate local genetic makeup.

2. Trout Population Assessment Surveys

a. Three-Year Baseline Trout Population Assessment Survey

Beginning with the first field season after approval of the TARP, the Licensee shall conduct a three-year baseline trout population assessment survey ("Baseline TPAS"). Data from the three survey years shall be averaged to estimate trout population levels and shall be used to calculate the Licensee's TRF contribution.

b. Three-Year Trout Population Assessment Surveys

After completion of the Baseline TPAS, the Licensee shall conduct three-year trout population assessment surveys every five (5) years for the duration of the license (see Table 2), including any annual licenses, or until target levels are met. Data from the three survey years of each TPAS shall be averaged and used to determine progress toward target levels and to calculate the Licensee's TRF contribution until the completion of the next TPAS.

Table 2. Example of TARP implementation schedule for first 20 years of license.

	License Year																			
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 etc.
TARP Development and approval	X																			
3-year trout population assessment survey		X	X	X						X	X	X						X	X	X

Trout habitat restoration, enhancement, supplementation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Licensee contributions to TRF	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

c. The Licensee shall assess trout population levels using methods that are accepted, and commonly used, in fisheries science. Assessments must include both adfluvial (migratory) and resident fish, and population estimates must differentiate between these two life history types.

3. Within 3 months after completion of each TPAS described in paragraph (B)(2)(b), he Licensee shall update the TARP, identifying strategies for achieving target trout population levels and providing a schedule according to which those strategies will be implemented for the next eight years.

4. Costs associated with developing and updating the TARP and costs associated with population assessments shall be borne by the Licensee without using the Trout Restoration Fund.

C. Trout Restoration Fund

1. Throughout the term of the license and any annual licenses, the Licensee shall contribute to a Trout Restoration Fund (TRF). The amount of the Licensee's annual contribution shall be determined using the following formula:

[TARGET(A/S/S/C) – OBSERVED(A/S/SC)] * HL * RV

Where:

TARGET = Targeted species-specific trout densities from Table 1 (no/mi);

OBASERVED = Observed species-specific trout densities based on assessments (no/mi);

A/S/SC = A = Area in question from Table 1 (bull trout recovery tributaries, or other tributaries);S = Species (bull trout, westslope cutthroat trout, or others [rainbow and brown trout, not to include brook trout]);SC = size category based on proportional stock density ratio (stock vs quality size);

Proportional Stock Density, defined as [number of fish > = quality length] / [number of fish >= stock length];

HL = Habitat length (in miles) of the area in question; and

RV = Replacement value based on American Fisheries Society recommendations, adjusted to current U.S. dollars value for the appropriate year.

2. Within 30 days after license issuance, the Licensee shall contribute $1.426 million to the TRF. This amount shall constitute the Licensee's entire contribution to the TRF for the first 4 years of the license. If the Baseline TPAS is not completed at by the end of Year 4, the Licensee shall contribute $356.441 each year on the anniversary date of its first contribution until completion of the Baseline TPAS. Upon completion of the Baseline TPAS, the Licensee shall calculate the contributions it will make to the TRF until the completion of the next TPAS. Thereafter, the Licensee shall calculate its contribution to the TRF after completion of each TPAS.

3. Funds in the TRF shall be expended exclusively for use in achieving the target trout population levels listed in Table 1, using measures described in paragraph (B)(1). Funding levels for tributary enhancement measures and supplementation shall be weighted in accordance with strategies identified, and the implementation schedule set forth, in the TARP.

4. Once the targets in Table 1 are met, the Licensee shall contribute not less than $50,000 annually to the TRF for operation and maintenance of completed tributary restoration and enhancement projects.

5. Except as provided in paragraph (C)(2), the Licensee shall make all contributions to the TRF on or before January 15 of each year of the license term, including any annual licenses. Funds shall be placed in a separate interest-bearing account, held by the Licensee and managed by a fiduciary of its choosing pursuant to an escrow agreement that provides for exclusive use of such funds for the benefit of the fishery of the Box Canyon Reservoir and associated tributaries. The escrow agreement may be reviewed by the Secretary at his/her option. Funds not spent in the year in which they are deposited shall be carried forward with accrued interest for subsequent

expenditure in accordance with the TARP. All amounts in this condition are stated in 2002 U.S. dollars and shall be adjusted at time of payment to current dollars using the Consumer Price Index (CPI).

6. The Licensee shall obtain all necessary permits and shall comply with all applicable state and Federal planning requirements, including the National Environmental Policy Act. Costs associated with these efforts, and all other administrative and legal costs associated with implementing the TARP, shall be borne by the Licensee without using the Trout Restoration Fund.D. The Licensee shall include results of population assessment surveys, a comparison of existing population levels against target levels, and a record of the Licensee's calculations regarding its TRF contribution as part of the Annual Report for the year in which surveys are completed and contributions are calculated.

E. The Secretary reserves the authority to modify target levels during the license period based on results of fisheries assessments, population response to tributary enhancement and supplementation measures, fisheries management strategy changes, and new information that may become available. Modifications may include, but are not limited to, adjusting species-specific target densities and size structures, and shifting target levels from native to replacement stocks. In the event the Secretary makes any of the above modifications, the Licensee shall modify the TARP accordingly.

7. Replacement of Wildlife Habitat Lost on Kalispel Indian Reservation

A. Within 1 year after license issuance, the Licensee, in collaboration with the Kalispel Indian Tribe ("Tribe"), shall identify:

1. 6 acres of sandbar habitat on the Kalispel Indian Reservation (KIR), or other lands owned by the Tribe, that are capable of producing a cottonwood riparian community.

2. Lands on the KIR, or other lands owned by the Tribe, that are suitable for replacing the following habitat values lost on the KIR:

   a. Deciduous Forest - 8 AAHUs
   b. Pond - 8.47 AAHUs
   c. Emergent and/or wet Grassland - 65.89 AAHUs

If it is impossible to replace lost habitat values on the KIR, or on other lands the Tribe owns, the District may use lands it owns after receiving concurrence from the Secretary of the Interior and the Tribe.

B. Within 1 year after identifying lands described in paragraph (A), the Licensee shall, in collaboration with the Tribe, develop a scope of work for the restoration, enhancement, and annual operation and maintenance of cottonwood habitat and other habitat values identified pursuant to the requirements of paragraph (A).

C. The Licensee shall implement the scope of work developed pursuant to paragraph (B) and report all efforts and progress made toward achieving cottonwood restoration and target AAHUs in the Annual Report required by Condition No. 1.

8. Identification, Evaluation, Assessment and Treatment; Cultural Resource Management Plan

In addition to complying with all federal and state cultural resource protection laws, the Licensee shall:

A. In consultation with the State Historic Preservation Officer (SHPO) and the Kalispel Indian Tribe ("Tribe"), identify cultural resource sites on trust lands located on the Kalispel Indian Reservation (KIR) within the Box Canyon Hydroelectric Project ("Project") boundary.

B. Evaluate for eligibility on the national Register of Historic Places all identified cultural resource sites on trust lands located on the KIR within the Project boundary. In consultation with the SHPO, and guided by the Secretary of the Interior's ("Secretary") Standards and Guidelines for Evaluations, the Licensee shall apply the National Register criteria (36 C.F.R. Part 60) to identified cultural resource sites that have not been previously evaluated for National Register eligibility.

C. Assess effects of the Project on all historic and traditional cultural properties on trust lands located on the KIR within the Project boundary. If there are historic or traditional cultural properties which may be affected by the Project, the Licensee shall notify the Tribe, the Secretary, and the SHPO and invite their views on the effects and assessment of adverse effects. In meeting the requirement of this condition, the Licensee, in consultation with the Tribe, the Secretary, and the SHPO, shall apply the criteria of adverse effect (36 C.F.R. § 800.5(a) (1).

D. With the approval of the Tribe and the concurrence of the Secretary, determine the appropriate treatment and protection of adversely affected historic and traditional cultural properties located on the KIR within the Project boundary. In making this determination, the Licensee shall consult with the Tribe, the Secretary, and the SHPO to develop and evaluate alternatives or modifications to the Project that

could avoid, minimize, or mitigate adverse effects to such historic and traditional cultural properties.

E. Within one (1) year after license issuance, develop and adhere to a Cultural Resources Management Plan (CRMP)[2] that will address the identification, evaluation, assessment, and treatment of historic and traditional cultural properties on trust lands located on the KIR within the Project boundary. In doing so, the Licensee shall consult with the Tribe, the Secretary, and the SHPO. Prior to completing the CRMP, the Licensee shall obtain the concurrence of the Secretary. The CRMP shall be included in the Section 4(e) Implementation and Monitoring Plan required by Condition No. 1.

F. In the event that the Tribe establishes a Tribal Historic Preservation Officer (THPO), such THPO shall be consulted relative to the exercise of all responsibilities of the SHPO for purposes of paragraphs A-E of this condition.

9. Cultural Resource Monitoring

A. Within 1 year after license issuance, the Licensee, in consultation with the SHPO, the Secretary of the Interior, and the Kalispel Indian Tribe, shall develop and fund a program of ongoing cultural resources monitoring of trust lands located on the Kalispel Indian Reservation within the Box Canyon Hydroelectric Project ("Project") boundary. Specific monitoring procedures and intervals of study shall be appropriate to the nature and intensity of potential Project impacts, and shall include, but not be restricted to:

1. Monitoring, per the CRMP, of known cultural resource sites (including historic and traditional cultural properties and archaeological sites) to assess impacts from Project activities, recreational use, vandalism, or any other impacts;

2. Periodic reconnaissance (at intervals of no less than every 5 years) of the impoundment shorelines to assess damage to known cultural resources and to identify and avoid adverse project effects to previously unknown cultural resources exposed by erosion; and

3. Monitoring of all ground-disturbing activities by the Licensee in relation to the Project to identify, and avoid adverse effects to, previously unknown cultural resources.

---

[2] This is identified as a Historic Properties Management Plan (HPMP) in the FEIS.

B. Monitoring shall be performed by a qualified archaeologist, anthropologist, or historic structures specialist, as appropriate, retained by the Licensee at its own expense.

C. The Licensee shall report results of all monitoring activities in the Annual Reports required by Condition No.1, provided that the Licensee shall not make available to the public sensitive information, such as nature and location, related to any archaeological resources identified through monitoring.

10. Management of Remains and Records Recovered from Trust Lands

A. The Licensee shall fund the initial processing, cataloging, and accessioning of material remains and associated records recovered and developed as a result of cultural resource surveys or excavations on trust lands located on the Kalispel Indian Reservations (KIR) within the Box Canyon hydroelectric Project ("Project") boundary pursuant to 36 CFR § 79.7(d).

B. The Licensee shall fund the storage, inspection, inventory, maintenance, and conservation of material remains and associated records recovered and developed as a result of cultural resource surveys or excavations on trust lands located on the KIR within the Project boundary pursuant to 36 CFR § 79.7(d).

C. The Licensee shall fund the long-term curatorial services described in paragraphs (A) and (B) in and by a suitable repository that means the requirements of 36 CFR § 79.9. At such time as the Kalispel Indian Tribe establishes a suitable repository on the KIR, the Licensee shall fund the storage in that facility of all collections of material remains and associated records recovered from trust lands located on the KIR within the Project boundary.

11. Human Remains

If, as a result of either its operation of the Box Canyon Hydroelectric Project ("Project") or its compliance with any condition of the license, the Licensee inadvertently disinters or discovers human remains on trust lands located on the Kalispel Indian Reservation (KIR) within the Project boundary, the following conditions shall apply:

A. In addition to complying with all applicable requirements of 43 C.F.R. §§ 10.1-10.7, the Licensee shall immediately cease work in the area of the disinterment or discovery; shall promptly protect the remains from public view and from exposure to weather; and shall immediately notify the Kalispel Tribal Police and the Kalispel Business Council.

B. The Licensee, at its own expense, shall retain a qualified archaeologist to determine whether any additional human remains exist on the KIR within the Project boundary in the area of the discovered human remains. If so, the archaeologist shall also determine whether, as a result of either the Licensee's operation of the Project or its compliance with any condition of the license, the additional human remains are in danger of being disinterred.

C. The Licensee shall consult with the Kalispel Indian Tribe (Tribe) to determine appropriate measures to secure, protect, and prevent additional damage to any identified remains or associated graves or cemeteries, and at its own expense, shall implement such measures deemed necessary by the Tribe.

12. Ethnobiological Study

Within 1 year after license issuance, the Licensee shall deposit in an interest-bearing account held by the Licensee and managed by a fiduciary of its choosing pursuant to an escrow agreement that provides for exclusive use of such fund by the Kalispel Indian Tribe (Tribe), funding in an amount to be determined by a scope of work developed by the Tribe and approved by the Licensee for an ethnobiological study to salvage traditional knowledge of plant and animal species affected by the Box Canyon Hydroelectric Project. The Licensee, after consultation with the Tribe, shall report progress made toward completing the study in the annual Report required by Condition No. 1.

13. Recreation Resources

A. Within 60 days of license issuance, the Licensee shall deposit in an interest-bearing account held by the Licensee and managed by a fiduciary of its choosing pursuant to an escrow agreement that provides for exclusive use of such monies by the Tribe, funding in the amount of $457,800 for construction of recreational facilities at the Pow Wow Grounds and the associated Kalispel Boat Launch and at Manresa Grotto Beach. The escrow agreement may be reviewed by the Secretary at his/her option.

B. Each year on or before the anniversary date of license issuance, the Licensee shall deposit in the account described in paragraph (A) funding in the amount of $38,000 for daily operation and maintenance to sustain the facilities in good service and repair over the term of the license and any subsequent annual licenses.

C. Each year on or before the anniversary date of license issuance, the Licensee shall deposit in the account described in paragraph (A), funding in the amount of $19,786 for major maintenance to sustain facilities in good service and repair over the term of the license and any subsequent annual licenses.

D. All funding amounts in this condition are stated in 2002 U.S. dollars and shall be adjusted at time of payment using the Consumer Price Index (CPI) for the appropriate year. All interest earned on these monies shall be made available to the Tribe for purposes of construction, operation, and maintenance of the recreation facilities in accordance with this condition.

E. The Licensee shall conduct recreation use surveys at the above-named recreation sites every 6 years during the term of the license and any subsequent annual licenses.

1. The Licensee shall complete surveys in sufficient time to include the prior year's peak season recreation data in the Licensee's Form 80 submission to the Federal Energy Regulatory Commission.

2. The Licensee shall use on-site observations and interviews to ascertain facility occupancy, use trends and visitor preference information at the above-named recreation sites, and shall include in its surveys a minimum of two non-holiday weekend days, two weekdays in July, and two of the same weekdays in August.

3. The Licensee shall report results of recreation use surveys in Annual Reports for the years in which surveys are completed.

F. If survey results indicate that use levels at the Pow Wow Grounds exceed 90% of capacity, determined by the higher of the two averages for weekdays or weekend day surveyed, the Licensee shall deposit in the account described in paragraph (A) funding in the amount of $49,000 for expansion of facilities at the Pow Wow Grounds.

14. Notice

For purposes of these conditions, whenever the Licensee is required to notify the Secretary of the Interior ("Secretary") or the Kalispel Indian Tribe ("Tribe"), the following shall constitute notice:

A. Written notice to the Secretary or the Secretary's designee or, in the case of the Tribe, written notice to the Tribal Chairman and the Director of the Kalispel Natural Resources Department.

B. In the event of an emergency requiring immediate notice to any of the above, a phone call to the above mentioned parties, as appropriate, followed by written notice required by paragraph (A).

15. Inspection

The Licensee shall allow representatives of the Kalispel Indian Tribe ("Tribe") and the Department of the Interior ("Department") access to, through, and across Box Canyon Hydroelectric Project lands and works for the purpose of inspecting facilities and monitoring data to ensure compliance with license conditions; provided that representatives of the Tribe and the Department show proper credentials, give the Licensee advanced notice of such inspections, and follow the Licensee's standard safety procedure when engaged in such inspections.

16. Secretarial Approval

For purposes of these conditions, whenever the Licensee is required to obtain the approval of the Secretary of the Interior (Secretary), the Secretary may accept or reject, in whole or in part, the Licensee's submission. In the event the Secretary rejects the Licensee's submission, or any portion of it, the Licensee shall have 45 days to resubmit the rejected portion.

17. Consistency with Section 4(e) of the Federal Power Act

The Licensee's performance of all requirements of these conditions shall be consistent with the purposes of section 4(e) of the Federal Power Act, 16 U.S.C.§ 797 (e), to provide for the adequate protection and utilization of the Kalispel Indian Reservation (KIR) and to ensure that the Box Canyon Hydroelectric Project does not interfere or is not inconsistent with the purposes for which the KIR was established.

18. Secretarial Authority

A. Regardless of whether a condition requires review or approval by the Secretary of the Interior (Secretary), the Secretary reserves the authority to review the Licensee's compliance with any requirement of these conditions. In the event that the Licensee is not in compliance with any requirement of these conditions, the Secretary may seek such permissible remedies as provided by the Federal Power Act and other applicable law.

B. The Licensee shall implement, upon order of the Federal Energy Regulatory Commission, such additional measures as may be identified by the Secretary, pursuant to the authority provided in section 4(e), as necessary to ensure the adequate protection and utilization of the Kalispel Indian Reservation.

APPENDIX B

Final (e) TERMS AND CONDITIONS
USDA Forest Service Pacific Northwest Region
January 2005

LICENSE CONDITIONS NECESSARY FOR PROTECTION AND UTILIZATION OF THE COLVILLE NATIONAL FOREST IN CONNECTION WITH THE APPLICATION FOR LICENSED PROJECT NO. 2042, BOX CANYON HYDROELECTIC PROJECT.

I. GENERAL

License articles contained in the Federal Energy Regulatory Commission's (Commission) Standard Form L-1 issued by Order No. 540, dated October 31, 1975, cover those general requirements that the Secretary of Agriculture, acting by and through the USDA Forest Service, considers necessary for adequate protection and utilization of the land and related resources of the Colville National Forest. Under authority of section 4(e) of the Federal Power Act (16 U.S.C. 797(e)), the following terms and conditions are deemed necessary for adequate protection and utilization of National Forest System lands and resources. These terms and conditions are based on those resources enumerated in the Organic Administration Act of 1897 (30 Stat. 11), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), and any other law specifically establishing a unit of the National Forest System or prescribing the management thereof (such as the Wilderness Act or Wild and Scenic Rivers Act), as such laws may be amended from time to time, and as implemented by regulations and approved Land and Resources Management Plans prepared in accordance with the National Forest Management Act. Therefore, pursuant to section 4(e) of the Federal Power Act, the following conditions covering specific requirements for protection and utilization of the National Forest System lands shall also be included in any license issued for the Box Canyon Hydroelectric Project (Project).

II. USDA FOREST SERVICE CONDITIONS

Condition No. 1 – Implementation and Modification of USDA Forest Service Conditions

The USDA Forest Service reserves the authority to modify its 4(e) terms and conditions if the term of the new license issued by the Commission exceeds 30 years.

Condition No. 2 - Implementation of Activities on National Forest Lands

The Licensee is precluded from commencing implementation of habitat or ground disturbing activities on National Forest System lands until authorized by the Forest Supervisor according to USDA Forest Service policy in effect at the time the project is undertaken.

Additional National Forest System Lands

If additional National Forest System lands are necessary for project purposes and are not included within the Project boundary, the Licensee shall obtain from the USDA Forest Service a special-use authorization for occupancy and use of those National Forest System lands. Within six months of license issuance and before any habitat or ground disturbing activities, the Licensee shall obtain from the USDA Forest Service and file with the Commission a special use authorization for occupancy and use of National Forest System lands.

Additional lands authorized for use by the Licensee in a new special-use authorization shall be subject to laws, rules, and regulations applicable to the National Forest System. The terms and conditions of the USDA Forest Service special-use authorization are enforceable by the USDA Forest Service under the laws, rules, and regulations applicable to the National Forest System. The special-use authorization also shall be subject to applicable sanctions and enforcement procedures of the Commission at the request of the USDA Forest Service. Should additional National Forest System lands be needed for this Project over the license term, the special-use authorization shall be amended.

Approval of Changes on National Forest System Lands after License Issuance

Notwithstanding any license authorization to make changes to the Project, the Licensee shall receive written approval from the USDA Forest Service to the extent required by law prior to making changes in the location of any constructed Project features or facilities, or in the uses of Project land and waters on or directly affecting National Forest System lands and resources, or any departure from the requirements of any approved exhibits filed by the Licensee with the Commission. Following receipt of such approval from the USDA Forest Service, and at least 60 days prior to initiating any such changes or departure, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the USDA Forest Service for such changes. The Licensee shall file an exact copy of the report with the USDA Forest Service at the time it is filed with the Commission.

Coordination with other authorized uses on National Forest System Lands

Portions of the Project area may be under federal authorization for other activities and permitted uses. After consultation with the USDA Forest Service and before starting any

activity on National Forest System land that the USDA Forest Service determines may affect another authorized activity, the Licensee shall resolve potential conflicts with representatives of those permitted uses.

Site Specific Plans

Site-specific plans will be prepared by the Licensee and approved by USDA Forest Service for habitat and ground disturbing activities on National Forest System Lands required by the license including activities contained within resource management plans required by the license that will be prepared subsequent to license issuance. Site-specific plans for activities will be prepared two years in advance of required implementation dates. Site-specific plans shall include:

1. A map depicting the location of the proposed activity and GPS coordinates.

2. A description of the Colville National Forest Land and Resource Management Plan (Forest Plan) land management area designation for the location of the proposed activity and applicable standards and guidelines.

3. A. description of alternative locations, designs and mitigation measures considered, including erosion control and implementation and effectiveness monitoring designed to meet applicable standards and guidelines.

4. Data collected from surveys, biological evaluations or consultation as required by regulations applicable to ground or habitat disturbing activities on National Forest System lands in existence at the time the plan is prepared.

5. If determined necessary by the Forest Supervisor, an environmental analysis of the proposed action that meets USDA Forest Service requirements for implementing the National Environmental Policy Act (NEPA) in existence at the time the plan is prepared.

Environmental Analysis

For any ground- or habitat-disturbing activities on National Forest System lands required for implementation of any protection, mitigation and enhancement measure, the Licensee shall, when determined necessary by the Forest Supervisor, conduct or fund an environmental analysis, including, but not limited to, scoping, site-specific resource analyses, and cumulative-effects analyses, sufficient to meet the criteria set forth in USDA Forest Service regulations for NEPA in existence at the time the activity is initiated.

Cost Reimbursement

The Licensee shall provide funding to the USDA Forest Service for all costs associated with the analysis, review, inspection and monitoring required to implement habitat and ground disturbing activities on National Forest System lands required by the license including activities contained within resource management plans required by the license that will be prepared subsequent to license issuance. Funding for USDA Forest Service employees involved in the analysis, review, inspection and monitoring of site-specific projects on National Forest System lands required by the new license or as amended shall be through the use of a Collection Agreement or other instrument consistent with USDA Forest Service regulations in effect at the time the project is proposed. Such instrument shall be executed by the Licensee and the Colville National Forest.

Condition No. 3 – Resource Coordination and Monitoring Implementation Plan

Within two years of license issuance, the Licensee shall prepare a Resource Coordination and Monitoring Implementation Plan (RCMP). The plan shall be developed in consultation with and subject to approval by the USDA Forest Service and filed with the Commission. The RCMP shall establish a process for information exchange and coordination of the implementation of license conditions and ongoing Project operations and maintenance activities potentially affecting National Forest System lands and resources. The RCMP shall provide for coordination of the implementation of the various management plans required under the new license, such as, but not limited to: historic properties management, integrated weed management, fish and wildlife management, sensitive species management, recreation resource management, monitoring, erosion control and other resource protection plans. The plan shall require the Licensee to:

1. Ensure timely consultation and coordination with the USDA Forest Service and other state and federal agencies, and Tribal governments concerning ongoing Project-related activities.

2. Document the requirements, tasks, methods and reports related to monitoring the effects of Project operations and facilities on natural and/or social resources and effectiveness of protection, mitigation and enhancement measures where that monitoring is required by USDA Forest Service terms and conditions or plans.

3. Provide a mechanism for revising implementation strategies and methods to reflect improvement in sampling procedures and/or changes in regulations or environmental conditions.

4. Identify practices for record keeping and annual reporting.

5. Include provisions for the routine updating of the implementation plan including incorporation of monitoring measures identified in site-specific plans prepared under the requirements of USDA Forest Service Condition No. 2.

6. Develop a process to assure that this monitoring is coordinated with other activities and agencies.

7. Hold at least one meeting annually with the USDA Forest Service and other agencies to evaluate the past-years activities, to develop a proposed implementation schedule for the next three years, and to finalize an implementation schedule for the upcoming year's activities. Minutes of the annual meeting shall be provided to the participants by the Licensee and filed with the Commission.

8. Develop a field manual identifying standard operating procedures that field personnel and contractors of the Licensee shall follow while conducting activities on National Forest System lands.

9. Identify a process to resolve disagreements regarding the implementation of the RCMP. Designate an Environmental Coordinator to coordinate the implementation of the RCMP and Licensee activities with the USDA Forest Service.

Condition No. 4 – Project Boundary

No later than two years from the date Federal Energy Regulatory Commission issues a new project license, the Licensee shall ensure that any part of the project's boundary on National Forest System land is 1) agreed to by the USDA Forest Service, 2) located on the ground with monuments tied to known corners of the Public Land Survey System, and 3) encompasses necessary land for project purposes such as public recreation, shoreline control, and environmental resource protection.

Condition No. 5 – Boundary Survey

Within three years of license issuance, the Licensee shall re-establish the Public Land Survey Meander Corners, or establish witness corners governing National Forest System property boundaries within and adjacent to the Project area. The corners, which need to be re-established, are identified in Exhibit 1 to Condition No. 4. The Licensee shall also survey, mark and post to USDA Forest Service standards and specifications those National Forest System lands adjacent to the Project, as identified in Exhibit 1. The Licensee shall be responsible for all USDA Forest Service administrative costs associated with surveying, marking and posting of National Forest System lands identified in Exhibit 1.

Exhibit 1
Condition No. 4 – Boundary Survey
Willamette Meridian

Legal Description	***Meander Corners***	Survey and Post
T38N, R43E Section 19	1. North of ¼ Corner common to sections 19/20 2. North Line of section	Government Lot 6
T38N, R43E Section 20	-	South Line between ¼ Corner and Meander Corner
T37N, R43E Section 33	1. North Line 2. South Line	Government Lots 1, 4, 5 and 8
T36N, R43E Section 15	1. North Line 2. South Line	Government Lots 5 and 8
T36N, R43E Section 22	1. North Line 2. South Line	Government Lot 1
T35N, R44E Section 7	-	Government Lot 4
T35N, R44E Section 19	-	1. North Line of NE1/4NE1/4 2. East Line between ¼ Corner and Meander Corner 3. Government Lots 1 and 2
T35N, R44E Section 20	-	Government Lot 3
T35N, R44E Section 29	South Line	South Line of Government Lots 4 and 5
T34N, R44E Section 18	1. North Line 2. South Line 3. West Line	Government Lot 5
T31N, R45E Section 12	East Line	-
T31N, R45E Section 13	1. North Line 2. East Lines	North and East Lines NE1/4

Condition No. 6 – Historic and Archaeological Properties

In addition to complying with all federal and state cultural resource protection laws, the Licensee shall:

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:

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.

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.

Within 2 years of license issuance, implement the schedule for data recovery of known eligible historic properties, which will be part of the HPMP.

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

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.

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.

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.

Provide for the cost of operations, maintenance, and any replacement costs for the Pioneer Park Campground interpretive trail and for the Panhandle Campground interpretive kiosk. This shall include any new interpretive displays located on National Forest System lands.

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.

Provide a schedule for completing all actions required in the HPMP.

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.

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.

Provide development and implementation standards and oversight protocol.

Provide for designation of a HPMP coordinator.

Provide for development and implementation of a method and protocol for dispute resolution.

Provide for pre-disturbance inventories in areas slated for ground disturbance in the APE.

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.

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.

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.

Provide for confidentiality of the nature and location of historic properties as required by ARPA.

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 that:

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)
- The area north and adjacent to Panhandle CG (T35N, R44E, Sections 20 and 29)

2. Within one year of license issuance the Licensee shall, either by itself, or through annual contributions provide for the operations, maintenance and replacement of overnight facilities at Edgewater, Panhandle and Pioneer Park. If the Licensee chooses to contribute funds annually to the USDA Forest Service, it shall be at a rate of 30 percent of the USDA Forest Service costs to operate and maintain those facilities until the study required by item 4 (below) is completed. Contributions shall be based on the cost of maintaining the sites to the Development Scale 4 to attain National Quality Standards for USDA facilities as generally described in Appendices B and H of the USDA Forest Service Recreation, Heritage and Wilderness Resources Integrated Business Systems (USDA 2004) as amended over the license term.

3. Within one year of license issuance the Licensee shall, either by itself, or through annual contributions provide for the operations, maintenance and replacement of day use facilities at Edgewater, Panhandle and Pioneer Park. If the Licensee chooses to contribute funds annually to the USDA Forest Service, it shall be at a rate of 80 percent of the USDA Forest Service costs to operate and maintain those facilities until the study required by item 4 (below) is completed. Contributions shall be based on the cost of maintaining the sites to the Development Scale 4 to attain National Quality Standards for USDA facilities as generally described in Appendices B and H of the USDA Forest Service Recreation, Heritage and Wilderness Resources Integrated Business Systems (USDA 2004) as amended over the license term.

4. In the event that the Licensee elects not to assume responsibility for operation, maintenance and replacement of day use and overnight facilities at Edgewater, Panhandle and Pioneer Park, the Licensee shall develop and implement a 3-year study to more accurately establish the percentage of overnight camping and day use at National Forest facilities that is Project related. The study shall be designed in consultation with and approved by the USDA Forest Service. The study shall be completed by the end of the 5th anniversary of the date of the new license with data ready to modify the RRMP in year 6 of the new license. After completion of the study, the Licensee shall contribute funds annually to the USDA Forest Service for that percentage of project related operation and maintenance established by the study starting in year 7 of the new license for the remainder of the new license term.

5. The Licensee provide for future recreation needs and demands on National Forest System lands and related to the Project by:

a. Within one year of license issuance, developing and implementing an on-going monitoring process for evaluating recreation use at National Forest facilities, and recreation user preferences and trends within the Project area. This process will incorporate results from USDA Forest Service annual site visitation records and the National Visitor Use Monitoring Project (NVUM, www.fs.fed.us/recreation).

b. Providing 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 5(a) shows that average use levels over a 3-year period at any individual National Forest facility 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).

Contributions by the Licensee to provide for operation and maintenance may be adjusted, upon approval of USDA Forest Service, based on the actual costs to provide that operation and maintenance on an annual basis, or as otherwise agreed to by the Licensee and USDA Forest Service. For example, in the event the USDA Forest Service or its concessionaire collects fees at Edgewater, Panhandle or Pioneer Park and Congressional authorization exists to retain such fees, funds collected, less overhead, retained and expended at the respective sites by USDA Forest Service, may commensurately reduce the Licensee s annual obligation at the site at which fee revenues are expended.

All capital improvements and activities on National Forest System lands are subject to site specific planning in accordance with Condition No. 2 - Implementation of Activities on National Forest System Lands.

Condition No. 8 – Erosion Monitoring Plan

Within one year of license issuance, the Licensee shall develop and begin implementation of an Erosion Monitoring Plan specific to National Forest System lands within and adjacent to the Project boundary for the term of the new license. The objective of this monitoring plan is to identify the location, extent and types of Project -caused and Project -exacerbated erosion processes on National Forest System lands. The plan shall be developed in consultation with, and approved by the USDA Forest Service, and filed with the Commission.

The plan shall require the Licensee to:

1. Develop the Erosion Monitoring Plan in cooperation with the USDA Forest Service.

2. Submit the plan to a peer review process approved by the USDA Forest Service.
3. After peer review, the USDA Forest Service will have final approval of the plan for National Forest System lands.

Objectives: The objectives of the plan shall be similar to the monitoring plan filed as Appendix E-8-2 in the FLA, as amended by the response to the 2001 Additional Information Request. Additional wording shall be added to the objectives to ensure that data collection and analysis addresses the effects of Project operations, primarily water surface elevation and flow, on erosion processes.

Site Selection: Monitoring shall include, but not limited to, sites of undercutting, bank toppling, dry ravel, rill erosion on steep unvegetated and poorly vegetated terrace escarpments, and areas with other resource concerns such as recreation, heritage, noxious weeds, and sensitive plants. Sites selection shall also consider reservoir characteristics such as morphology and geometry, and shoreline characteristics such as bank stratigraphy and texture. Transects shall extend to the location of the lowest water elevation during the past 10 years. The location of monitoring sites shall be approved by the USDA Forest Service prior to installation of any monitoring device or markers.

Site Documentation: As a minimum, site documentation shall include:

1. A paper map, at an agreed-upon scale, displaying the locations of the monitoring sites on National Forest System lands, and an electronic map compatible with the Geographic Information System (GIS) used on the Colville National Forest.
2. GPS coordinates so the sites can be reestablished in the event they are damaged.
3. Photographic documentation of each site.
4. Description of the overall setting including, but not limited to, the stratigraphy, composition of the shoreline material, slopes, reservoir width, and the reservoir setting.

Measurement Frequency: Transects shall be measured at least twice annually, once following the annual high flow, and again in late fall to record changes occurring at lower flows. Different timing may be approved by USDA Forest Service based on adequate rationale.

Methods: Erosion-monitoring techniques and methods, shall be adequate to identify and record erosion caused or exacerbated by Project operations. Specifically:

1. The method shall be able to record subtle shoreline changes, in the order of magnitude of 1 inch. This is the order of magnitude of change observed in

the undercutting and raveling slopes found on National Forest System lands near Edgewater Campground.

2. The method shall be capable of recording changes in undercut vegetation, such as observed on National Forest System lands at Ruby Ferry.

Reporting Frequency: The Licensee shall annually provide the USDA Forest Service with the results of the monitoring. A more comprehensive report will be provided to USDA Forest Service at 5-year intervals.

Report Content: Annual reports shall, at a minimum, include:

1. Individual profile data for each profile on National Forest System lands, including elevation information so the data can be compared to water surface elevation and flow data for the monitoring period,
2. Water surface elevation and flow data for the monitoring period,
3. Photographic documentation of site conditions when measured,
4. Observations including erosion processes and general site conditions (e.g., evidence of recreation or wildlife activities, changes in the nearby shoreline, etc.).

The 5-year reports shall, at a minimum, include:

1. Documentation of changes in bank profile (erosion) for each site over the monitoring period.
2. For individual sites, a comparison of erosion rates and locations with water surface elevation and flow regimes during the monitoring periods.
3. A comparison of changes in bank profile between similar sites (e.g., Erosion Occurrence class, Erosion Hazard class, bank height, cohesion of bank material, vegetation, river width, etc.).
4. Discussion addressing how erosion monitoring data may be used to refine the erosion occurrence and hazard mapping on National Forest System lands.
5. Discussion addressing how the erosion monitoring data may help illuminate the impact of the Project on erosion processes.
6. An update the Shoreline Erosion Hazard and Occurrence map for National Forest System lands.

Condition No. 9 – Erosion Control, Prevention and Remediation Plan

Within 3 years of license issuance, the Licensee shall develop and begin implementation of an Erosion Control, Prevention and Remediation Plan (ECPRP) specific to National Forest System lands adjacent to BCR, for the term of the new license. The objective of the ECPRP is to reduce or eliminate Project -caused and Project -exacerbated erosion of

National Forest System lands. The plan and all updated plans shall be developed in consultation with and approved by the USDA Forest Service and filed with the Commission.

The plans shall include site-specific procedures, measures and actions the Licensee shall undertake to control, prevent, or remediate shoreline erosion on National Forest System lands in order to protect public resources, and meet soil productivity and other standards contained in the Colville National Forest Land and Resource Management Plan, as amended.

National Forest System Sites to be Addressed in the Initial Plan: Within 3 years following issuance of the license, the Licensee will prepare and implement and Initial Erosion Control, Prevention and Remediation Plan for the following sites on National Forest System lands:

1. Edgewater Campground. T. 38N, R. 43E, Section 32. About 2,000 linear feet of moderate to high streambank, classified by the Licensee as "Slow" and "Moderate" erosion occurrence. These slopes clearly show undercutting at the elevation at which the reservoir water surface is held through most of the summer. This undercutting is accompanied by ravel and calving. Some undercutting of vegetation is occurring. The eroding slope is located adjacent to a developed campground.
2. Ruby Ferry. T. 35N, R. 44E, Section 19. On this 4,800 ft. of shoreline, PUD classified erosion occurrence as "Moderate" and "Slow". The soils are fine-sands and silt. The terraces are low (<10'), and the primary erosion is undercutting of dense vegetation followed by toppling. The eroding slope is located adjacent to a dispersed recreation site, and other sensitive resources.

Contents of the initial and subsequent Plans: Site specific plans will be developed for each site. These plans will:

1. Contain maps, drawings and descriptions of the proposed treatments, including access routes, and any storage or staging areas,
2. Utilize the best available scientific and engineering technology available consistent with the uses and emphasis of the National Forest System lands.
3. Document integration with other resource protection requirements including, but not limited to,
    a. Wildlife and sensitive plants, including any consultation required under the Endangered Species Act,
    b. Heritage resources, including any consultation required under the NHPA,

c. Vegetation and noxious weeds, including a revegetation plan, and any requirements under the Guide to Seeding and Planting Vegetation on the Colville National Forest (2000), the Colville National Forest Weed Prevention Guidelines (1999), the USDA Forest Service Guide to Noxious Weed Prevention Practices (undated), and any applicable noxious weed or invasive plant environmental assessments or environmental impact statements,
d. Water quality, including the development and use of appropriate Best Management Practices for the protection of water quality.

4. Contain analysis and documentation, as required, by USDA Forest Service Term and Condition Number 2.
5. A description of site characteristics such as soil stratigraphy, and current hydraulics. Collected data will be precisely located and available for river model applications appropriate for assessing changes in hydraulic factors such as shear stress, river velocity, and sediment transport potential.
6. A site-specific effectiveness monitoring plan.

Periodic Review and Revised Plans: Within 5 years following issuance of the license, and at least every 5 years thereafter, the Licensee with meet with the USDA Forest Service to review the periodic results from the Erosion Monitoring Plan (USDA Forest Service Condition 8). Based upon monitoring results, and other evidence, the USDA Forest Service will identify other areas where the Project is causing or exacerbating shoreline erosion on National Forest System lands. The Licensee will prepare a revised ECPRP to address these new sites. The revised plans shall emphasize treatment of sites with active erosion and/or where significant public resources (recreation, wildlife, sensitive plants, heritage) are at risk.

Condition No. 10 – Spill Prevention and Control, and Hazardous Materials Management

Within one year of license issuance and before starting any habitat or ground disturbing activities on National Forest System lands, the Licensee shall prepare a plan for hazardous materials storage, spill prevention and cleanup. This plan shall be prepared in consultation with and approved by the USDA Forest Service and filed with the Commission. The plan shall be in compliance with 40 CFR Part 112, and shall include at a minimum, an implementation schedule, inspection and maintenance program, and evidence of consultation with and approval by the Washington Department of Ecology and the USDA Forest Service. The plan shall require the Licensee to:

1. Locate storage facilities for oil, fuel and toxic and hazardous materials so as to prevent any spillage into waters or channels leading into water.
2. Develop containment areas with berms and impervious surfaces as needed.

3. Maintain a supply of spill cleanup equipment in the Project area suitable to contain any spill from the Project or storage area.
4. Annually inform the USDA Forest Service of the location of any spill cleanup equipment on National Forest System lands and of the location, type and quantity of oil, fuel, and toxic and hazardous substances stored in the Project area.
5. Inform the USDA Forest Service immediately of the nature, time, date, location, and action taken for any spill.
6. Maintain the capability to respond to a hazardous material or waste spill within 24 hours or less.
7. Dispose of and remove from federal lands, in accordance with state and federal requirements and regulations, all hazardous and toxic waste materials, including lead based paint, solvents and asbestos waste materials.

Condition No. 11 – Sensitive Species Management

Sensitive Species Consultation Plan

Within one year of license issuance and prior to any habitat improvements or ground disturbing activities on National Forest System lands, the Licensee shall prepare a Sensitive Species Consultation Plan. This plan shall be developed in consultation with and approved by the USDA Forest Service, and filed with the Commission. The plan shall identify how the Licensee shall consult with the USDA Forest Service to address the potential effects of Licensee activities to plants and animals identified on the Regional Forester's Sensitive Species List. The plan shall require the Licensee to:

1. Describe the process the Licensee shall follow to determine when field surveys, biological evaluations/ assessments, and monitoring shall be undertaken to assess whether proposed changes in Project operations, habitat improvements, or ground disturbing activities, could potentially affect sensitive species on National Forest System lands.
2. Establish standards for field surveys (protocols, sighting forms, etc.). Maintain a record of sensitive species occurrences in the Project area, and provide a mechanism for sharing this information with the USDA Forest Service.
3. Ensure that biological evaluations /assessments are completed according to USDA Forest Service policy and include mitigation to avoid or minimize adverse effects to sensitive species, if necessary.
4. Ensure that measures used to reduce adverse effects to sensitive species will be implemented and monitored for their effectiveness.
5. Periodically review and update the plan as species are added to or removed from the sensitive species list, or as new information pertaining to managing the species is obtained. Updates to the plan shall be completed in

consultation with and approved by the USDA Forest Service and submitted to the Commission for approval.

Sensitive Plant Survey and Protection

1. Within one year of license issuance, the Licensee shall provide USDA Forest Service all their sensitive plant survey data including maps of areas surveyed and methods used.
2. Within two years of license issuance, the Licensee shall complete additional surveys on National Forest System lands for Nuttall's pussytoes, black snake-root, purple meadowrue, Canadian St. John's-wort, prairie cordgrass, and adder's tongue, and provide the survey results to USDA Forest Service. Surveys shall be conducted according to USDA Forest Service protocols in effect at the time the surveys are undertaken and completed at the appropriate time of year to positively identify these species.
3. The Licensee shall monitor and protect sensitive plant populations on National Forest System lands that are potentially affected by Project - induced erosion and related noxious weed infestations. Monitoring and reporting schedules and protection measures shall be developed in consultation with and approved by the USDA Forest Service.

Condition No. 12 – Cottonwood and Wet Shrub Habitats

Habitat Protection / Restoration

Within three years of license issuance, the Licensee shall provide for the protection / restoration of at least 14 acres of cottonwoods and at least 11 acres of riparian shrub habitat in the Project area. Lands owned by the Licensee may be used for this purpose, but shall not include their wildlife management areas (WMAs) purchased to meet the terms of the Settlement Agreement. Protected / restored lands shall be dedicated to wildlife habitat over the term of the new license. To the extent possible, lands shall be protected / restored in one block. Additional acreage of cottonwoods may be substituted for riparian shrub habitat.

Within one year of dedicating the above property, the Licensee shall develop and implement a site-specific habitat management plan. The plan shall be developed in consultation with and approved by the USDA Forest Service and filed with the Commission. The plan shall detail how the parcel will be managed to maintain, restore, or promote mature habitat conditions by the end of the new license term. Effectiveness monitoring shall be incorporated into the plan to determine whether management is creating habitat components for beavers, cavity excavators, raptors, great blue heron, migratory songbirds and sensitive plants.

Cottonwood Restoration on National Forest System Lands

The Licensee shall restore three acres of cottonwoods on National Forest System lands in the Project area. Cuttings and / or rooted stock will be collected locally and planted. The Licensee shall monitor survival of plantings annually for a minimum of five years, or as long as necessary to achieve an 80% survival rate. If 80% survival is not achieved, the Licensee shall conduct additional replanting and / or protect plantings from moderate to severe hedging until this objective is achieved. The Licensee shall cage existing young cottonwoods present in the habitat to be restored in order to protect them from browse damage and assist in the restoration effort.

Maintenance of Alternate Mature Tree Habitat on National Forest System Lands

The Licensee shall complete habitat improvements on National Forest System lands to enhance or maintain alternate mature tree habitat (conifers) for bald eagles and other wildlife species within the Project area. All improvements shall be completed in coordination with and approved by the USDA Forest Service. In general the Licensee shall:

- Remove trees from 0 - 6" dbh from around large (20+" dbh) ponderosa pines growing within the Riparian Habitat Conservation Area (RHCA) of the Project area. This treatment shall occur within an area extending from the tree bole to 10 feet beyond the drip line of each tree.
- Plant widely spaced ponderosa pine trees in upland openings or other areas where over-story trees are lacking within the RHCA,
- Pre-commercially thin (14' x 14'spacing) or under-burn through conifer stands located within the RHCA.
- Create snags from selected live conifers. Trees will be selected so as to reduce competition for neighboring dominant trees (alternate mature tree habitat). Treatments could include chainsaw topping, top girdling, or stem inoculation. Preferred species to treat will be lodgepole pine and western larch.

Exhibit No. 1 to Condition Number 12 displays habitat improvements to be completed on National Forest System lands within the Project area.

Exhibit 1

Condition No. 12 – Cottonwood and Wet Shrub Habitats

Activity	Units	Initial Treatment	Follow-up Treatment
Plant cottonwoods	3 acres	within 5 years of license issuance	As needed to produce target acreage within 15 years
Cage existing cottonwood seedlings/saplings	50 cages	within 5 years of license issuance	Move cages as needed
Pre-commercial thin around large pines	17 trees	within 5 years of license issuance	Re-treat 15 years after license issuance if necessary
Plant pine trees	100 trees	within 5 years of license issuance	Monitor and evaluate the need for replanting as stated below
Pre-commercial thin and /or underburn	24 acres total	within 5 years of license issuance	Re-treat 20 years after license issuance if necessary
Create snags	17 trees	within 5 years of license issuance	Create an additional 17 trees 15 years after license issuance
Monitoring	snags/perch trees – monitor use twice annually (once in winter, once in nesting season) for ten years. plantings – monitor annually until survival standards are met. Also, evaluate the need for caging or replanting. caging – monitor annually as needed, evaluate the need to move cages to smaller plants as necessary. thin/underburn – monitor for two years after treatment, evaluate the need to repeat treatment after 20 yrs.		

Condition No. 13 – Bald Eagle/Osprey/Cormorant/Heron Monitoring

The Licensee shall conduct or provide funding for a qualified wildlife biologist(s) to annually survey nests of bald eagles, osprey, double-crested cormorants, and great blue herons within the Project area. Within one year of license issuance the Licensee shall develop a monitoring plan in consultation with and approved by the USDA Forest Service to guide these activities. Monitoring shall include nest use and productivity,

specific searches for new nests, and any pertinent field observations related to resource partitioning / competition between cormorants and the other species.

The Licensee shall complete an annual report that includes the above data, as well as the population status of each species across the Project area. Monitoring reports shall be provided to the USDA Forest Service within 60 days of the end of the calendar year.

If monitoring reveals that cormorants are increasing in the Project area with a coincident, threshold reduction in any of the other species, the Licensee shall consult with the USDA Forest Service on these findings, and assist in determining the specific direct or indirect effects the cormorants are having on the other birds (if any), and what measures should be taken to mitigate those impacts. If mitigation measures are needed to reduce affects to the other species, the Licensee shall undertake any that are related to habitat enhancement for the affected species within the Project area (such as the creation of supplemental nest or perch sites).

Condition No. 14 – Native Amphibian Habitats

The Licensee shall create or restore at least 60 acres of amphibian habitats on existing wildlife management areas (WMAs) or other Licensee-controlled lands. Created wetlands / ponds shall be designed to incorporate water control devices that allow water levels to be drawn down in the winter, thereby reducing non-native bullfrog populations that compete with and predate native frogs.

The Licensee shall consult with the USDA Forest Service to finalize the wetland creation and enhancement measures described in the draft Wildlife Management Plans for the Everett Island and Tacoma Creek WMAs. The sections of these plans dealing with the constructed wetlands shall include detailed topographic maps; hydrologic information and design drawings showing the water control features; the consideration of complete or nearly complete draw downs to impair bullfrog production in the ponds; proposed vegetation plantings in plan view and cross-section; and detailed information about operation, maintenance, monitoring methods, schedules and budgets.

The Licensee shall conduct or fund a qualified wildlife biologist to evaluate the habitat in created or restored wetlands / ponds using the pond breeding HSI model. The Licensee shall monitor amphibian populations at the sites using methods such as annual egg mass counts and nighttime call surveys in the spring, and /or summer or late fall funnel trapping. The Licensee shall also monitor the effectiveness of water level draw down in order to determine how best to manage the sites to promote native amphibians.

Condition No. 15 – Fish Passage

The Licensee shall meet all requirements and timelines prescribed for fish passage by the Department of Interior through the United States Fish and Wildlife Service (USFWS)

under Section 18 of the Federal Power Act.

The USDA Forest Service reserves the right to issue terms and conditions in coordination with appropriate federal and state fisheries managment agencies for volitional fish passage at Box Canyon Dam and Calispell Creek under Section 4(e) of the Federal Power Act.

Condition No. 16 - Water Quality

The Licensee shall meet all water quality standards required by the Clean Water Act in accordance with the water quality certification issued by Washington Department of Ecology (WDOE), or other authorized entity, under section §401 of the Clean Water Act.

The USDA Forest Service reserves the right to issue terms and conditions, in coordination with appropriate state, federal and tribal entities, for water quality standards in compliance with the Colville National Forest Land and Resource Management Plan and the Clean Water Act for the Box Canyon Hydroelectric Project under Section 4(e) of the Federal Power Act.

Condition No. 17 –Management of Non-Native Aquatic Vegetation

Within one year of license issuance, the Licensee shall prepare an Aquatic Plant Management Plan in consultation with the USDA Forest Service and approved by the USDA Forest Service and file the plan with the Commission. The plan shall address the control of Eurasian water milfoil (EWM), within BCR and the prevention of the spread of this vegetation to other water bodies on National Forest System lands. This plan shall include: control actions, an implementation schedule, and a monitoring plan for evaluating effectiveness of proposed actions. The plan shall require the Licensee to:

1. Develop, fully fund and implement a schedule for the rotovation to control Eurasian watermilfoil along the edge of BCR, at a minimum, at all public boat ramps and access points. Rotovation shall include the removal of the aquatic vegetation uprooted within the affected area along the shoreline and disposal outside of the reservoir at sites approved through consultation with the USDA Forest Service and others.

2. Fully fund and implement as necessary, other actions to supplement rotovation. These actions, may include, but would not be limited to, supplementation of predatory weevils, hand pulling EWM plants with divers and establishing vegetation barriers adjacent to public boat ramps and access points.

3. Develop, fully fund and implement a monitoring plan to determine the ffectiveness of any implemented treatment as a means to reduce the density

of EWM plants within treatment areas. Monitoring would include measuring density and composition of aquatic weed beds before and after treatment. If, after 5 years of operation within the new license period, monitoring indicates that rotovation with removal is not effective at reducing the density of this noxious weed, other methods, such as limited, moderate drawdown of the reservoir or some agreed-upon other means of control, would be implemented as a viable alternative for control.

4. Develop and implement an ongoing public education and signing plan for the Project area to educate the public about the dangers of spreading water milfoil to other waters.

5. Update the plan at least every 5 years incorporating improved technology for the control or eradication of EWM. This update shall be in consultation with and approved by the USDA Forest Service and other involved parties.

Condition No. 18 – Integrated Weed Management

Within one year of license issuance the Licensee shall prepare and implement an Integrated Weed Management Plan (IWMP) in consultation with and approved by USDA Forest Service and file the plan with the Commission. The plan shall require the Licensee to:

1. Identify and implement methods for prevention of noxious weeds on National Forest System lands directly or indirectly affected by Project-related activities and operations. Methods shall include education, minimizing transportation of weed seed, incorporation of seed prevention measures into project planning and design, minimizing ground disturbance and exposure of mineral soil, and revegetation of disturbed areas. Methods identified shall conform to the Colville National Forest Weed Prevention Guidelines and any subsequent forest, agency or regional guidelines or direction concerning the management or prevention of noxious weeds and other unwanted or alien plants.

2. Control noxious weeds in accordance with the Colville National Forest Environmental Assessment for Integrated Noxious Weed Treatment on National Forest System lands within and directly adjacent to the river, including those areas affected by Project-related dispersed recreation.

3. Ensure that all weed management activities are coordinated with other agencies responsible for noxious weed management in accordance with applicable Washington State law.

4. Conduct cooperative efforts for the prevention and control of noxious weeds on non-National Forest System lands to reduce the chances for establishment of noxious weeds on National Forest System lands.
5. Provide for annual surveys of National Forest System lands adjacent to BCR for the identification of new invader species within the Project area, and annually identify and implement control measures for these occurrences.
6. Explain how the Licensee's weed management activities, including re-vegetation and vegetation control methods and materials meet objectives for integrated noxious weed management, erosion control, wildlife habitat, sensitive plant species management and other management direction.
7. Develop a monitoring program to evaluate the effectiveness of re-vegetation, vegetation control, and noxious weed control measures.

Condition No. 19 – Borrow and Quarry Pits

The Licensee shall consult with and receive approval from the USDA Forest Service prior to conducting any activities relating to the excavation and removal of soil and rock materials from National Forest System lands. Use and development of borrow and quarry pits shall be in accordance with the *Colville National Forest Rock Resource Management Plan*. This activity shall be accomplished in accordance with Condition No. 2 – Implementation of Activities on National Forest System Lands.

APPENDIX C

U. S Department of the Interior
Fish and Wildlife Service
Modified
Prescriptions for Fishways Pursuant to Section 18 of the Federal Power Act

1.0 Prescription for Fishways[3]

Pursuant to Section 18 of the Federal Power Act (16 U.S.C. 811), the Secretary of the Interior hereby prescribes the construction, operation, and maintenance of fishways at the Box Canyon Hydroelectric Project No. 2042-013, including Box Canyon Dam and the Calispell Creek Pumping Plant, as follows:

1.1 General Prescriptions for Fishways at Box Canyon Dam

The following general conditions for the fishway apply to construction, operation, and maintenance of an upstream and downstream fishway in the Pend Oreille River at Box Canyon Dam, and are prescribed to ensure the 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 Department of the Interior (Department), through the Fish and Wildlife Service, reserves the authority to modify these conditions for the fishways at any time before license issuance, as well as any time during the term of the license, after review of new information.

B. The Department, through the U.S.A. Fish and Wildlife Service, retains the right to review and approve all final fishway plans and specifications prior to construction.

C. The Licensee shall ensure maximum effectiveness of fishway(s) at Box Canyon Dam consistent with hydropower operations as approved by the Federal Energy Regulatory Commission as needed to accommodate upstream and downstream passage for bull trout, westslope cutthroat trout, and mountain whitefish (collectively; "*target fish species*").

D. The Licensee shall keep the fishways in proper working order and shall keep all fishway areas clear of trash, sediment, logs, debris, and other material that would hinder passage. Anticipated maintenance shall be

[3] By letter dated May 20, 2004

performed in sufficient time before migratory periods such that the fishway can be tested and inspected and will operate effectively prior to and during the migratory periods.

E. Upon request, the Licensee shall provide personnel of the U.S. Fish and Wildlife Service, U.S. Forest Service, the Kalispel Indian Tribe, and the Washington Department of Fish and Wildlife access to the Box Canyon Hydroelectric Project site and to pertinent Project records for the purpose of inspecting the fishways to determine compliance with these conditions for the fishway.

1.2 Specific Prescriptions for Upstream Fishways at Box Canyon Dam (BCD)

The following conditions are prescribed for construction, operation and maintenance of upstream fishway(s) at Box Canyon Dam to provide effective (safe and timely) passage of juvenile, sub-adult and adult bull trout, westslope cutthroat trout, and mountain whitefish of or in excess of 100 mm (~ 4.0 inches) in total length.

1.2.1 Box Canyon Dam (BCD) Temporary Upstream Fishway

1.2.1.1 BCD Temporary Upstream Fishway – Plans and Specifications

Within six (6) months after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Services, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for approval by the U.S. Fish and Wildlife Service plans and specifications for installation of a temporary trap-and-haul fishway below Box Canyon Dam. The plans shall provide that the operation of the temporary trap-and-haul shall remain operational until superseded by an Interim trap-and-haul fishway.

1.2.1.2 BCD Temporary Upstream Fishway – Operation and Maintenance Plan

Within six (6) months after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan for the temporary trap-and-haul fishway, that describes anticipated operation and maintenance schedules, inspections and contingencies. The Operations and Maintenance Plan shall also provide for the following:

A. Fish safety during active and passive trapping operations.

B. A designated lead technician on site during all times when fish are being handled or loaded to assure maximum fish safety. Either cumulative experience and/or training of this technician should be presented to assure full understanding of direct and delayed mortality potential relating to stress and handling (NMFS 1995a, 1995b).

The Department expects that some loss of fish will occur during the reasonable and prudent operation of the U.S. Fish and Wildlife Service approved trap-and-haul device. If inherent defects in the system are identified, then the fishway shall be modified or replaced, as appropriate, and at the discretion of the U.S. Fish and Wildlife Service.

1.2.1.3 BCD Temporary Upstream Fishway – Monitoring and Reporting Plan

Within six (6) months after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for the review and approval of the U.S. Fish and Wildlife Service, a plan for monitoring the temporary trap-and-haul fishway at Box Canyon Dam. The monitoring plan shall provide for the submission of an annual monitoring report to resource agencies identified herein for the duration of the operation of the temporary trap-and-haul fishway, and shall include:

A. The number of fish, by species, size, age class, and date observed at the temporary trap-and-haul fishway collection point and transported upstream;

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 record of Total Dissolved Gas (TDG) levels, water temperature, river flow and velocity, measured at least hourly. Measurements shall be taken at a location at or near the entrance to the fishway as required to accurately monitor the effectiveness of the temporary trap-and-haul fishway; and

D. A record of the daily observations conducted by a qualified fish biologist (approved by the U.S. Fish and Wildlife Service), about the physical condition of the fish using the temporary trap-and-haul fishway. Such observations shall include, but not be limited to: delay, injury, descaling, disease and gas bubble trauma. The plans shall provide that the Licensee will report any observed delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification. 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 Planning Council. A percentage of these fish will be killed and necropsied for internal evidence of GBT using accepted methods based on current fishery science. The total percentage of fish examined will be determined by the Technical Committee 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, i.e., bull trout.

1.2.1.4 BCD Temporary Upstream Fishway – Post-Installation Effectiveness Evaluation Plan.

Within six (6) months after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop a plan for post-installation evaluations of the temporary 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 fish movement upstream from the forebay of Box Canyon Dam, at least as far upstream as the confluence of Cedar Creek (At Ione, Washington) with the Pend Oreille River. The 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 the Box Canyon Dam tailrace to the target fish drop-off point as established by the U.S. Fish and Wildlife Service.

1.2.1.5 BCD Temporary Upstream Fishway – Installation and Operation

With twelve (12) months after notification of the U.S. Fish and Wildlife Service's approval of the Licensee's Design Plans and Specifications for design, construction, and operation of the temporary trap-and-haul fishway (see Condition 1.2.1.1), the Licensee shall, at its own expense, install and commence the operation of the temporary trap-and-haul fishway at Box Canyon Dam in accordance with U.S. Fish and Wildlife Service approved plans, to provide effective (safe and timely) upstream passage for the target fish species or in excess of 100mm (~4 inches) in length. The Licensee shall notify the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe in writing when the temporary trap-and-haul fishway becomes operational. The Licensee shall operate, maintain and monitor the temporary trap-and-haul fishway in accordance with the U.S. Fish and Wildlife Service approved temporary trap-and-haul fishway Operation and Maintenance Plan (see Condition 1.2.1.2) and the temporary trap-and-haul fishway Monitoring and Reporting Plan (see Condition 1.2.1.3), and shall begin at the initiation of temporary trap-and-haul

fishway operations. In addition, the Licensee shall operate the temporary trap-and-haul fishway:

A. Until superseded by an interim trap-and-haul fishway; and

B When target fish species are present in Boundary Dam Reservoir, as determined by the U.S. Fish and Wildlife Service using the best scientific information available.

1.2.1.6 BCD Temporary Upstream Fishway – Post Installation Effectiveness Evaluation

Upon completion of the installation of the temporary trap-and-haul fishway, the Licensee shall, at its own expense, commence post-installation effectiveness evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in Condition 1.2.1.4. Within twelve (12) months after installation of temporary trap-and-haul facilities, the Licensee shall submit to U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe results of initial effectiveness evaluations, to the resource managers identified herein for review and comment prior to being filed with the Federal Energy Regulatory Commission. If notified by the U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize upstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife Service. The Licensee shall conduct post-construction evaluations of the effectiveness of the temporary trap-and-haul fishway at least once every five (5) years until such time as interim trap-and-haul fishway(s) are operational at Box Canyon Dam.

1.2.1.7 BCD Temporary Upstream Fishway – Monitoring Report

Within twelve (12) months after the installation and commencement of operation of the temporary trap-and-haul fishway (s), and annually thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Washington Department of Fish and Wildlife Service, and the Kalispel Indian Tribe a report summarizing information obtained through monitoring (see Condition 1.2.1.3). The Monitoring Report shall include the results of observations taken by the Licensee pursuant to all U.S. Fish and Wildlife Service-approved plans.

1.2.2 Box Canyon Dam (BCD) Interim Upstream Fishway

1.2.1.1 Criteria to Implement the BCD Interim Upstream Fishway

A. The Licensee has completed installation and commenced operation of the four modified (upgraded) generating turbines, and has completed installation of a spill bypass system at Box Canyon Dam to comply with Washington Department of Ecology water quality certification (Section 401 of the Clean Water Act), or

B. Within ten (10) years after license issuance, whichever occurs first.

1.2.2.2 BCD Interim Upstream Fishway – Conceptual Design Investigation

Within ten (10) years after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for approval by the U.S. Fish and Wildlife Service plans for completing design investigations to collect site-specific biological and engineering information required to site, design, and install interim trap-and-haul fishway(s) at Box Canyon Dam. The Licensee shall apply, as appropriate, design details and information learned from operating and monitoring the temporary trap-and-haul fishway to the development of design and specifications for construction and operation of the interim trap-and-haul fishway. 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 Box Canyon Dm. Design and operation, for periods when the Pend Oreille River exceeds water quality criteria for temperature and Total Dissolved Gas, shall be consistent with Section 401 (Clean Water Act) water quality certification issued by the Washington Department of Ecology;

B. Site-specific hydraulic conditions, under all operating scenarios, 1) in the forebay and tailrace at Box Canyon Dam, and 2) in the Pend Oreille River upstream of Box Canyon Dam to River Mile 35.5 (or one mile above Box Canyon Dam; whichever is greater). The former is to avoid or minimize the level of involuntary fallback of target fish species for a future permanent volitional fishway.

C. Testing, using a model of the Box Canyon Dam, forebay, auxiliary spillway, powerhouse, and tailrace area to insure proper siting of fishway

facilities to accommodate upstream fish passage, including entrance and exit points for a future permanent volitional fishway, an d release location(s) for fish collected in an interim Trap-and-haul fishway;

D. Information on swimming performance, behavior, and migratory pattern of juvenile (100mm in length or greater), sub-adult and adult bull trout, westslope cutthroat trout, and mountain whitefish upstream (i.e., target fish species) and downstream of the dam sufficient to determine the proper siting of interim Trap-and-haul fishway, including entrance point(s) for and release location(s) for fish collected in interim Trap-and-haul fishway(s), for all operating scenarios and related environmental cues, including but not limited to temperature, total dissolved gas (TDG), water velocity and lighting;

E. Devices and measures to allow the adjustment of fishway entrance attraction flows as necessary to effectively attract the target fish species into the fishway;

F. Devices and measures t allow adjustment of fishway entrance elevation, and location to effectively attract the target fish species into the fishway;

G. Structures, devices, and measures to allow adjustment of water flow, water velocity and water surface elevations within the fishway necessary to effectively convey the target fish into the fish trapping device; and,

H. Box Canyon Hydroelectric Project operations, such as but not limited to, spill management at the dam and auxiliary spillway and/or turbine sequencing (first on, last off) to avoid masking attraction flows for fish moving upstream.

1.2.2.3 BCD Interim Upstream Fishway – Final Design Plans and Specifications

Within twenty-four (24) months after notification by the U.S. Fish and Wildlife Service that the Conceptual Design Investigations have been approved (see Condition 1.2.2.2), the Licensee shall submit for review and approval of the U.S. Fish and Wildlife Service results of all interim trap-and-haul design investigations and design plans and specifications for construction and operation of interim trap-and-haul fishway(s) at Box Canyon Dam.

1.2.2.4 BCD Interim Upstream Fishway – Operation and Maintenance Plan

Within twenty-four (24) months after notification by the U.S. Fish and Wildlife Service that the Conceptual Design Investigations have been approved (see Condition 1.2.2.2),

the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan for the interim trap-and-haul fishway(s) describing anticipated operation, maintenance, schedules, inspections and contingencies. The Operations and Maintenance Plan shall also provide for the following:

A. Fish safety during active and passive trapping operations.

B. A designated lead technician on site during all times when fish are being handled or loaded to assure maximum fish safety. Either cumulative experience and/or training of this technician should be presented to assure full understanding of direct and delayed mortality potential relating to (NMFS 1995a, 1995b).

The Department expects that some loss of fish will occur during the reasonable and prudent operation of the U.S. Fish and Wildlife service approved trap-and-haul device. If inherent defects in the system are identified, then the fishway shall be modified or replaced, as appropriate, and at the discretion of the U.S. Fish and Wildlife Service.

1.2.2.5 BCD Interim Upstream Fishway – Monitoring and Reporting Plan

Within twenty-four(24) months after notification by the U.S. Fish and Wildlife Service, that the Conceptual Design Investigations have been approved (see Condition 1.2.2.2), the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval of the U.S. Fish and Wildlife Service a plan for monitoring the interim trap-and-haul fishway at Box Canyon Dam. The monitoring plan shall require the submission of an annual monitoring report to resource agencies identified herein for the duration of the of the interim 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 observed at the interim trap-and-haul fishway collection point and transported upstream;

B. The number of hours and days the interim 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 U.S. Fish and Wildlife Service, about the physical condition of fish using the temporary trap-and-haul fishway. Such

observations shall include, but not be limited to, delay, injury, descaling, disease and gas bubble trauma. The Licensee shall report any observed delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification. 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 Planning council. A percentage of these fish will be killed and necropsied for internal evidence of GBT using accepted methods based on current fishery. The total percentage of fish examined will be determined by the Technical Committee 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 of Total Dissolved Gas (TDG) levels, water temperature, river flow and velocity, measured at least hourly, both within the interim fishway and at or near the fishway entrance and exit points, as required to accurately monitor the effectiveness of the interim trap-and-haul fishway.

1.2.2.6 BCD Interim Upstream Fishway – Post-Installation Effectiveness Evaluation Plan

Within twenty-four (24) months after notification by the U.S. Fish and Wildlife Service, that the Conceptual Design Investigations have been approved (see Condition 1.2.2.2), the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop a plan for post-installation evaluations of the interim 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 fish movement from the approved fish drop off 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 the Box Canyon Dam tailrace to the fish drop-off point, as approved by the U.S. Fish and Wildlife Service.

1.2.2.7 BCD Interim Upstream Fishway – Installation and Operation

Within eighteen (18) months after notification of the U.S. Fish and Wildlife Service's approval of the Licensee's Final Design Plans and Specifications (see Condition 1.2.2.3) of the interim trap-and-haul fishway, the Licensee shall, at its own expense, complete the installation, and commence the operation, of interim trap-and-haul fishway at Box

Canyon Dam in accordance with the U.S. Fish and Wildlife Service approved plans to provide effective (safe and timely) upstream passage for juvenile, sub-adult, and adult target fish species, of or in excess of 100mm (~4 inches) in length. The Licensee shall notify the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, in writing when the interim trap-and-haul fishway becomes operational. The Licensee shall operate, maintain, and monitor the interim trap-and-haul fishway in accordance with U.S. Fish and Wildlife Service-approved interim trap-and-haul fishway Operation and Maintenance Plan (see Condition 1.2.2.4) and interim trap-and-haul fishway Monitoring Plan (see Condition 1.2.2.5) and shall begin at the initiation of interim trap-and-haul fishway operations. In addition, the Licensee shall operate the temporary trap-and-haul fishway:

A. Until superseded by an interim trap-and-haul fishway

B. When target fish species are present in Boundary Dam Reservoir, as determined by the U.S. Fish and Wildlife Service using the best scientific information available.

1.2.2.8 BCD Interim Upstream Fishway – Post Installation Effectiveness Evaluation

Upon completion of the installation of the interim trap-and-haul fishway, the Licensee shall, at its own expense, commence Post-installation Effectiveness Evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in condition 1.2.2.6. Within twelve (12) months after the installation of interim trap-and-haul facilities, the Licensee shall submit to U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe results of initial effectiveness evaluations. Results of the evaluations shall be submitted to resource managers identified herein for review and comment prior to being filed with the Commission. If notified by the U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize upstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife Service. The Licensee shall conduct post-construction evaluations of the effectiveness of the interim trap-and-haul fishway at least once every five (5) years until such time as a permanent Upstream Volitional fishway becomes operational or for the duration of the license, whichever comes first.

1.2.2.9 BCD Interim Upstream Fishway – Monitoring Report

Within twelve (12) months after the installation and commencement of operation of the temporary trap-and-haul fishway, and annually thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Washington Department of Fish and Wildlife Service, and the Kalispel Indian Tribe report summarizing information obtained through monitoring (see condition 1.2.2.5). The Monitoring Report shall include results of observations taken by the Licensee pursuant to al U.S. Fish and Wildlife service-approved plans.

1.2.3 Box Canyon Dam BCD) Permanent Upstream Volitional Fishway

1.2.3.1 Criterion to Implement BCD Permanent Upstream Volitional Fishway

The Licensee shall implement the following permanent upstream fishway measures if the criterion set forth below is achieved:

A. Ninety-seven (97) bull trout or westslope cutthroat trout are observed in the trap/collection/sorting device at Box Canyon Dam, in any given calendar year, pursuant to the methodology outlined in appendix 3. The designated number of 97 applies to either species to meet this criterion, but not a combination of the two.

1.2.3.2 Consultation to Implement BCD Permanent Upstream Volitional Fishway

When the criterion set forth above has been met, the U.S. Fish and Wildlife Service will seek the advice of one representative of the U.S. Fish and Wildlife Service, U.S. Forest Service, Kalispel Indian Tribe, and the Washington Department of Fish and Wildlife to evaluate the need for upstream volitional fish passage at Box Canyon Dam. [4] The selected resource representatives shall consider the effectiveness of the interim trap-and-haul facility at Box Canyon Dam, status of the implementation of various recovery tasks as defined in the Bull Trout Recovery Plan for Northeast Washington Chapter (in effect at the date of the consultation to implement the permanent fishway), and criteria for both abundance and increasing trend[5] in the number of migratory bull rout or westslope

[4]The criteria to implement permanent Upstream Volitional fish passage at Box Canyon Dam was developed through coordination and consultation between representatives of the Federal, State, and Kalispel Tribe resource managers responsible for the management of bull trout and westslope cutthroat trout in Northeast Washington State.

[5]Bull trout or westslope cutthroat trout abundance observed in the trap-and-haul shall be established using 12.5% of the mean of the recovered abundance of migratory bull trout in the two identified tributaries to the Pend Oreille River below Box Canyon

cutthroat trout observed in the trapping/sorting facility at Box Canyon Dam. The U.S. Fish and Wildlife service, after careful consideration of the recommendations from the selected resource representatives, shall make a final decision on the need for volitional upstream fish passage at Box Canyon Dam and notify the Licensee regarding its findings. If notified that volitional fish passage is required, the Licensee shall have twelve (12) months to provide a conceptual design plan for a permanent Upstream Volitional fishway Design to the U.S. Fish and Wildlife Service for review and approval (see condition 1.2.2.3). If, however, the U.S. Fish and Wildlife Service finds that upstream volitional fish passage is not appropriate after the evaluation described above, the issue of volitional upstream fish passage will be revisited, a year later, and on an annual basis from the date of that initial finding, for the duration of the license, or until upstream volitional fish passage is implemented at Box Canyon Dam. The Licensee will continue operation of the interim trap-and-haul fishway until superseded by an upstream volitional fishway.

1.2.3.3 BCD Permanent Volitional Upstream Fishway – Conceptual Fishway Design Investigation

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that criteria necessary to implement a permanent upstream Volitional fishway at box Canyon Dam has been met, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, 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 Box Canyon Dam. The Licensee shall apply design details and information learned from operation and monitoring of the interim trap-and-haul fishway, as appropriate, to development of design and specifications of construction and operation of the permanent Upstream Volitional Fishway. The plan shall provide for completion of site-specific design investigations to determine, among other design details:

Dam; i.e., Slate Creek (25 to 75 adults; mean = 50) and Sullivan Creek and Lake (600 to 850 adults; mean = 725) as specified in the Bull Trout Recovery Plan chapter (23) for Northeast Washington (or its replacement at the time of the evaluation). Trend criterion will be deemed established once the “rolling” average of the number of bull trout or westslope cutthroat trout observed in the trap-and-haul/sorting device at Box Canyon Dam over a period of three years or 1095 calendar days, reaches 12.5% of the mean of the total recovered abundance in the two tributaries below Box Canyon Dam, using the expected migration of adults based on alternate year spawning. The observation of target fish species shall commence when the interim trap-and-haul fishway becomes operational. See appendix 3 for an example illustrating how the criterion for implementing a Permanent Volitional Fishway at Box Canyon Dam is to be determined.

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 Box Canyon Dam. Design and operation, for periods when the Pend Oreille River exceeds water quality criteria for temperature and Total Dissolved Gas, shall be consistent with Section 401 (Clean Water Act) water quality certification issued by the Washington Department of Ecology;

B. Site-specific hydraulic conditions, under all operating scenarios, 1) in the forebay and tailrace at Box Canyon Dam, and 2) in the Pend Oreille River upstream of Box Canyon Dam to River Mile 35.5 (or one mile above Box Canyon Dam, whichever is greater). The former is to avoid or minimize the level of involuntary fallback of target fish species;

C. Testing, using a model of the Box Canyon Dam, forebay, auxiliary spillway, powerhouse, and tailrace area to insure the proper siting of fishway facilities to accommodate upstream fish passage, including entrance and exit points for the permanent Upstream Volitional fishway;

D. Information on the swimming performance, behavior, and migratory pattern of juvenile (100mm in length or greater), sub-adult and adult target fish species upstream an downstream on the dam sufficient to ensure proper siting of entrance and exit points for the permanent Upstream Volitional fishway, under all operating scenarios and related environmental cues, including, but not limited to temperature, total dissolved gas (TDG), river flow and velocity and lighting;

E. 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 Box Canyon Dam, using site-specific hydraulic conditions under all operating scenarios in the forebay and in the Pend Oreille River upstream of Box Canyon Dam to River Mile 35.5 (or one mile above Box Canyon Dam, whichever is greater);

F. Devices and measures to allow adjustment of fishway entrance attraction flows as necessary to effectively attract target fish species into the fishway;

G. Devices and measures to allow adjustment of fishway entrance configuration, elevation, and location to effectively attract target fish species *into* the fishway;

H. Structures, devices, and measures to allow adjustment of water flow, water velocity and water surface elevations *within the fishway* necessary to effectively convey target fish species through the fishway upstream to the *fishway exit*; and

I. Box Canyon Hydroelectric Project operations, including but not limited to: spill management at the dam and auxiliary spillway and/or turbine sequencing (first on, last off) to avoid making attraction flows for fish moving upstream.

1.2.3.4 BCD Permanent Volitional Upstream Fishway: Final Design Plans and Specifications

Within twenty-four (24) months after meeting the criteria to implement a permanent Volitional Upstream Fishway at Box Canyon Dam, the Licensee shall submit for the review and approval of the U.S. Fish and Wildlife Service, results of all permanent Upstream Volitional fishway final design investigations and design plans and specifications for construction and operation of a permanent Upstream Volitional fishway at Box Canyon Dam. The permanent Upstream Volitional fishway shall be operational during the time frame specified by the U.S. Fish and Wildlife Service, based on anticipated presence of target fish species in the Pend Oreille River.

1.2.3.5 BCD Permanent Volitional Upstream Fishway – Operation and Maintenance Plan

Within twenty-four (24) months after notification by the U.S. Fish and Wildlife Service that the criteria necessary to implement a permanent upstream Volitional fishway at Box Canyon Dam has been met, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife Service, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan for the permanent Upstream volitional fishway, describing anticipated operation, maintenance, schedules, inspections and contingencies. A designated lead technician on site during all times when fish are being handled assures maximum fish safety. Either cumulative experience and/or training of this technician should be presented to assure full understanding of direct and delayed mortality potential relating to stress and handling (NMFS 1995a, 1995b).

1.2.3.6 BCD Permanent Volitional Upstream Fishway – Monitoring and Reporting Plan

Within twenty-four (24) months after notification by the U.S. Fish and Wildlife Service that the criteria necessary to implement a permanent upstream Volitional fishway at Box

Canyon Dam has been met, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, monitoring plans for operation and maintenance of permanent Upstream Volitional fishway at Box Canyon Dam. The monitoring plan shall require the submission of an annual report to resource managers identified herein for the duration of the Box Canyon Hydroelectric Project 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 an appropriate fish facility;

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 record of the daily observations prepared by a qualified fish biologist, approved by the U.S. Fish and Wildlife Service, about the physical condition of fish using the volitional fishway. Such observations shall include, but not be limited to, delay, descaling, disease and gas bubble trauma. The Licensee shall report any observed delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification; and

D. A. continuous (minimum of an hourly measurement) record of Total Dissolved Gas (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 fishway structure.

1.2.3.7 BD Permanent Volitional Upstream Fishway – Post-Installation Effectiveness Evaluations Plan

With twenty-four (24) months after notification by the U.S. Fish and Wildlife Service that the criteria necessary to implement a permanent upstream Volitional fishway at Box Canyon Dam has been met, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of fish and Wildlife, and the Kalispel Indian Tribe, develop a plan for post-installation evaluations of the permanent upstream Volitional 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 Box Canyon Dam, at least to the confluence of Cedar Creek

(at Ione, Washington) with the Pend Oreille River. This documentation shall include fish passage efficiency, passage time, mortality, injury, and fallback rates for a representative range of operating scenarios, flow releases, and spill patterns from below the Box Canyon Dam tailrace to a point upstream, as established by the U.S. Fish and Wildlife Service.

1.2.3.8 BCD Permanent Volitional Upstream Fishway – Installation and Operation

Within twenty-four (24) months after notification of the U.S. Fish and Wildlife Service's approval of the Licensee's final design plans and specifications for construction and operation of a permanent, upstream volitional fishway (see Condition 1.2.3.4), the Licensee shall, at its own expense, install and operate permanent upstream volitional pool and weir, vertical slot, or similar fishway at Box Canyon Dam in accordance with U.S. Fish and Wildlife Service approved plans (see Condition 1.2.3.4) to provide for effective (safe and timely) upstream passage of juvenile, sub-adult, and adult target fish species over the full range of river flows for which Box Canyon Hydroelectric Project maintains operational control. The Licensee shall notify the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian tribe in writing when the permanent volitional Upstream Volitional fishway becomes operational. The Licensee shall operate, maintain, and monitor the permanent, Upstream Volitional fishway in accordance with the U.S. Fish and Wildlife Service-approved permanent Upstream volitional fishway Operation and Maintenance Plan (see Condition 1.2.3.5) and permanent volitional Upstream fishway Monitoring Plan (see Condition 1.2.3.6) and shall begin at the initiation of permanent Upstream Volitional fishway operations.

In addition, the Licensee shall operate the permanent upstream fishway when target fish species are present in the Boundary Dam Reservoir, as determined by the U.S. Fish and Wildlife Service using the best scientific information available.

1.2.3.9 BCD Permanent Volitional Upstream fishway – Post-Installation Evaluations

Upon completion of installation of the permanent Upstream Volitional fishway at Box Canyon Dam, the Licensee shall, at its own expense, commence Post-installation Effectiveness Evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in condition 1.2.3.7. Within twelve (12) months after installation of permanent Upstream Volitional fishway, the Licensee shall submit to U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe results of initial effectiveness evaluations. Results of the evaluations shall be reviewed by the resource managers identified herein, and comments provided prior to filing with the Commission. If notified by the U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S.

Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize upstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife Service. 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.

1.2.3.10 BCD Permanent Volitional Upstream Fishway – Monitoring Report

Within twelve (12) months after the installation and commencement of operation of the permanent Upstream Volitional Fishway, and annually thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe a report summarizing the information obtained through monitoring (see Condition 1.2.3.5). The Monitoring Report shall include the results of observations taken by the Licensee pursuant to all U.S. Fish and Wildlife Service-approved plans.

1.3 Specific Prescriptions for Downstream Fishways at Box Canyon Dam (BCD)

The following conditions are prescribed for construction, operation, and maintenance of downstream fishway(s) at Box Canyon Dam to provide effective (safe and timely) passage of juvenile, sub-adult bull trout, westslope cutthroat trout, and mountain whitefish, of, or in excess of, 100 mm (~ 4.0 inches) in total length.

1.3.0 Box Canyon Dam (BCD) Interim Downstream Fishway

1.3.1.1 BCD – Fish Behavior, Survival, and Design Investigations

Within six (6) months after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife and the Kalispel Indian Tribe, develop and submit for approval by the U.S. Fish and Wildlife Service plans for completing design investigations to collect site-specific biological and engineering information required to properly site, design, and install an interim downstream fishway at Box Canyon Dam and to determine the extent of injury/mortality to the target fish species moving through existing or upgraded generating turbines, spillway, and spillway gates. The plans shall be prepared by a qualified contractor with experience in conducting fish investigations, and selected

by mutual agreement of the U.S. Fish and Wildlife Service 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 (juvenile, sub-adult and adult bull trout, westslope cutthroat trout, and mountain whitefish) in the forebay and tailrace area of Box Canyon Dam. The information shall be sufficient to ensure proper siting of interim downstream fishway structures (including entrance and exit points for fish migrating downstream through Box Canyon Dam) and appurtenant facilities, and shall be obtained for all operating scenarios and related environmental cues, including but not limited to water temperature, total dissolved gas (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 permanent 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, as needed to allow the operation of the upgraded generating turbines at an efficiency that will provide the safest possible passage conditions for target fish species entrained in generating turbines at the Box Canyon Dam Hydroelectric Development; and

E. An injury/mortality assessment, of direct and indirect/delayed (48 hour) injury and mortality to juvenile, sub-adult and adult target fish species entrained at Box Canyon Dam. The Licensee shall assess injury and mortality to fish, using methods approved by the U.S. Fish and Wildlife Service: (1) within the existing and upgraded generating turbines, (2) when passing over the existing spillway, and (3) when passing through partially opened gates of the existing spillway. 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 existing spillway (considering various gate openings) are injured or killed.

Within eighteen (18) months after the commencement of the fish behavior, survival, and design investigations as described above, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service the initial results of their investigations, and thereafter on an annual basis until the full term of investigations have been completed.

1.3.1.2 BCD Interim Downstream Fishway – Preliminary Design Plans

Within twenty-four (24) months after notification by the U.S. Fish and Wildlife Service that fish behavior and survival investigation plans (See Prescription Condition 1.3.1.1) have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, Preliminary Design Plans for completing the interim downstream fishway design. The Preliminary Design Plans for the interim downstream fishway shall include:

A. A plan for the installation and operation of an interim downstream fishway(s) to accommodate effective (safe and timely) downstream movement of target fish species by a non-turbine[6] from the forebay to the tailrace. The interim downstream fishway shall be designed to operate with sufficient flow to successfully attract target fish species when river flows are less than the hydraulic capacity of the generating turbines. The interim downstream spillway or bypass structure shall be of an open-channel or non-pressurized pipe design;

B. A provision to direct target fish species to the fish bypass structure that employs methods such as partial screening, louvers, modified trash racks, or other devices to direct target fish species through a non-turbine route through Box Canyon Dam;

[6] 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 Box Canyon Dam 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 Box Canyon Dam, that do not pass downstream into the tailrace area have not moved through a "non-turbine route".

C. Provisions to ensure that the fishway(s) is/are operational during the full range of flows and water surface elevations where the Licensee maintains operational control at Box Canyon Dam. Design and operation, during periods when the Pend Oreille River exceeds water quality criteria for temperature and Total Dissolved Gas shall be consistent with the Section 401 (Clean Water Act) water quality certification issued by the Washington Department of Ecology; and

D. Structures, devices, and measures to allow adjustment of water flow, stream velocity and water surface elevations within the fishway(s) necessary to effectively convey target fish species through the interim downstream fishway.

1.3.1.2 BCD Interim Downstream Fishway – Final Plans and Specifications

Within six (6) months after notification by the U.S. Fish and Wildlife Service that Preliminary Design Plans (see Prescription Condition 1.3.1.2) for the interim downstream fishway have been approved, the Licensee shall submit for review and approval of the U.S. Fish and Wildlife Service, final Design Plans and Specifications for the interim downstream the fishway at Box Canyon Dam. The interim downstream fishway shall be operational during the time frame specified by the U.S. Fish and Wildlife Service, based on anticipated presence of target fish species in the Pend Oreille River.

1.3.1.3 BCD Interim Downstream Fishway – Operations and Maintenance Plan

Within six (6) months after notification by the U.S. Fish and Wildlife Service that Preliminary Design Plans (see Prescription Condition 1.3.1.2) for the interim downstream fishway have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan for the interim downstream fishway describing anticipated operation, maintenance, schedules, inspections, and contingencies.

1.3.1.4 BCD Interim Downstream Fishway – Monitoring and Reporting Plan

Within six (6) months after notification by the U.S. Fish and Wildlife Service that Preliminary Design Plans (see Prescription Condition 1.3.1.2) for the interim downstream fishway have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval of the U.S. Fish and Wildlife Service a plan for monitoring the interim

downstream fishway at Box Canyon Dam. The monitoring plan shall require for submission of an annual monitoring report to resource agencies identified herein for the license term and shall include, at a minimum, the following information:

A. The number of fish, by species, size, age class, and date observed at the interim downstream fishway(s);

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 record of Total Dissolved Gas (TDG) levels, water temperature, river flow, and velocity, measured at least hourly or as required to accurately monitor effectiveness of the downstream fishway(s); and

D. A record of the daily observations at Box Canyon Dam forebay and tailrace, conducted by a qualified fish biologist (approved by the U.S. Fish and Wildlife Service), about the physical condition of fish using the interim downstream fishway(s). Such observations 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 the disorientation of target fish species using the interim downstream fishway(s). The Licensee shall report any observed delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification.

1.3.1.5 BCD Interim Downstream Fishway – Post-Installation Effectiveness Evaluation Plan

Within six (6) months after notification by the U.S. Fish and Wildlife Service that Preliminary Design Plans (see Prescription Condition 1.3.1.2) for the interim downstream fishway have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Wildlife, and the Kalispel Indian Tribe, develop a plan to conduct post-installation evaluations of the interim downstream fishway. The plan shall provide for documentation of downstream movement of target fish species (or surrogate species as appropriate), as determined by radio telemetry or other means of accurately tracking fish movement. The number of fish selected for the fish movement investigation shall be determined by the U.S. Fish and Wildlife Service using accepted sampling protocol. This documentation shall include fish passage efficiency, time, mortality, and injury for a representative range of operating scenarios and flow releases from Box Canyon Dam.

1.3.1.7 BCD Interim Downstream Fishway – Installation and Operation

With twelve (12) months of the U.S. Fish and Wildlife Service's approval of the Licensee's final Plans and Specifications (see Prescription Condition 1.3.1.3) for the interim downstream fishway and any other approvals required by law, the Licensee shall, at its own expense, install and commence operation of the interim downstream fishway at Box Canyon Dam. The installation and operation of the interim downstream fishway 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 through Box Canyon Dam. The Licensee shall notify the U.S. Fish and Wildlife Service and other resource agencies identified herein in writing when the interim downstream fishway becomes operational. The Operation, maintenance, and monitoring of interim downstream fishway operations shall be conducted in accordance with plans set forth in Prescription Condition Nos. 1.3.1.4 and 1.3.1.5, and shall begin commensurate with initiation of interim downstream fishway operations.

In addition, the interim downstream fishway shall be operational when target fish species are present in the Box Canyon Reservoir, as determined by the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service if justified due to seasonal construction constraints.

1.3.1.8 BCD Interim Downstream Fishway – Post Installation Effectiveness Evaluation

Upon completing the installation of the interim downstream fishway at Box Canyon Dam, the Licensee shall, at its own expense, commence Post-installation Effectiveness Evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in Prescription Condition 1.3.1.6. Within twelve (12) months after installation of the interim downstream fishway, the Licensee shall submit to U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe results of initial effectiveness evaluations. Results of evaluations shall be submitted to resource managers identified herein for review and comment prior to being filed with the Commission. If notified by the U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize downstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife Service. The Licensee shall conduct post-

construction evaluations of the effectiveness of the interim downstream fishway at least once every five (5) years for the duration of the interim fishway's operation.

If the Licensee can successfully demonstrate to the U.S. Fish and Wildlife Service that the interim downstream fishway meet the Fish Guidance Efficiency (FGE) goal of 95% when passing fish that are in excess of 10 inches (250 mm) in length through a non-turbine route, as described in Condition 1.3.2.3 below, then the U.S. Fish and Wildlife Service will designate the interim downstream fishway as the permanent downstream fishway.

1.3.1.9 BCD Interim Downstream Fishway – Monitoring Report

Within twelve (12) months after the installation and commencement of operation of the interim downstream fishway, and annually thereafter, until such time as a permanent downstream fishway is operational, the Licensee shall submit to the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe a report summarizing the information obtained through monitoring (see Prescription Condition 1.3.1.5). The Monitoring Report shall include the results of observations taken by the Licensee pursuant to all U.S. Fish and Wildlife Service-approved plans.

1.3.2 Box Canyon Dam(BCD) Permanent Downstream Fishway

1.3.2.1 Criteria for Implementing BCD Permanent Downstream Fishway

A. the Licensee has completed installation and commenced operation of the four modified (upgraded) generating turbines, and has completed installation of a spill bypass system at Box Canyon Dam to comply with Washington Department of Ecology water quality certification (section 401 of the Clean Water Act), or

B. Within ten (10) year after license issuance, whichever occurs first.

1.3.2.2 BCD Permanent Downstream Fishway – Preliminary Design Plans

Within 12 (twelve) months after being notified in writing by the U.S. Fish and Wildlife Service that the criteria needed to implement a permanent downstream fishway have been met, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish

and Wildlife Service, preliminary plans for completing design investigations for a permanent downstream fishway(s). The preliminary plans shall include:

A. A plan for the installation and operation of a permanent downstream fishway to accommodate effective (safe and timely) downstream movement of target fish species by a non-turbine[7] route from the forebay to the tailrace. The permanent downstream fishway shall be designed to operate with sufficient flow to successfully attract target fish species when river flows are less than the hydraulic capacity of the generating turbines. The permanent downstream fishway shall be of an open-channel or non-pressurized pipe design, and the combined non-turbine routes shall have a Fish Guidance Efficiency[8] (FGE) of 95% for target fish species in excess of 10 inches (250 mm) in length;

B. A provision to direct target fish species through Box Canyon Dam via a non-turbine route, that employs methods such as partial screening, louvers, modified trash racks, or other devices;

C. A provision to operate upgraded generating turbines at an efficiency that will provide the safest possible passage conditions for target fish species entrained in generating turbines at Box Canyon Dam;

D. 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 during which the Licensee maintains operational control at Box Canyon Dam. Design and operation for periods when the Pend Oreille River exceeds water quality criteria for temperature and Total Dissolved Gas, shall be consistent with Section 401 (Clean Water Act) water quality certification issued by the Washington Department of Ecology; and

---

[7] 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 Box Canyon Dam 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 Box Canyon Dam, that do not pass downstream into the tailrace area have not moved through a "non-turbine route".

[8] Fish Guidance Efficiency (FGE)" will be verified by tagging fish moving downstream through Box Canyon Dam. Only fish that successfully pass through Box Canyon Dam to the tailrace area, without evidence of direct or indirect/delayed (48 hr) injury and/or mortality will be considered in meeting a 95% FGE.

E. Structures, devices, and measures to allow adjustment of water flow, stream velocity and water surface elevations within the fishway(s) as necessary to effectively convey target fish species through the permanent downstream fishway.

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

1.3.2.3 BCD Permanent Downstream Fishway – Final Plans and Specifications

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that its Preliminary plans for completing the permanent downstream fishway have been approved and within twelve (12) months of any other approval required by law, the Licensee shall submit for review and approval of the U.S. Fish and Wildlife Service the results of all permanent downstream fishway design investigations and design plans and specifications for construction and operation of the permanent downstream fishway at Box Canyon Dam.

1.3.2.4 BCD Permanent Downstream Fishway – Operations and maintenance Plan

Within twelve (12 months after notification by the U.S. Fish and Wildlife Service that its Final Design Plans and Specifications (Prescription Condition 1.3.2.3) for the permanent downstream fishway have been approved and within twelve (12) months of any other approval required by law, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan describing anticipated operation, maintenance, schedules, inspections, and contingencies of the Permanent Downstream Fishway.

1.3.2.5 BCD Permanent Downstream Fishway – Monitoring and Reporting Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that Final Design Plans and Specifications (Prescription Condition 1.3.2.3) for the permanent downstream fishway have been approved and within twelve (12) months of any other approval required by law, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval of the U.S. Fish and Wildlife Service a plan for monitoring the permanent downstream fishway(s) at Box Canyon Dam. 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 permanent 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 fishway(s);

B. The number of hours and days the permanent downstream fishway was in operation, including a maintenance summary and explanation of any out-of-service events in excess of two hours;

C. A continuous record of Total Dissolved Gas (TDG) levels, water temperature, river flow, and velocity, measured at least hourly, as required to accurately monitor the effectiveness of the downstream fishway(s); and

D. A record of the daily observations at Box Canyon Dam forebay and tailrace, conducted by a qualified fish biologist (approved by the U.S. Fish and Wildlife Service), about the physical condition of the fish using the permanent downstream fishway(s). 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 permanent downstream fishway(s). The Licensee shall report any observed delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification.6

1.3.2.6 BCD Permanent Downstream Fishway – Post-Installation Effectiveness Evaluation Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that its Final Design Plans and Specifications (Prescription Condition 1.3.2.3) for the permanent downstream fishway have been approved, and within twelve (12) months of any other approval required by law, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop a Post-installation Effectiveness Evaluation Plan for the permanent downstream fishway. 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 Box Canyon Dam and into the tailrace area. The number of fish selected for the fish movement investigation shall be determined by the U.S. Fish and Wildlife Service 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 the Box Canyon Dam.

1.3.2.7 BCD Permanent Downstream Fishway – Installation and Operation

Within eighteen (18) months after notification by the U.S. Fish and Wildlife Service that the Licensee's Final Design Plans and Specifications for the permanent downstream fishway have been approved (see Prescription Condition 1.3.2.3), the Licensee shall, at

its own expense, install and commence operation of the permanent downstream fishway at Box Canyon Dam. The installation and operation of the permanent downstream fishway 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 U.S. Fish and Wildlife Service and the other resource agencies identified herein in writing when the permanent downstream fishway becomes operational. The operation, maintenance, and monitoring of permanent downstream fishway operations shall be conducted in accordance with plans set forth in Prescription condition No. 1.3.2.4 and 1.3.2.5, and shall begin concurrent with the initiation of permanent downstream fishway operations.

In addition, the permanent downstream fishway shall be operational when target fish species are present in the Box Canyon Reservoir, as determined by the U.S. Fish and Wildlife Service using the best scientific information available. The permanent 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 U.S. Fish and Wildlife Service, if justified, due to seasonal construction constraints.

1.3.2.8 BCD Permanent Downstream Fishway – Post-Installation Effectiveness Evaluations

Upon completion of the installation of the permanent downstream fishway at Box Canyon Dam, the Licensee shall, at its own expense, commence Post-installation Effectiveness Evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in Prescription Condition No. 1.3.2.6. Within twelve (12) months after installation of the permanent downstream fishway, the Licensee shall submit to U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe results of initial effectiveness evaluations. Results of the evaluations shall be submitted to resource managers identified herein for review and comment prior to being filed with the Commission. If notified by the U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize downstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife Service. The Licensee shall conduct post-construction evaluations of the effectiveness of the permanent downstream fishway at last once every five (5) years for the duration of the license.

1.3.2.9 BCD Permanent Downstream Fishway – Monitoring Report

Within twelve (12) months after the installation and commencement of operation of the permanent downstream fishway, and annually thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe a report summarizing the information obtained through monitoring (see Prescription Condition 1.3.2.5). The Monitoring Report shall include the results of observations taken by the Licensee pursuant to all U.S. Fish and Wildlife Service-approved plans.

1.4 General Prescription for Fishways at Calispell Creek Pumping Plant

The following general conditions are prescribed for the construction, operation, and maintenance of upstream and downstream fishways at the Calispell Creek Pumping Plant, 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 Department of the Interior (Department), through the Fish and Wildlife Service, reserves the authority to modify these conditions for the fishway at any time before license issuance, as well as any time during the term of the license, after review of new information.

B. The Department, through the U.S. Fish and Wildlife Service, retains the right to review and approve all final fishway plans and specifications prior to construction.

C. The Licensee shall insure the maximum effectiveness of the fishway consistent with hydropower operations as approved by the Federal Energy Regulatory Commission (Commission), at Calispell Creek Pumping Plant as needed to accommodate upstream passage for bull trout, westslope cutthroat trout, and mountain whitefish; collectively; *"target fish species"*.

D. The Licensee shall keep the fishway in proper working order and shall keep all fishway areas clear of trash, sediment, logs, debris, and other material that would hinder passage. Anticipated maintenance shall be performed in sufficient time before a migratory period such that the fishway can be tested and inspected and will operate effectively prior to and during the migratory periods.

E. Upon request, the Licensee shall provide personnel of the U.S. Fish and Wildlife Service, U.S. Forest Service, Kalispel Indian Tribe, and Washington Department of Fish and Wildlife access to the Box Canyon Hydroelectric

Project ("Project") site and to pertinent Project records for the purpose of inspecting the fishway to determine compliance with these conditions for the fishway.

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

The following conditions are prescribed for the construction, operation and maintenance of an upstream fishway at the Calispell Creek Pumping Plant to provide effective (safe and timely) passage of juvenile, sub-adult and adult target fish species of or in excess of 100 mm (~4.0 inches) in total length.

1.5.1 Calispell Creek Pumping Plant (CCPP) Interim Upstream Fishway

1.5.1.1 CCPP Interim Upstream Fishway – Conceptual Design Investigation

Within seven and one-half (7.5) years after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wild Life, and the Kalispel Indian Tribe, develop and submit for approval by the U.S. Fish and Wildlife Service plans for completing design investigations to collect site-specific biological and engineering information required to site, design, and install interim an upstream fishway at Calispell Creek Pumping Plant. 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 is operational at the full range of flows and water surface elevations, both upstream and downstream from the Calispell Creek Pumping Plant. 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 Calispell Creek Pumping Plant;

C. Testing, using a model of Calispell Creek, that takes into consideration: channel configuration above and below the Calispell Creek Pumping Plant, 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 Licensee. Such testing shall be used to determine proper siting of fishway facilities to accommodate upstream fish passage, including entrance and exit points for a future volitional

fishway and release location(s) for fish collected in an interim upstream fishway;

D. Information on the swimming performance, in consideration of the best scientific information available, to determine the behavior and migratory pattern of juvenile (100 mm in length or greater), sub-adult and adult target fish species upstream and downstream from the Calispell Creek Pumping Plant sufficient to ensure proper siting of interim upstream fishway a structure(s0, including entrance and exit point(s) for fish migrating upstream through Calispell Creek Pumping Plant and appurtenant facilities, and transported to streams tributary to Calispell Creek, for 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; and

Box Canyon Hydroelectric Project operations, including but not limited to, operational pool elevation in the Box Canyon Reservoir and the operation of a pump or pumps located upstream from Calispell Creek Pumping Plant.

1.5.1.2 CCPP Interim Upstream Fishway – Final Design Plans and Specifications

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that its conceptual Design Investigation Plan (see Condition 1.5.1.1) has been approved, the Licensee shall submit for the review and approval of the U.S. Fish and Wildlife Service the results of all interim upstream fishway design investigations and design plans and specifications for construction and operation of the interim upstream fishway at Calispell Creek Pumping Plant.

1.5.1.3 CCPP Interim Upstream Fishway – Operations and Maintenance Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service, that their Conceptual Design Investigation Plans and Specifications (see Condition 1.5.1.1) gave been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan describing anticipated operation, maintenance, schedules, inspections and contingencies.

1.5.1.4 CCPP Interim Upstream Fishway – Monitoring and Reporting Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that their Conceptual Design Plans and Specifications (see Condition 1.5.1.1) have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for the review and approval of the U.S. Fish and Wildlife Service a plan for monitoring interim upstream the fishway at Calispell Creek Pumping Plant. The monitoring plan shall require submission of an annual monitoring report to the resource entities identified herein for the duration of the operation of the interim upstream the 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 interim upstream fishway collection point and transported upstream;

B. The number of hours and days the interim 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 U.S. Fish and Wildlife Service) about the physical condition of fish using the interim upstream fishway. Such observations shall include, but not be limited to, delay, injury, descaling and disease. The Licensee shall report any observed delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification; 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 fishway structure. 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 Interim Upstream Fishway – Post-Installation Effectiveness Evaluation Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service, that their conceptual Design Plans and Specifications (see Condition 1.5.1.1) have been approved, the Licensee shall, at its own expense and in consultation the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop a plan for post-installation evaluations of the interim

upstream fishway. 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 approved by the U.S. Fish and Wildlife Service, 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 form the Calispell Creek Pumping Plant.

1.5.1.6 CCPP Interim Upstream Fishway – Installation and Operation

Within twelve (12) months of the Fish and Wildlife Service's approval of the Licensee's final Design Plans and Specifications (see Condition 1.5.1.2) for construction and operation of the interim upstream fishway, the Licensee shall, at its own expense, install and commence operation of the interim upstream the fishway at Calispell Creek Pumping Plant. The installation and operation of the interim upstream 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 U.S. Fish and Wildlife Service and other resource entities identified herein in writing when the interim upstream fishway becomes operations. Operation, maintenance, and monitoring of interim upstream fishway operations, in accordance with U.S. Fish and Wildlife Service-approved Interim Upstream Fishway Operation and Maintenance Plan (see Condition 1.5.1.4) shall commence with initiation of interim upstream, fish operations. The initial operation of the upstream fishway shall be operational as directed using the best scientific information available. Subsequently, timing of the operation of the structure shall be adjusted, as necessary, based on observed presence of target fish species in the Box Canyon Reservoir and/or Calispell Creek, and as approved by the U.S. Fish and Wildlife Service.

1.5.1.7 CCPP Interim Upstream Fishway - Post-Installation Effectiveness

Upon completion of installation and commencement of operation of the interim upstream fishway, the Licensee shall, at its own expense, commence post-installation effectiveness evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in condition 1.5.1.5. Within twelve (12) months of installation of the interim upstream fishway, the Licensee shall submit to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe the results of initial effectiveness evaluations. Results of the evaluations shall be submitted to resource managers identified herein for review and comment prior to being filed with the commission. If notified by the U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize upstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife Service. The Licensee shall conduct post-construction evaluations of the effectiveness of the interim trap-and-haul fishway at least once every five (5) years until such time as a permanent Upstream Volitional fishway becomes operational or for the duration of the license, whichever comes first.

1.5.1.8 CCPP Interim Upstream Fishway – Monitoring Report

Within twelve (12) months after the installation and commencement of operation of the interim upstream fishway, and on an annual basis thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe a report (see condition 1.5.1.4) summarizing information obtained through monitoring. The monitoring report shall include results of observations taken by the Licensee pursuant to the stipulations as described in Prescription Condition Nos. 1.5.1.4 and 1.5.1.5.

1.5.2 Calispell Creek Pumping Plant (CCPP) Permanent volitional Upstream Fishway

1.5.2.1 CCPP Permanent Volitional Upstream Fishway – Criteria for Implementation

The Licensee shall implement the construction, operation, and maintenance of a permanent volitional upstream fishway at the Calispell Creek Pumping Plant if notified by the U.S. Fish and Wildlife Service that at least two streams, tributary to Calispell Creek and located upstream from the Calispell Creek Pumping Plant, provide adequate habitat, and will allow the unrestricted movement of the target fish species between the designated tributaries and the Calispell Creek Pumping Plant.

1.5.2.2 CCPP Permanent Volitional Upstream Fishway – Conceptual Design Investigation

Within six (6) months after being notified in writing by the U.S. Fish and Wildlife Service that the criteria for implementing a Permanent Upstream Volitional fishway has been met, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, 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 the fishway at Calispell

Creek Pumping Plant. 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 Calispell Creek Pumping Plant. 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 Calispell Creek Pumping Plant;

C. Testing, using a model of Calispell Creek, that takes into consideration: channel configuration above and below the Calispell Creek Pumping Plant, operation of 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 Calispell Creek Pumping Plant 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 (100 mm in length or greater), sub-adult and adult target fish species upstream and downstream from Calispell Creek Pumping Plant sufficient to determine proper siting of the permanent upstream fishway structure(s), including entrance and exit point(s) for fish migrating upstream through Calispell Creek Pumping Plant and appurtenant facilities for 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; and

G. Box Canyon Hydroelectric Project operations, including but not limited to, the operational pool elevation in Box Canyon reservoir and operation of a pump or pumps located upstream from Calispell Creek Pumping Plant.

Moreover, the Licensee shall apply design details and information learned from operation and monitoring of the interim upstream fishway, as appropriate, to development of the design and specifications for construction and operation of the permanent volitional the fishway.

1.5.2. 3 CCPP Permanent Volitional Upstream Fishway – Final Design Plans and Specifications

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service that its conceptual Design Investigation Plan (see condition 1.5.2.2) for a Permanent 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 permanent upstream volitional fishway at Calispell Creek Pumping Plant.

1.5.2.4 CCPP Permanent volitional Upstream Fishway – Operations and Maintenance Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service, that their Final Design Plans and Specifications (see Condition 1.5.2.2) have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operation and maintenance plan describing anticipated operation, maintenance, schedules, inspections and contingencies.

1.5.2.5 CCPP Permanent volitional Upstream Fishway – Monitoring and Reporting Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service, that their Final Design Plans and Specifications (see Condition 1.5.2.2) have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval of the U.S. Fish and Wildlife Service a plan for monitoring the permanent upstream volitional fishway at Calispell Creek Pumping Plant. 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 U.S. Fish and Wildlife Service, 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 delay, injury, and mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within sixty (60) days after notification; and

D. A continuous record of Dissolved Oxygen (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.

1.5.2.6 CCPP Permanent Volitional Upstream Fishway – Post-installation Effectiveness Evaluation Plan

Within twelve (12) months after notification by the U.S. Fish and Wildlife Service, that their Final Design Plans and Specifications (see condition 1.5.2.2) have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for review and approval of the U.S. Fish and Wildlife Service, a plan for post-installation evaluations of the permanent upstream volitional 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 approved by the U.S. Fish and Wildlife Service, 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 Calispell Creek Pumping Plant.

1.5.2.7 CCPP Permanent volitional Upstream Fishway – Installation and Operation

Within twelve (12) months of the Fish and Wildlife Service's approval of the Licensee's Final Design Plans and Specifications (see Condition 1.5.2.3) for construction and operation of the permanent upstream volitional fishway, the Licensee shall, at its own expense, install and commence operation of permanent upstream volitional pool and weir, vertical slot, or similar fishway at Calispell Creek Pumping Plant. The installation and operation of 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 U.S. Fish and Wildlife Service and other resource entities identified herein in writing when the permanent upstream fishway becomes operational. Operation, maintenance, and monitoring of permanent upstream fishway operations, in accordance with U.S. Fish and Wildlife Service-approved Permanent Upstream Fishway Operating and Reporting Plan (see Condition 1.5.2.4) and Permanent Upstream Fishway Monitoring and Reporting Plan (see Condition1.5.2.5) shall commence with initiation of permanent upstream fishway operations. In addition, the Licensee shall operate the permanent upstream volitional fishway when target fish species are present in the Box Canyon Reservoir, as determined by the U.S. Fish and Wildlife Service using the best scientific information available. Subsequently, timing of the operation of the structure shall be adjusted, as necessary, based on observed presence of target fish species in the Box Canyon Reservoir and/or Calispell Creek, and as approved by the U.S. Fish and Wildlife Service.

1.5.2.8 CCPP Permanent Volitional Upstream Fishway – Post-Installation Effectiveness Evaluations

Upon completion of the installation and commencement of operation of the permanent upstream fishway, the Licensee shall, at its own expense, commence post-installation effectiveness evaluations in accordance with the U.S. Fish and Wildlife Service-approved plan set forth in Condition 1.5.2.6 above. Within twelve (12) months of the installation of the permanent upstream fishway, the Licensee shall submit to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe 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 U.S. Fish and Wildlife Service that deficiencies are observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize upstream fish passage effectiveness have been

performed to the satisfaction of the U.S. Fish and Wildlife Service. 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.

1.5.2.9 CCPP Permanent Volitional Upstream Fishway – Monitoring Report

Within twelve (12) months after installation and commencement of operation of the permanent upstream volitional fishway, and on an annual basis thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe a report (see Condition 1.5.2.5) summarizing information obtained through monitoring. The monitoring report shall include results of observations taken by the Licensee pursuant to the stipulations as described in Condition Nos. 1.5.2.5 and 1.5.2.6.

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 fishways at the Calispell Creek Pumping Plant to provide effective (safe and timely) passage of juvenile, sub-adult and adult target fish species of or in excess of 100 mm (~4.0 inches) in total length.

1.6.1 CCPP Downstream Fishway – Preliminary Design Investigations and Construction Plan

Within five (5) years after license issuance, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and the Kalispel Indian Tribe, develop and submit for approval by the U.S. Fish and Wildlife Service plans for completing design investigations to collect site-specific biological and engineering information required to properly situate, design, and install a permanent downstream fishway in Calispell Creek at the Calispell Creek Pumping Plant. The plans shall be prepared by a qualified contractor with experience in conducting fish investigations, and selected by mutual agreement of the U.S. Fish and Wildlife Service 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 Calispell Creek Pumping Plant. The information shall be sufficient to ensure the proper siting of downstream fishway structures (including entrance and exit points for fish migrating downstream through the Calispell Creek Pumping Plant) and appurtenant facilities, and

shall be obtained for all operating scenarios and related environmental cues, including but not limited to water temperature, dissolved oxygen, stream velocity, and lighting;

B. Design investigations, using a model of Calispell Creek, that takes into consideration the channel configuration above the Calispell Creek Pumping Plant. 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 permanent downstream fishway;

C. Design investigations, as needed to accommodate the installation of devices and include 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 specified by the U.S. Fish and Wildlife Service, 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 Hidrostal ® or Archimedes type pump(s), as determined to be most effective for the downstream movement of target fish species, by the U.S. Fish and Wildlife Service. 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 Calispell Creek Pumping Plant, 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 (equal to or greater than 100 mm in length), at a point upstream from Calispell Creek Pumping Plant, as needed to guide target fish species past existing pumps to the Hidrostal ® 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 ¼ or 0.25 inches (6.35 mm) in narrow direction, as needed to prevent entrainment or impingement of target fish species equal to or greater than 100 mm in 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 Calispell Creek Pumping Plant is lower than the stage of Calispell Creek upstream of the Calispell Creek Pumping Plant, *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 Plans and Specifications

Within twelve (12) months after notified by the U.S. Fish and Wildlife Service, that conceptual plans for downstream fishway required by Condition 1.6.1 above, have been approved, the Licensee shall at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, the Final Design Plans and Specifications for the permanent Downstream fishway at the Calispell Creek Pumping Plant.

1.6.3 CCPP Downstream Fishway – Operations and Maintenance Plan

Within twelve (12) months after notified by the U.S. Fish and Wildlife Service, that the conceptual plans for downstream fishway required by Condition 1.6.1 above, have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service an operations and maintenance plan for the permanent Downstream Fishway describing anticipated operations, maintenance, schedules, inspections, and contingencies.

1.6.4 CCPP Downstream Fishway – Monitoring and Reporting Plan

Within twelve (12) months after notified by the U.S. Fish and Wildlife Service, that the conceptual plans for downstream fishway required by Condition 1.6.1 above, have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, a plan for monitoring the downstream fishway at the Calispell Creek Pumping Plant. The monitoring plan shall require that the Licensee submit an

annual monitoring report to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe, for the duration of operation of the permanent Downstream Fishway. The annual monitoring report shall include:

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 U.S. Fish and Wildlife Service), 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 delay, injury, descaling, disease, and/or mortality of fish to the U.S. Fish and Wildlife Service within 24 hours and shall take appropriate corrective measures within 60 days after notification by the U.S. Fish and Wildlife Service.

1.6.5 CCPP Downstream Fishway – Post-Installation Effectiveness Evaluation Plan

Within twelve (12) months after notified by the U.S. Fish and Wildlife Service, that the conceptual plans for downstream fishway required by Condition 1.6.1 above, have been approved, the Licensee shall, at its own expense and in consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe, develop and submit for review and approval by the U.S. Fish and Wildlife Service, a plan for post-installation evaluations of the permanent Downstream Fishway. 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 form the Calispell Creek Pumping Plant.

1.6.6 CCPP Downstream Fishway – Installation and Operation

Within twenty-four (24) months after U.S. Fish and Wildlife Service approval of the Licensee's Final Plans and Specifications for design, construction, and operation of the permanent downstream Fishway, as required by Condition 1.6.2 above, the Licensee shall, at its own expense, install and commence operation of the permanent Downstream Fishway at Calispell Creek Pumping Plant. 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 fish species of, or in excess of 100 mm (~ 4 inches) in length. The Licensee shall notify the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe in writing when the permanent downstream fishway becomes operational. The Licensee shall operate, maintain and monitor the permanent downstream fishway in accordance with the approved Downstream Fishway Operation and Maintenance Plan (see Condition 1.6.4). In addition, the Licensee shall operate the downstream fishway when target fish species are present in the Box Canyon Reservoir, as determined by the U.S. Fish and Wildlife Service using the best scientific information available.

1.6.7 CCPP Downstream Fishway—Post-Installation Effectiveness Evaluations

Upon completion of the installation and commencement of operation of the permanent Downstream Fishway, the Licensee shall, at its own expense, commence a Post-Installation Effectiveness Evaluation in accordance with the plan set forth in Condition 10.6.5 Within twelve (12) months of the installation of the downstream fishway, the Licensee shall submit to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife Service, and Kalispel Indian Tribe, the results of the initial Post-Installation Effectiveness Evaluation. Results of the evaluation shall be submitted to the resource managers identified herein with sufficient time for review and comment prior to being filed with the Commission. If notified by the U.S. Fish and Wildlife Service that deficiencies have been observed in the fishway, the Licensee shall provide the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service, 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 maximize upstream fish passage effectiveness have been performed to the satisfaction of the U.S. Fish and Wildlife. 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 CCP Downstream Fishway—Monitoring Report

Within twelve (12) months after installation and commence of operation of the permanent Downstream Fishway, and annual thereafter, the Licensee shall submit to the U.S. Fish and Wildlife Service, U.S. Forest Service, Washington Department of Fish and Wildlife, and Kalispel Indian Tribe a report summarizing the information obtained through monitoring as required by Condition 10.6.4 above.

APPENDIX D

Water Quality Certificate (401)

Washington Department of Ecology
AMENDED ORDER NO. 02WQER-5121A-01
CERTIFICATION CONDITIONS FOR THE BOX CANYON HYDROELECTRIC PROJECT
February 21, 2003

I. General Requirements

A. All water quality criteria as specified in WAC 173-201A-030 for Class A waters plus specific conditions for the Pend Oreille River [WAC 173-201A-130 (79)] apply to this project and the applicant shall comply with those criteria. Nothing in this order shall be construed to allow the applicant to violate Washington's water quality standards (Chapter 173-201A WAC) unless otherwise authorized by Ecology.

B. In the event of changes in or amendments to the state water quality standards (WAC 173-201A), or changes in or amendments to the state Water Pollution Control Act (RCW 90.48), or changes in or amendments to the Federal Clean Water Act, such provisions, standards, criteria or requirements shall also apply to this project and any attendant agreements, orders, or permits.

C. Discharge of any solid or liquid waste to the waters of the state of Washington without approval from Ecology is prohibited.

D. The District shall allow Ecology access during business hours to inspect the project and its operations to monitor compliance with the conditions of this order.

E. Copies of this order and associated permits, licenses, approvals and other documents shall be kept on site and made readily available for reference by the District, its contractors and consultants, and by Ecology.

II. Specific Water Quality Provisions

A. Findings [omitted – the section contains no requirements as to the licensee]
B. Total Maximum Daily Loads (TMDLs)-

1. By 2004 Ecology will begin developing TMDLs and associated implementation plans for bringing the Pend Oreille River into compliance with Washington State's standards for temperature, pH and total dissolved gas pressure. Where they are more protective, the provisions of the TMDL implementation plans relevant to Box Canyon dam and its operations, including specified time frames for implementing improvement measures, shall supercede the conditions of this order.

C. Total Dissolved Gas Pressure (Total Dissolved Gas)-

1. Within thirty days of the date FERC issues a new license for the project, the District shall submit a Total Dissolved Gas Abatement Plan to Ecology for review and approval. To date, the District has identified a combination of turbine upgrades, an auxiliary spillway bypass, and alternate gate settings as a possible approach for achieving compliance. The plan must describe these measures in detail, including a modelled prediction of how effective they will be at reducing gas generated by the project. Alternate measures may be proposed if they are equally effective at abating gas. The plan must also include a compliance schedule that may not exceed ten years, as well as sufficient benchmarks and reporting to permit Ecology to track the District's progress toward implementing the plan. Implementation of the plan shall begin as soon as Ecology has provided the District with written approval.

2. As operational, structural and other changes are implemented, the District shall monitor the effectiveness of these abatement measures at reducing Total Dissolved Gas levels. If the Total Dissolved Gas standard is met prior to or at the end of the ten year compliance period, no further improvements will be needed. However, Ecology will require continued monitoring to ensure that the Total Dissolved Gas standard continues to be met during the spill season over the range of flows expected in the Pend Oreille River.

3. If the Total Dissolved Gas standard is not met by the end of the ten year compliance period, and after the Total Dissolved Gas Abatement Plan has been implemented, the District shall evaluate and incorporate any new reasonable and feasible technologies that have been developed since the original abatement plan was prepared. If no new reasonable and feasible improvements are identified through this evaluation, the District shall either prepare a Use

Attainability Analysis (UAA), or provide scientific justification for a site-specific Total Dissolved Gas criterion.

D. Non-native Aquatic Biota-

1. Within thirty days of the date FERC issues a new license for the project, the District shall complete the Aquatic Plant Management Plan, currently in draft form, for the Box Canyon reservoir. The Aquatic Plant Management Plan shall be submitted to Ecology for review and approval. The plan needs to include containment methods for Eurasian water milfoil (Myriophyllum spicatum) and any other non-native nuisance aquatic plants in the reservoir, plus an implementation schedule and provisions for periodic monitoring to track progress toward meeting the goals of the plan. Implementation of the plan shall begin as soon as Ecology has provided the District with written approval.

2. The District shall prepare annual reports detailing progress toward meeting the goals of the Aquatic Plant Management Plan, including recommendations for modifying the plan as needed. These reports shall be submitted to Ecology.

E. Temperature-

1. Within thirty days of the date FERC issues a new license for the project, the District shall submit an Interim Temperature Management Plan for review and approval by Ecology. The plan needs to cover those times of the year when water temperatures both exceed 20^{o} C and modelling indicates that impounded conditions are warmer than unimpounded conditions in the Box Canyon reach of the Pend Oreille River. The plan shall identify all reasonable and feasible mitigation measures that could be used in the short-term to decrease any warming effects of the dam's operation on temperatures in the river. If no such mitigation measures are identified, the District shall provide Ecology with their analysis supporting that decision. Implementation of the plan shall begin as soon as Ecology has given the District written approval.

2. The Interim Temperature Management Plan shall remain in effect only until Ecology completes a temperature TMDL and its associated implementation plan for the Pend Oreille River.

III. Water Quality Monitoring and Reporting

A. Within thirty days of the date FERC issues a new license for the project, the District shall prepare a water quality monitoring and quality assurance project plan (QAPP) and submit the plan to Ecology for review and written approval. Initially, the plan shall include provisions for monitoring pH, temperature, dissolved oxygen, and total dissolved gas pressure (Total Dissolved Gas). Revisions to the QAPP may be required by Ecology in the future based on monitoring results, regulatory changes, changes in project operations and/or the requirements of TMDLs. Implementation of the plan shall begin as soon as Ecology has provided the District with written approval.

B. The QAPP shall include, at a minimum, a list of parameters to be monitored, a map of sampling locations, and descriptions of the purpose of the monitoring, sampling frequency, sampling procedures and equipment, analytical methods, quality control procedures, data handling and data assessment procedures, and reporting protocols. The District shall re-evaluate and propose any needed revisions to the QAPP at least every five years and at other times to respond to the monitoring requirements in Part II of this order. Changes to the QAPP need written approval by Ecology before taking effect.

C. Water quality monitoring results, along with a summary report, shall be submitted annually to the Department of Ecology, Eastern Region Office. Ecology will use the monitoring results to track the project's progress toward meeting and remaining in compliance with state water quality standards.

IV. Construction Activities

A. While the existing project is not a construction site, all development or mitigation projects proposed under relicensing must meet the following conditions. Ecology may require a separate section 401 water quality certification if another Federal permit is needed for construction of any development or mitigation project.

1. All water quality criteria as specified in WAC 173-201A-030 for Class A waters and specific conditions for the Pend Oreille River [WAC 173-201A-130 (79)] apply to any construction work needed to implement development or mitigation projects required under the new FERC license.

2. The turbidity criterion for Class A waters (WAC 173-201A-030(2)) may be modified to allow a temporary mixing zone during and immediately after in-water or shoreline construction activities that disturb in-place sediments.

   A temporary turbidity mixing zone is subject to the constraints of WAC 173-201A-100(4) and (6)and is authorized only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices (BMPs) to avoid or minimize disturbance of in-place sediments and exceedences of the turbidity criterion. The temporary turbidity mixing zone for waters with flows greater than 100 cubic feet per second (cfs) at the time of construction, is 300 feet downstream of the activity causing the turbidity exceedences.

V. Spill Prevention and Control

A. Any work that is out of compliance with this order, conditions causing distressed or dying fish, or any discharge of oil, fuel or chemicals into state waters or onto land with a potential for entry into state waters, is prohibited.

B. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and clean-up efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Clean-up shall include proper disposal of any spilled material and used clean-up materials.

C. Spills into state waters, spills onto land with a potential for entry into state waters, fish kills, and any other significant water quality impacts, shall be reported immediately to the Department of Ecology Eastern Region Office at (509) 329-3400. Notification shall include a description of the nature and extent of the problem, any actions taken to correct the problem, plus any proposed changes in operations to prevent further problems.

VI. Amendment of this Order

A. Ecology reserves the right to amend this order if Ecology determines that the provisions hereof no longer provide reasonable assurance that the project and its operations will comply with state water quality standards. Any such amendment shall be done through an order which can be appealed to the Pollution Control Hearings Board under RCW 43.221B. Ecology shall transmit any such orders to FERC for inclusion in the existing license.

APPENDIX E

Environmental Protection Agency (EPA)
§401 Certification Conditions for Calispell Creek Pump Works
Under FERC Project No. 2042-013 (Box Canyon Dam)

Date: January 2, 2003

General Conditions

1 The District shall provide access to the Project sites and all mitigation sites upon request by representatives of EPA or the Kalispel Tribe of Indians for site inspections, monitoring, and data collection, in order to verify that conditions of this certification are being met.

2 This certification is provisional upon, and does not exempt the applicant from, compliance with all applicable statutes, permits, requirements and codes administered by other federal, state, tribal, and local agencies.

3 This certification is valid for the duration of the proposed license.

3.1 This certification will cease to be valid if the Project is constructed and/or operated in a manner not consistent with the Project description contained in the Project's FERC application and all subsequent formal revisions and conditions contained in the FERC license issued to the Project. This certification does not preclude the Project from operating in accordance with more stringent water quality standards that may be imposed upon it.

3.2 This certification will cease to be valid and the applicant must reapply with an updated application if the information contained in the Project application or FERC license is voided by subsequent submissions by any federal or state agency or Tribe.

4 Any future actions by (or at) the Project locations, emergency or otherwise, that are not defined or provided for in the FERC license are not covered by this certification.

5 All future action(s) undertaken by the Project to satisfy the conditions of this certification shall be coordinated with EPA and the Kalispel Tribe and notice shall be provided to EPA and the Kalispel Tribe prior to implementation of such action(s). If the Kalispel Tribe is approved to administer section 401 of the CWA on the Reservation, all such coordination will be direct to the Kalispel Tribe.

6 EPA reserves the right to exercise its authority to add and alter terms and conditions of this Certification as authorized by the CWA, in order to carry out its responsibilities with respect to water quality during the life of the FERC license for the Project in order to reasonably assure compliance in light of changed circumstances.

7 A copy of this certification, any state or Tribal permit conditions or requirements, and the currently effective FERC license with all conditions shall be kept at the Project offices and shall be readily available for review and/or reference by Project personnel, operators, contractors, construction supervisors, managers, and foremen, and federal, state, and/or Tribal personnel.

8 To avoid violations of, and/or non-compliance with, this certification, the Project shall ensure that Project managers and any other parties responsible for, or delegated or contracted duties essential to, compliance with this certification have read and understand the relevant provisions of this certification, applicable permits, other requirements, and any subsequent revisions or approvals which are related or interrelated to conditions of this certification. Such individuals shall verify that this condition has been met by contemporaneously signing a log which identifies the individual, the date, and the document(s) reviewed. This log will be developed and maintained by the Project and will be made available for review by federal and Tribal inspectors. A copy of the log will be provided by the Project to such inspectors if requested.

9 Any violations of, or non-compliance with, this certification or the conditions of this certification which are discovered by the Project shall be documented and reported to EPA and the Kalispel Tribe in writing by the Project within 24 hours of Project personnel becoming aware that such violation or non-compliance has occurred. Such written report(s) shall be signed by authorized Project personnel and submitted to the appropriate EPA or Tribal office (whichever is the then current certifying authority) and may be submitted by facsimile or other electronic transmittal. A copy of such report(s) shall be maintained by the Project. Failure to report as required by this paragraph is a violation of this certification.

Water Quality Standards, General and Specific Conditions

10 **Water Quality Standards (WQS) – General**

10.1 The Kalispel Tribe of Indians (“KTI” or “Tribe”) has completed its public participation process as to its proposed Water quality Standards (WQS). However, the Tribal council must still determine whether these standards will be adopted with or without modifications and EPA has not formally

approved the Kalipsel Tribe's Water Quality Standards. Therefore, EPA is using the Washington State Water Quality Standards as guidance [WAC 173-201A].

10.1.1 Nothing in this certification shall absolve the Project from liability for violations of WQS or contamination and subsequent cleanup of surface waters occurring as a result of the Project's Calispell Creek Pump works.

10.1.2 Nothing in this certification shall be construed as to allow the Project to violate WQS.

10.1.3 Nothing in this certification shall be deemed to authorize the Project to affect water quality so as to adversely impact reserved hunting, fishing, water and other rights of the Kalispel Tribe of Indians under federal law, including cultural and ceremonial resource uses and the rights of individual Indians on the Kalispel Indian Reservation.

10.2 At the point of discharge, within the Project's Calispell Creek Pump Works area within the boundary of the Kalispel Reservation, those Works shall not contribute to exceedances of the water quality criteria as specified in WAC 173-201A-030 for Class A waters.

10.3 In the event of EPA approval of the Kalispel Tribe's water quality standards under the CWA, or there are changes in or amendments to the Clean Water Act, such provisions, standards, criteria, regulations, or requirements shall also apply to this Project and any attendant agreements, orders, or permits, as authorized by the Clean Water Act. This requirement also applies to changes in or amendments to the state WQS as to waters subject to the State water quality management and protection jurisdiction, and as to Reservation waters prior to EPA approval of the Tribe's water quality standards.

11 **Water Quality Standards (WQS) – Specific**

11.1 Calispell Creek, below the outlet of Calispell Lake and upstream of the reservation boundary, exceeds the WQS for dissolved oxygen (DO), and for temperature (T) during a portion of the year. These waters then flow into the reservation. Calispell Creek, inside the reservation boundary, also exceeds the WQS for these criteria during a portion of the year. In addition, data indicates that the criterion for fecal coliform also may be exceeded. There is no cooling, aerating, or filtering of water through the Calispell Creek Pump Works and the discharge also exceeds, or is expected to exceed, these WQS,

11.1.1 Temperatures near 30 degrees Centigrade have been recorded near the pump station inside the reservation boundary. The documentation submitted by the District as part of the license application also provides temperature data showing that Calispell Creek exceeds the temperature standard seasonally. Temperature data collected by the Tribe similarly shows that WQS is exceeded.

11.1.2 Dissolved oxygen is reported by the District in license application documentation to exceed the WQS seasonally, falling below the standard of 8.0 mg/L and reported in the range of 5 mg/L to 7.5 mg/L.

11.1.3 Fecal coliform has been measured in Calispell Creek, above the pump stations and within the reservation boundary, at levels of as high as 158 cfu/100mL which indicates that the WQS of 100 colonies/100 mL (as a geometric mean) may be exceeded both inside and above the reservation boundary.

11.1.4 The criteria for Characteristic Uses and Aesthetic Values likewise appear to not be met.

11.2 WAC Water Quality Standards: Calispell Creek, outside the Reservation boundary, is designated by the state of Washington Department of Ecology as a Class A surface water and certain criteria apply including, but not limited to, the following:

11.2.1 General characteristic. Water quality of this class shall met or exceed the requirements for all or substantially all uses. [WAC 173-201A-030 (2)(a)]

11.2.2 Characteristic Uses [WAC 173-201A-030 (2)(b): Characteristic uses shall include but not be limited to, the following: (i) Water supply (domestic, industrial, agricultural). (ii) Stock watering. (iii) Fish and shellfish: Salmonid migration, rearing, spawning, and harvesting. Other fish migration, rearing, spawning, and harvesting. Clam, oyster, and mussel rearing, spawning, and harvesting. Crustaceans and other shellfish (crabs, shrimp crayfish, scallops, etc.) rearing, spawning, and harvesting. (iv) Wildlife habitat. (v) recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment). (vi) commerce and navigation.

11.2.3 Fecal Coliform Organisms for Freshwater [WAC 173-201A-030 (2)(c)(i)(A)]: Freshwater – fecal coliform organism levels shall both not exceed a geometric mean value of 100 colonies/100 mL, and not have more than 10 percent of all samples obtained for calculating the geometric mean value exceeding 200 colonies/100mL.

11.2.4 Dissolved Oxygen [WAC 173-201A-030 (2)(c)(ii)(A)]: Freshwater – dissolved oxygen shall exceed 8.0 mg/L.

11.2.5 Temperature [WAC 173-201A-030 (2)(c)(iv)]: Temperature shall not exceed 18.0° C (freshwater) or 16.0 ° C (marine water) due to human activities. When natural conditions exceed 18.0° C (freshwater) and 16.0° C (marine water), no temperature increases will be allowed which will raise the receiving water temperature by greater than 0.3 ° C.

Incremental temperature increases resulting from point source activities shall not, at any time, exceed t=28/(T+7) (freshwater) or t=12/(T-2) (marine water). Incremental temperature increases resulting from nonpoint source activities shall not exceed 2.8 ° C

For purposes hereof, "t" represents the maximum permissible temperature increase measured at a mixing zone boundary; and "T" represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge.

11.2.6 Turbidity [WAC 173-201A-030 (2)(c)(vi)]: Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. (NTU means nephelometric turbidity units).

11.2.7 Aesthetic values [WAC 173-201A-030 (2)(c)(vi)]: Aesthetic Values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

11.2.8 "Natural conditions" or "natural background levels" means surface water quality that was present before any human-caused pollution. When estimating natural conditions in the headwaters of a disturbed watershed it may be necessary to use the less disturbed conditions of a neighboring or similar watershed as a reference condition. [WAC 173-201A-020]

12 **Total Maximum Daily Load (TMDL)**

12.1 The state of Washington may adopt a Total Maximum Daily Load (TMDL) pursuant to section 303(d) of the Clean Water Act (CWA) for that portion of Calispell creek above the pump stations and outside the reservation

boundary. After final approval by the EPA of such a TMDL for temperature (or other parameters specified by the state), EPA expects that the District shall implement those measures in the associated implementation plan(s) specific to the Project and its operations to ensure that waters entering the reservation above the Calispell Creek Pump Works meet the WQS or are not impaired as a result of the Project and its operations.

12.2 The same condition as in 12.1 also applies to any CWA section 303(d) listing by EPA or the Kalispel Tribe and any TMDL approved by EPA for waters of Calispell Creek inside the Tribal reservation boundary.

13 **Temperature [WAC 173-201A-030(2)(c)(iv)]**

13.1 Inside the Tribal reservation boundary and near the confluence of Calispell Creek with the Pend Oreille River (aka Box Canyon reservoir), a dike and associated works (e.g., gates, pumps) have been constructed which are a part of the Project. These Calispell Creek Pump works physically control the water surface elevation and the flow regime of water between the creek and the river. The pumps are used periodically to move water from the creek through the dike and into the river. Non-continuous operation of these pumps could potentially result in water being impounded behind and upstream of the dike during periods when the pumps are not running. Impoundment of the water would likely alter the temperature regime of the creek in the impounded reach.

13.2 Temperature data shows that groundwater inflow to the creek (or other processes) likely exerts a cooling influence on the creek during those periods when Calispell Creek exceeds the WQS for temperature.

13.3 In order to minimize effects on the temperature regime of the creek due to the pump operations, when the discharge temperature form the pump(s) within the reservation boundary exceeds the WQS, the pump(s) shall be operated such that a near natural elevation of the water surface is maintained and all inflow is passed through the pumps.

13.4 In the alternative, during those periods when the temperature exceeds the WQS, the gates through the dike shall be opened in order that the elevation of the water surface of the creek is not influenced by the reservoir, dike and/or operation of the pump(s). This alternative is subject to flood control considerations.

13.5 The District may seek approval from EPA and the Kalispel Tribe for a different alternative to mitigate temperature exceedances. If the District seeks approval of a different alternative, it shall submit a detailed proposal prior to, along with, or subsequent to, the plan required under section 14. EPA and the Kalispel Tribe shall review, comment on, and approve or disapprove such plan. Such alternative plan may replace or supercede the plan required under section 14 only upon specific written notice from EPA and the Kalispel Tribe.

14 Plan for Pump Operations (PPO)

14.1 The District shall prepare an approvable Plan for Pump Operations (PPO) and submit this plan to EPA within 90 calendar days after issuance of the license by FERC. EPA shall review, comment on, and approve or disapprove such plan. The PPO shall be submitted to the address specified in paragraph 18. Written disapproval of the PPO by EPA shall constitute non-compliance with this certification by the District.

14.1.1 The objectives of the PPO are: (1) to minimize water impoundment behind the dike and pump stations and (2) to maintain, to the extent practicable, the natural elevation of the water surface and ensure that all inflow is passed through the pumps or through the gates during periods when the creek/discharge is at or above the WQS for temperature. The plan, when approved by EPA, shall be implemented by the District within 30 calendar days of approval by EPA, unless additional time is approved by EPA.

14.1.2 The PPO shall provide an estimate of the Natural Condition for the seasonal elevation and flow regime of Calispell Creek for those periods when the temperature WQS is not met and include the method(s) and data used to develop the estimate.

14.1.3 The PPO shall also include recommendations and a schedule for alteration of one or more pumps and/or for the installation of new pumping equipment (e.g., to provide for variable speed pumping) in order to achieve the objectives of paragraph 14.1.1. Such alteration or installation shall be implemented according to the schedule provided in the PPO approved by EPA.

14.1.4 The PPO shall include a proposal for modeling the temperature regime. If additional data is necessary for the modeling effort, it shall be collected in accordance with section 17.

14.1.5 As necessary, the plan shall take into account other requirements for flow in Calispell Creek, or pumping regimes or equipment, or fish passage measures, or structures to be constructed, or other measures, which are included as final conditions to the license issued by FERC. The PPO shall specifically identify where, and describe how, such other requirements interfere with the objectives of paragraph 14.1.1.

14.1.6 The District may request modification of the PPO as data and circumstances warrant. Such requests shall provide detailed supporting information for the request. Until such time as EPA acts on such request(s), the previously approved PPO shall be implemented.

14.1.7 The terms and conditions of EPA approved PPOs are enforceable as requirements of this certification.

15 **Equipment Operation/Maintenance/Repair – Calispell Creek Pump Works**

15.1 Petroleum and fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into surface water or ground water.

15.2 Lubricants, fuels, cleaning agents, or any other chemicals used by the Project during normal operation or maintenance or repair (or stored by the Project) shall not be allowed to enter surface water or ground water. Any drains, sumps, or other conveyances shall be protected against inadvertent or accidental releases of such materials. Such materials which are wasted or waste generated from the use of such materials shall be disposed of in accordance with applicable federal, Tribal, state, and/or local requirements.

15.3 Equipment shall be cleaned so as to be free of petroleum products and well maintained to ensure petroleum products do not leak.

15.4 Materials such as sorbent pads or booms shall be available on-site to contain and clean up any spills as a result of equipment maintenance or failure.

15.5 In the event of discharge of oil, fuel, or chemicals into state or Reservation waters or onto land with potential for entry into such waters; containment and cleanup shall begin immediately, be completed as soon as possible, and take precedence over normal work.

15.6 Spills into state or Reservation waters, or spills onto land with potential for entry into state or Reservation waters shall be immediately reported to the appropriate agencies. No refueling of equipment shall occur over, or within 100 feet of, creeks or wetlands.

16 **Construction – Calispell Creek and Calispell Creek Pump Works**

16.1 To the extent that the Project's Calispell Creek Pump Works is a construction site, all development or mitigation projects initiated under this relicensing must meet the following conditions. A separate section 401 certification may be required if another Federal permit is required for construction of any development or mitigation project.

16.2 All water quality criteria as specified in WAC 173-201A-030 apply to any construction work needed to implement development or mitigation projects conducted by the District within the reservation boundary which either are required under the new FERC license or impact Calispell Creek.

16.3 Cement: West concrete shall be prevented from entering surface water or ground water. Forms for any concrete structure shall be constructed to prevent leaching of wet concrete. Impervious materials shall be placed over any exposed concrete not lined with the forms that will come in contact with surface water or ground water. Forms and impervious materials shall remain in place until the concrete is cured.

16.4 Construction debris: All construction debris and excess excavated material shall be disposed of at a suitable (i.e., permitted) upland location and in a manner that prevents entrance to a waterway or causes degradation of waters of the United States.

16.5 No construction equipment shall be operated in buffers or adjacent wetlands or open waters outside of an established project footprint. Any such footprint shall be as small as practicable and be protected by a physical barrier against contact with adjacent surface water until completion of that portion of the construction project requiring such footprint.

16.6 The turbidity criterion of WAC 173-201A-030 may be modified to allow a temporary mixing zone during and immediately after necessary in-water or shoreline construction activities. A temporary turbidity mixing zone is subject to the constraints of WAC 173-201A-100 and is authorized only after the activity has received all other necessary local permits and approvals and after the implementation of appropriate best management practices (BMPs) to avoid or minimize exceedances of the turbidity

criterion. Suggested BMPs are described in Ecology Publication No. 99-06, *Working in the Water*.

16.7 The conditions of section 15 (above) shall also apply to all construction activities within the Tribal reservation boundary.

17 Monitoring and Reporting

17.1 A complete and approvable Water Quality Monitoring Plan (WQMP), which includes a Quality assurance Project Plan (QAPP), for Calispell Creek shall be prepared and submitted to EPA and to the Kalispel Tribe. EPA and/or the Kalispel Tribe shall review, comment on, and approve or disapprove such plan. The WQMP shall be submitted to the address specified in paragraph 18. Written disapproval of the WQMP by EPA or the Kalispel Tribe shall constitute non-compliance with this certification by the District. The WQMP shall be submitted within 90 calendar days after issuance of the license by FERC and shall be implemented within 30 calendar days of approval by EPA or the Kalispel Tribe, unless additional time is provided by EPA or the Tribe.

17.2 The WQMP shall provide for the recording of pumping rates and for monitoring of Calispell Creek, within the reservation boundary, for temperature, fecal coliform, E. coli, turbidity, dissolved oxygen (DO), water elevation, and flow. Monitoring locations shall include (at a minimum) a site at or near the pump station on the upstream side of the railroad dike and a site just below the discharge point on the pump station(s). In addition, the WQMP may include a provision for monitoring at or near the outlet of Calispell lake (just below the Duck Club dam). Specific locations shall be identified in the WQMP.

17.2.1 Monitoring for additional parameters may be required by EPA or the Kalispel Tribe based on monitoring results, new information on violations of different WQS, regulatory changes, or changes in Project operations at the Calispell Creek Pump Works. Within 60 days of written notice from EPA or the Kalispel Tribe that additional monitoring for additional parameters is necessary, the District shall develop and submit a revised WQMP in accordance with paragraph 17.1.

17.2.2 In addition, the WQMP shall include that monitoring necessary to support the modeling proposal required under Section 14.

17.3 At a minimum, parameters for each monitoring site are to be as follows:

17.3.1 At Calispell Lake outlet below the Duck Club dam (if this monitoring location is included): Temperature, Turbidity, DO, fecal coliform, E. coli, and flow.

17.3.2 In Calispell Creek adjacent to, and upstream of, the pump station(s): Temperature, Turbidity, DO fecal coliform, E. coli, water elevation, and flow.

17.3.3 In the discharge canal downstream of the pump station(s): Temperature, Turbidity, DO, fecal coliform, and E. coli.

17.4 The objectives of the WQMP are to measure the water quality parameters of temperature, turbidity, DO, fecal coliform, and E. coli in order to determine and document compliance with the applicable WQS and to measure trends over time. In addition, flow and water elevation are to be measured, and pumping rates recorded, in order to provide a basis for changes in the Calispell Creek Pump Works and their operation (if necessary) to achieve, as near as possible, a natural flow and temperature regime. This data is also to be used to evaluate the effect of pump operations on temperature and DO as well as to demonstrate compliance with this certification.

17.5 Monitoring shall begin as provided in paragraph 17.1 and shall continue for a minimum of 5 years. Interim reports shall be prepared annually by the District, after each year of monitoring, which includes all the data collected and summarizes and evaluates the data using the then applicable WQS (Annual Water Quality Monitoring Summary Report for the Calispell Creek Pump Works). The District shall collect all data consistent with the requirements for STORET entry. All collected data shall be entered into STORET at least annually. At the end of the 5th year of monitoring, the District shall prepare and submit a Fifth Year Water Quality Monitoring Report for the Calispell Creek Pump Works which supplies and summarizes all data collected over the term of the WQMP and identifies and analyzes trends in the data and evaluates factors contributing to those trends. This 5th year report shall also include conclusions regarding the collected data and compliance with WQS as well as recommendations regarding continued monitoring or for its cessation.

17.5.1 All plans and reports shall be submitted to the addresses provided in paragraph 18. All annual reports shall be due 90 calendar days following completion of the sampling year during which the data was collected. The 5th year report shall be due 150 calendar days following completion of the 5th sampling year of data collection. The report(s) shall be submitted in

hard copy (two copies) and electronic format. The software to be used by the District for submission of the electronic format version of the report(s) is to be specified in the WQMP (the software identified in the approved WQMP for report submission may be changed by mutual agreement and after written confirmation from EPA).

17.5.2 EPA and the Kalispel Tribe shall review the 5th year report and notify the District of modification(s) and/or approval of the District recommendations for continued monitoring or its cessation. If continued monitoring is approved, the District shall submit a new WQMP, including a QAPP, which comports to the EPA and/or Tribal approval and shall implement the approved WQMP within 30 calendar day after approval, unless additional time is provided by EPA and/or the Tribe.

17.5.2.1 During the time period when the 5th year report and its recommendations are being prepared, submitted, reviewed, and approved by EPA or the Kalispel Tribe, and during the time required to develop and approve a new WQMP, the District shall continue to implement the monitoring program of the existing WQMP originally approved under this certification.

17.6 The terms and conditions of EPA and the Tribe's approved WQMPs are enforceable as requirements of this certification.

18 **Mailing Address:** All plans, reports, or other submissions required by this Certification are to be sent to the mailing addresses as follows: 1) U.S. EPA Region 10, Office of Water, OW-135, 1200 Sixth Ave., Seattle, WA 98101-1128. 2) the Kalispel Tribe of Indians, Natural Resource Department, P.O. Box 39, Usk, WA 99180. These addresses are to be verified prior to submission of documents and, if necessary, corrected to the then current address.

APPENDIX F

PLAN E
For Operation of Calispell Creek Pumps

This Agreement is entered into by and between Public Utility District No. 1 of Pend Oreille County (PUD) of Newport, WA and Diking District No. 2 (District) of Usk, WA, (the Parties), both municipal organizations organized under the laws of the State of Washington, and shall be effective on the date written below.

This is the entire Agreement between the Parties, and this Agreement supercedes any and all previous agreements, written or verbal, between the Parties concerning the operation of the Calispell Creek Pumping Plant.

All elevations referred to in this plan refer to the elevation of the USGS Cusick gauge at Cusick at river mile 70.1 The PUD agrees to operate the Calispell Creek Pumping Plant in coordination with the Box Canyon Hydroelectric Project as follows:

(1) While the dike gates are closed, and river flows are below 70,000 cfs, Box Canyon Dam may maintain 2.0 foot backwater (above normal) at Albeni Falls Dam. At 70,000 cfs, an elevation of 2041 is reached at Cusick. This elevation (2041.0) results from a flow of about 70,000 cfs with 2.0 foot of backwater at Albeni Falls, and is also the natural elevation for mean high water of approximately 90,000 cfs at Cusick. As flows further increase, this elevation shall not be exceeded if operation of gates at Box Canyon can prevent it, and it will be maintained as long as possible by opening the Box Canyon gates. After the flow exceeds 90,000 cfs, the Box Canyon plan will be out of production due to loss of head, and after it is out of production, the Box Canyon gates will be entirely removed, allowing the Pend Oreille to raise in its completely natural manner.

(2) After the flood peak of the Pend Oreille has passed, and the river has receded in a natural manner to elevation 2041 at Cusick, this elevation will be held until 2.0 foot backwater is again reached at Albeni Falls at a flow of 70,000 cfs and then 2.0 foot of backwater will be maintained.

(3) This plan provides two pumps, each of 65 cfs capacity, and four pumps, each of 100 cfs capacity, at the dike at Cusick, which will be set to operate automatically to maintain an approximate elevation of between 2027.0 and 2028.0 from November 1 to May 31, in the Calispell inside the Diking District at Cusick. To achieve this, pumps will normally be set to start automatically at an elevation of 2028.0 and shut down automatically at elevation 2027.0, keeping the Calispell within this range. This pump capacity is approximately

15 times the normal winter runoff, but there still may be very high flow times when the elevation of the Calispell water will be higher that 2028.0, even with all 6 pumps running. If that occurs, operation will be according to (4) below. From June 1 to October 31, the pumps will be set to operate automatically to maintain an approximate elevation of between 2027.0 and 2027.5.

(4) Whenever the elevation of the Pend Oreille River reaches 2032.25, the natural elevation of the quantity of water flowing in the Pend Oreille shall be computed, (the natural elevation of 43,000 cfs being 2032.25), and pumping of Calispell water will be continued at the capacity of the pumps until the Calispell reaches either 2032.25, if the Pend Oreille is flowing less than 43,000 cfs, or the natural elevation of the Pend Oreille is flowing 43,000 cfs, or more. The gates at Box Canyon will be opened sufficiently in advance of that time so that 2032.25 elevation or natural elevation above 2032.25 will be reached at, or before, the Calispell reaches the same elevation. The dike gates shall then be opened and the Calispell allowed to flow out in its natural manner for such periods as it will continue to flow out. If the natural elevation of the Pend Oreille becomes such that the flow is reversed in the Calispell, the dike gates shall again be closed and shall remain closed with the pumps operating while the natural elevation of the Pend Oreille is higher than that of the Calispell. "Natural elevation" is defined to mean the level at Cusick that the Pend Oreille River would reach if there were no gates installed at Box Canyon Dam at any particular flow.

(5) After a flood condition, when the flow of the Pend Oreille River drops back down to approximately 43,000 cfs, which is equivalent to a natural elevation of 2032.5 at Cusick, or if the flow in the Calispell is such that the pumps are able to pump enough to lower the Calispell level, the dike gates will be closed, and the Calispell River water level will be pumped down to elevation 2027.0 and maintained at this elevation as described in #3 above.

(6) The Parties agree that the elevations, dates and other operating criteria contained in Plan E are essential conditions of this Agreement. The PUD assumes responsibility for all the maintenance and operation of the six pumps at the Calispell Pumping Station and the maintenance of the culverts in the railroad dike at the mouth of the Calispell River that prevent flooding behind the dike during high water. The Parties further agree that if Public Utility District No. 1 of Pend Oreille County (PUD) does not operate the Calispell Pumps in accordance with Plan E, the Diking District will suffer loss and damages. As it is very difficult to establish the exact amount of damages in the event of noncompliance with Plan E, the Parties agree that the following amounts are fair and equitable liquidated damages for noncompliance with Plan E.

- From March 15 to June 1 -- $10,000 per day of noncompliance.
- From June 2 to March 14 -- $1,000 per day of noncompliance.

Should any noncompliance continue for more that 5 consecutive days, an additional amount of $50,000 of liquidated damages shall be paid. For each 5 consecutive days of noncompliance, an additional $50,000 of liquidated damages shall accrue. The PUD agrees to pay to the Diking District the above liquidated damages within 90 days of the beginning of any noncompliance event.

The Diking District agrees that the liquidated damages specified above will satisfy any and all damages incurred by the Diking District and that no additional claims of damages shall be made by the Diking District, except as is mentioned in the following paragraph. The Parties agree that the amount of these liquidated damages may be re-negotiated five years after the date of this Agreement, and once every five years after that, and that any new amounts of liquidated damages must be agreed upon by both Parties at that time, in writing, and shall be amended to this Agreement.

The Parties further agree that the liquidated damages specified above may not completely protect the Diking District from third party liabilities. Therefore, in the event of a non-compliance with Plan E, the PUD agrees to reimburse the Diking District for any final judgement amount, awarded to a third party by an authorized Court, that is in excess of the liquidated damages specified above, as long as such judgement is based upon such non-compliance event. The PUD is not obligated to pay any judgement amounts that are less than the liquidated damages paid to the Diking District for the non-compliance event, or for any judgements against the Diking District that are not related to a Plan E non-compliance event.

The Parties agree that the PUD will make its best effort to operate the Calispell Pumps in accordance with Plan E. "Best efforts" is defined to include, but not be limited to, taking prompt action when it is necessary to start or stop pumps, opening gates at Box Canyon at maximum allowable rates, and performing any required maintenance work on the pumps promptly and expeditiously. The PUD is not responsible for noncompliance with Plan E if such noncompliance is due to acts of God or other force majeure events that are not under the control of the PUD, such as floods, droughts, civil unrest, or war.

(7) From time to time, the PUD may apply in advance in writing for permission and approval from the Diking District to modify or not fully comply with Plan E for short periods of time due to maintenance of the pumps and dike or other operating needs or emergencies, and if approved in advance by the Diking District, no

liquidated damages shall accrue or become payable during any such period if approved and accepted in advance by the Diking District.

(8) Furthermore, from time to time, the Diking District may request to the PUD in writing short term modifications to the pump operations or Calispell Creek levels to facilitate dike maintenance activities, Calispell Lake operations, or specific agricultural needs of its members. The PUD shall use its best efforts to comply with all such written requests. It is agreed that no liquidated damages would apply due to any such operational changes requested in writing by the Diking District. The Diking District agrees that all individual requests for short term modification of operating methods or levels made by its individual members will be made first to the Diking District by the members, and then by the Diking District to the PUD, so that both Parties are aware of all changes that might be in effect at any one time. To facilitate coordination of this Agreement and to provide for potential short term modifications to Plan E, the Parties agree to meet annually during the first week of March to plan, discuss and possibly agree upon any modifications to Plan E operations desired by either Party for the upcoming season.

(9) For the first three years of this Agreement, in the month of September each year, the Parties shall meet and discuss operating procedures, communications, and the overall functioning of this Agreement, and propose any changes or modifications to the Agreement deemed desirable by either of the Parties. Any such proposed changes shall be negotiated in good faith by both Parties, and when consensus is reached, any changes shall be reduced to writing, signed by both Parties and amended to this Agreement. After three years, meetings will be held at five-year intervals, unless agreed upon by both parties that such five-year meetings are unnecessary.

(10) This Agreement shall remain in force until such time as it is terminated by mutual agreement of the Parties in writing. Any changes or amendments to this Agreement shall be reduced to writing and signed by both Parties before any such changes are considered to be in effect.

Accepted By: Diking District No. 2	Accepted By: Public Utility District No. 1 of Pend Oreille County
/s/ Commissioners	/s/ General Manager
(Dated 10/9/00)	(Dated 9/26/00)