136 FERC ¶ 62,188
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Public Utility District No. 1 of Snohomish County, Washington — Project No. 2157-188

ORDER ISSUING NEW LICENSE

September 2, 2011

INTRODUCTION

1. On June 1, 2009, Public Utility District No. 1 of Snohomish County (District) filed, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),[1] an application for a new license to continue operation and maintenance of the Henry M. Jackson Hydroelectric Project No. 2157 (Jackson Project or project). The project's authorized capacity being licensed is 111.8 megawatts (MW). The project is located on the Sultan River, 20 miles east of the City of Everett, Washington, in Snohomish County. The project occupies 10.9 acres of the Mount Baker-Snoqualmie National Forest administered by the U.S. Forest Service (Forest Service).[2]

2. As discussed below, I am issuing a new license for the project.

BACKGROUND

3. The Commission issued the original license for the Jackson Project on June 16, 1961,[3] and the license expired on May 31, 2011.[4] Since then, the District has

[1] 16 U.S.C. §§ 797(e) and 808 (2006), respectively.

[2] The project is required to be licensed under section 23(b)(1) of the FPA, 16 U.S.C. § 817 (2006), because it occupies federal lands.

[3] *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 25 F.P.C. 1160 (1961). The project was built in two phases. Phase 1 was completed in 1965 and included the building of Culmback dam and the creation of Spada Lake; phase 1 was used for water storage for the City of Everett, but no electricity was generated. The license was amended on October 16, 1981, to authorize the construction of the existing 111.8 megawatt powerhouse and to raise Culmback dam by 62 feet to its current crest elevation of 1,470 feet mean sea level. *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 17 FERC ¶ 61,056 (1981). The (continued)

operated the project under an annual license pending the disposition of its new license application.

4. On August 18, 2009, the Commission published notice of the application for new license; accepting the license application; soliciting motions to intervene and protests; and soliciting comments, final recommendations, terms and conditions, and prescriptions. On October 14, 2009, the District filed a comprehensive settlement agreement, resolving all issues among the signatories related to the relicensing of the project, and proposing to relicense the project in accordance with the terms of the settlement agreement. Signatories to the settlement agreement are: the District; National Marine Fisheries Service (NMFS); Forest Service; U.S. Fish and Wildlife Service (FWS); U.S. National Park Service; Washington Department of Fish and Wildlife (Washington DFW); Washington Department of Ecology (Ecology); Tulalip Tribes of Washington (Tulalip Tribes); Snohomish County, Washington; City of Everett; City of Sultan; and American Whitewater. On October 15, 2009, the Commission published notice of the settlement agreement, soliciting comments on the agreement, and extending the deadline for filing interventions, comments, recommendations, and preliminary terms and conditions to November 6, 2009.

5. The U.S. Department of Interior, Forest Service, and NMFS filed notices of intervention.[5] Washington DFW; jointly, the Alpine Lakes Protection Society, North Cascades Conservation Council, and Pilchuck Audubon Society; Snohomish County, Washington; City of Everett, Washington; Ecology; Trout Unlimited; American Whitewater; and the Tulalip Tribes timely filed motions to intervene.[6] None of the intervenors oppose the project.

6. Comments, recommendations, and terms and conditions were filed by the City of

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Sultan River Project was renamed the Henry M. Jackson Project in 1984.

[4] The original license for the project included the City of Everett as a co-licensee. In 2007, the city and District requested and received Commission approval to remove the city as a co-licensee. *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 121 FERC ¶ 61,269 (2007).

[5] Under rule 214(a) of the Commission's Rules of Practice and Procedure, Interior, Forest Service, and NMFS became parties to the proceeding upon the timely filing of their notices of intervention.

[6] Timely, unopposed motions to intervene are granted by operation of Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 18 C.F.R. §385.214 (c) (2011).

Everett, NMFS, Forest Service, Washington DFW, Interior, Trout Unlimited, and Tulalip Tribes. All of these entities filed comments supporting the settlement agreement. No comments opposing the settlement agreement were filed.

7. On May 4, 2010, staff issued a draft environmental assessment (EA) on the application to relicense the project, including the settlement agreement. The District, City of Everett, Washington DFW, FWS, and the Forest Service filed comments on the draft EA. On November 4, 2010, Commission staff issued a final EA.

8. The motions to intervene, comments, recommendations, and terms and conditions have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION AND OPERATION

A. Project Area

9. The Jackson Project is located on the Sultan River in northwestern Washington. The headwaters of the Sultan River are located within the Washington Department of Natural Resources' (Washington DNR) Morning Star Natural Resources Conservation Area and the Mount Baker-Snoqualmie National Forest. The South Fork Sultan River, North Fork Sultan River, and Williamson Creek flow into Spada Lake, the reservoir impounded by the project's Culmback dam. Downstream of Culmback dam, the Sultan River flows through a deep forested gorge for nearly 14 miles. The river channel in this reach is relatively high gradient and confined within steep rock walls. The project powerhouse is located near the downstream end of the gorge where the Sultan River emerges onto a broad, relatively flat valley floor. The city of Sultan is located at the mouth of the Sultan River where it joins the Skykomish River about 3 miles downstream of the end of the gorge. The city of Sultan business district is located within the floodplain of both rivers.

B. Project Facilities

10. Culmback dam, a 640-foot-long, 25-foot-wide, and 262-foot-high earth and rockfill structure located at river mile 16.5, impounds Spada Lake, an approximately 1,908-acre reservoir with a storage capacity of 153,260 acre-feet at a full pool water surface elevation of 1,450 feet.[7] The base of the dam is equipped with outlet works that provide a 20-cubic-foot-per-second (cfs) minimum instream flow release below

[7] All elevations are referenced to mean sea level (msl). At the normal maximum elevation of 1,445 feet, the reservoir is approximately 1,802 acres with a storage capacity of 143,982 acre-feet.

Culmback dam.[8] A 110-foot-tall concrete intake structure on the left bank of the reservoir, with three 20-foot movable panels, withdraws unscreened water from various depths into a 3.8 mile-long, 14-foot-diameter unlined tunnel, which in turn flows into a 3.7-mile-long, 10-foot-diameter underground steel pipeline that leads to the Jackson powerhouse.[9]

11. The Jackson Project powerhouse is a two-story, 200-foot-long by 71-foot-wide, reinforced concrete structure. The powerhouse contains four turbine-generating units with a total installed capacity of 111.8 MW. Units 1 and 2 are Pelton turbines rated at 47.5 MW each, and units 3 and 4 are Francis turbines rated at 8.4 MW each. Flows that are required to meet either the city of Everett's water demands or instream flow requirements pass through the Francis turbines. These flows then enter the Lake Chaplain pipeline, a 3.5-mile-long, 72-inch-diameter underground pipeline, and are propelled up-gradient by the head differential between Spada Lake and City of Everett's non-project Lake Chaplain municipal water storage reservoir. A control structure (Portal 2), located at the terminus of the pipeline on the shore of Lake Chaplain, delivers flows needed for the city of Everett's consumptive water supply in to Lake Chaplain and delivers flows needed to meet minimum instream flow requirements below the Sultan River diversion dam back to the river, through the 1.5-mile long Sultan River diversion dam tunnel and a 2,000-foot-long, 72-inch diameter concrete pipeline (see Figure 1).

[8] A concrete diversion tunnel through the dam's right abutment intersects with the spillway tunnel. The diversion tunnel encases two 48-inch-diameter conduits with valves that are used to provide the 20 cfs instream flow. When the spillway tunnel is dewatered for maintenance or safety inspections, the 20 cfs minimum flow is provided via a 16-inch diameter pipeline that runs through the right side of the dam at elevation 1,408 feet, then along its downstream face.

[9] A concrete morning glory spillway -- basically a large cement funnel -- is located within Spada Lake about 250 feet upstream from the right abutment of Culmback dam. This spillway has a 94-foot-diameter ogee crest, a 38-foot-diameter vertical shaft, and a 700-foot-long, horizontal tunnel section that discharges into the Sultan River at the base of Culmback dam. The morning glory spillway crest elevation is at 1,450 feet and is designed to pass the probable maximum flood of 57,790 cubic feet per second (cfs) at elevation 1,464.6 feet. Rather than spilling over the dam, high waters spill into the funnel.

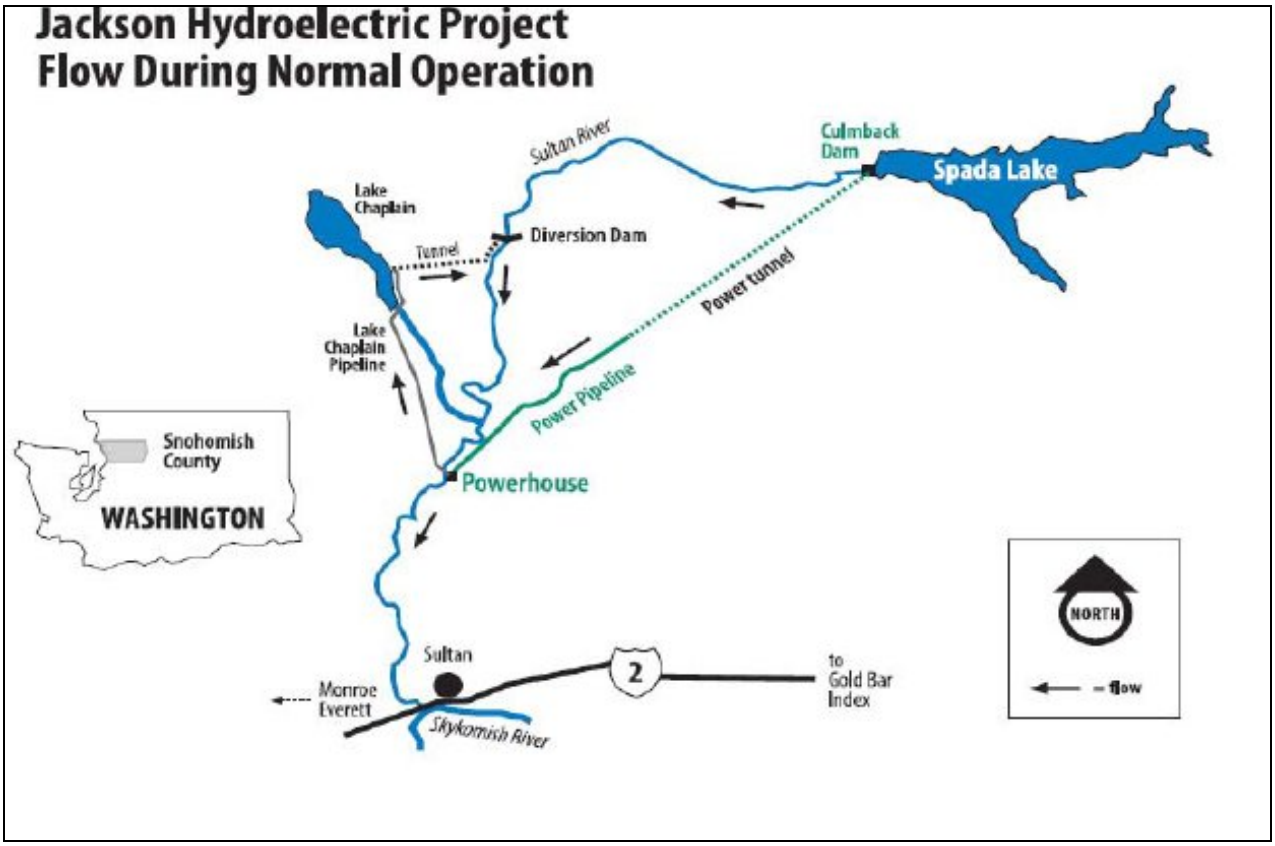

Figure 1. Jackson Project Facilities

12. The Sultan River diversion dam, located at RM 9.7 in the Sultan River bypassed reach, is a 120-foot-long, 20-foot-high, ogee-crested, concrete gravity diversion dam. Historically, the Sultan River diversion dam functioned exclusively to provide water to the Lake Chaplain municipal water storage reservoir. Under existing operations, however, the Sultan River diversion dam only occasionally diverts water from the intake on the Sultan River through the Sultan River diversion dam tunnel and pipeline to Lake Chaplain as back-up municipal water supply when the Jackson Project powerhouse is not operating. As noted above, the Sultan River diversion dam pipeline and tunnel are also used to return flows to the Sultan River to meet minimum instream flow requirements below the diversion dam. Thus, flows can travel from the dam to the lake or from the lake to the dam, depending on water supply and minimum flow requirements.

13. Flows that are not required for water supply or minimum instream flow are passed through the Pelton turbines and discharged directly to the Sultan River through the powerhouse tailrace. Flows through the powerhouse bypass a 12-mile long reach of the Sultan River.

14. The project does not have a transmission line. A switchyard adjacent to the powerhouse delivers power to the District's existing transmission system.

C. Project Recreation Facilities

15. In accordance with the Recreation Use Plan approved on December 5, 1994,[10] the District operates and maintains six day-use recreation sites at Spada Lake. Of the six recreation sites, only the portions of the South Fork Recreation Site, South Shore Recreation Site, and Nighthawk Recreation Site below elevation 1,460 feet are located within the project boundary; the remaining recreation sites, Bear Creek, North Shore, and Olney Pass, are located outside of the project boundary.

16. The District and the City of Everett also cooperatively developed six river access areas along the Sultan River, downstream from the Sultan River diversion dam; all are currently located outside the project boundary. These access areas, from upstream to downstream, are: (1) Sultan River Diversion Dam River Access Area; (2) Horseshoe Bend River Access Area; (3) Old Gaging Station Road River Access Area; (4) Powerhouse West River Access Area; (5) Powerhouse East River Access Area; and (6) Trout Farm Road River Access Area.[11]

D. Project Boundary

17. The existing project boundary encloses Spada Lake and its shorelands below elevation 1,460 feet, Culmback dam, a portion of the Culmback dam access road, the power tunnel and pipeline from Spada Lake to the powerhouse and associated rights-of-way, the powerhouse, the switchyard, the powerhouse access road, the Lake Chaplain water supply pipeline (including the pipeline, the tunnel, associated rights-of-way, and the Portal 2 structure), and the Sultan River diversion dam. The existing project boundary encompasses about 2,286.0 acres; 1,928.1 acres are lands that were formally within the Mount Baker-Snoqualmie National Forest and are subject to section 24 of the Federal Power Act,[12] and 10.9 acres underlying the power tunnel are lands within the Mount Baker-Snoqualmie National Forest.

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[10] See *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 69 FERC ¶ 62,188 (1994),

[11] See *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 69 FERC ¶ 62,188 (1994).

[12] In 1991, the District and the Forest Service negotiated a land exchange to transfer ownership of lands inundated by the project and adjacent to Spada Lake to the District. Such a transfer does not relieve the licensee of annual charges, because any such transfer would be subject to section 24 of the FPA, and therefore remain federal property subject to annual charges provision of section 10(e) of the FPA. *Montana Power Company and Granite County, Montana* 67 FERC ¶ 61,296 (1994).

E. Current Project Operation

18. The District operates the project to satisfy the City of Everett's municipal water supply needs, protect aquatic resources, maintain Spada lake levels for summer recreation, and generate electricity. To meet these competing objectives, the District developed operational rule curves, which the Commission approved on July 23, 1996,[13] that define four different reservoir states that shift throughout the July through June water year. Figure 2 below shows the existing rule curves (dashed line) and the District's proposed changes to the rule curves (solid line). When Spada Lake is above elevation 1,450 feet, the project is spilling water (State 1—Zone of Spill), during which the District operates the project to withdraw at least 1,300 cfs[14] through the power tunnel to lower lake levels. The State 2 rule curve defines a reservoir elevation that ranges from about 1,450 feet in mid-June to about 1,448 feet by October 1, drops to 1,430 feet from about November 1 to mid-February, and gradually rises to about 1,450 feet by about mid-June. When Spada Lake is above these elevations, but below 1,450 feet (State 1), the project is considered to be in the Zone of Potential Spill, during which the District operates the project to withdraw at least 1,300 cfs through the power tunnel. State 3 is the Zone of Discretionary Operation, during which the District can generate power at its discretion, subject to instream flows, ramping rates, and summer Spada Lake elevations. The existing State 3 rule curve defines a minimum reservoir elevation of 1,440 feet from July 1 to September 1 to maintain summer lake elevations for recreation; the minimum reservoir level drops sharply to 1,410 feet by October 1, where it is maintained until May 1 to capture spring snow melt; then the minimum reservoir level gradually rises to 1,440 feet by July 1. Generally, if lake elevations drop below 1,440 feet between June and early September, or below 1,410 between October and May, then the project is considered to be in the Zone of Conservation (State 4), during which the District releases flows from Spada Lake only to satisfy water supply obligations to the City of Everett and the minimum instream flow requirements, discussed next.

[13] See *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 76 FERC ¶ 62,053 (1996).

[14] Together, the two Pelton units can discharge up to 1,438 cfs directly to the river; likewise, together the two Francis units can discharge up to 390 cfs through the Lake Chaplain pipeline to Portal 2 for diversion into Lake Chaplin and/or return to the Sultan River diversion dam.

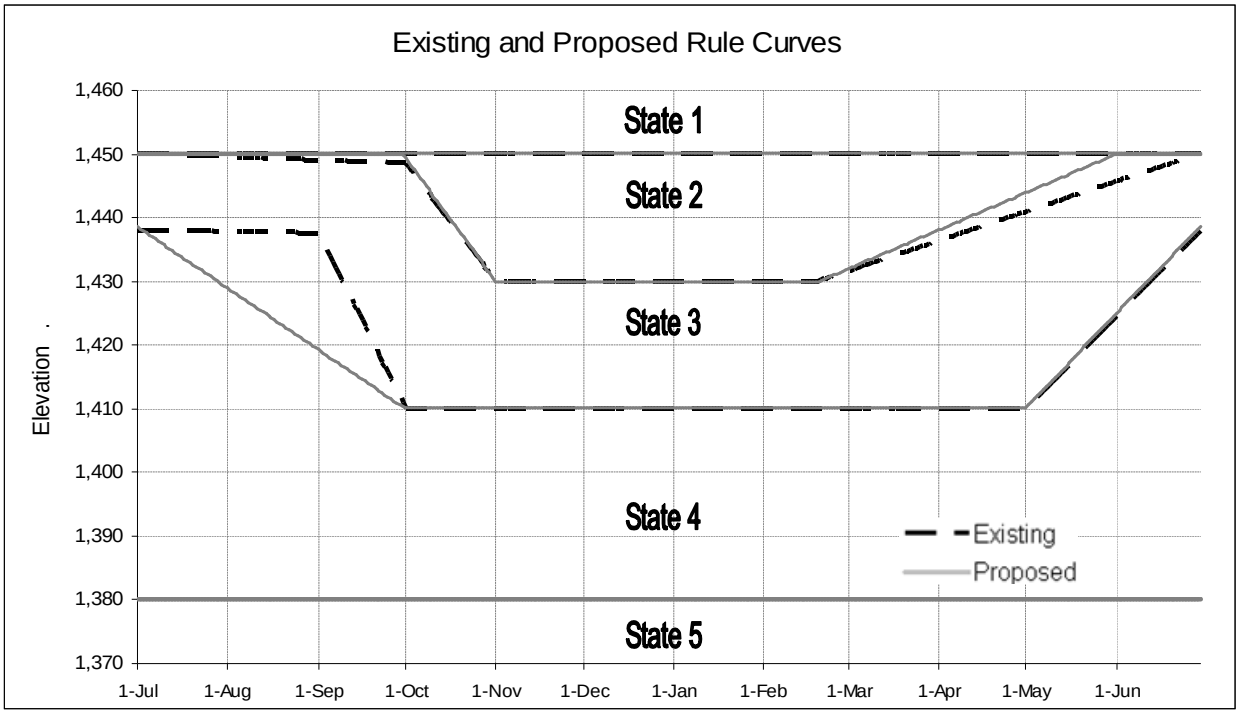

Figure 2. Jackson Project Existing and Proposed Rule Curves

19. To protect and enhance aquatic resources, the current license requires the District to provide minimum instream flow releases in three distinct operational reaches of the Sultan River.[15] A 20-cfs minimum flow release is required year-round in reach 3, which extends 6.8 miles from Culmback dam to the Sultan River diversion dam (RM 16.5 to RM 9.7). A minimum flow release ranging from 95 to 175 cfs is required year-round in reach 2, which extends 5.4 miles from the Sultan River diversion dam to the project powerhouse (RM 9.7 to RM 4.3). A minimum flow release ranging from 165 to 200 cfs is required year-round in reach 1, which extends 4.3 miles from the powerhouse to the Sultan River confluence with the Skykomish River (RM 4.3 to RM 0.0).

20. The District is also required to limit project-related flow changes in the Sultan River below the powerhouse; down-ramping rates range from 1 to 4 inches per hour depending on the season and time of day.[16] In addition, since 2005, the District has voluntarily implemented a down-ramping rate schedule of 1.5 to 6 inches per hour for

[15] See *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 76 FERC ¶ 62,006 (1991).

[16] See *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 57 FERC ¶ 62,006 (1991).

releases from the Sultan River diversion dam into the Sultan River, depending on season and time of day.

F. Proposed Project Operation and Environmental Measures

21. The District proposes to operate the project consistent with the terms of the settlement agreement. The settlement agreement establishes operational requirements, as well as protection, mitigation, and enhancement measures. Appendix 1 to the settlement agreement contains 23 proposed license articles that the parties request the Commission include in the license without material modification. The proposed requirements of each license article are summarized below in the order that they are presented in the settlement agreement.[17]

22. Aquatic license article 1 (A-LA 1) would require the District to establish and convene an Aquatic Resource Committee to assist in implementation of the aquatic resources license articles. [18]

23. Aquatic license article 2 (A-LA 2) would require the District to develop and implement a Marsh Creek Slide Monitoring and Modification Plan with provisions for: conducting a baseline physical survey of the fish passage barrier created by the 2004 Marsh Creek rockslide that occurred at RM 7.6 within reach 2 of the project's bypassed reach, modify the barrier to enhance upstream anadromous fish passage, monitor fish passage through the slide area, and implemen further modifications to the slide area to facilitate fish passage subject to the availability of funds in a habitat enhancement account.[19]

24. Aquatic license article 3 (A-LA 3) would require the District to develop and implement a Water Temperature Conditioning Plan, which includes provisions for implementing a two-phase program to improve water temperature for salmonids and

[17] The proposed license articles are mandatory through FPA sections 4(e) and 18 conditions and Ecology's water quality certification and are included as Appendix G for reference.

[18] The Aquatic Resource Committee is composed of members from the District, NMFS, Forest Service, FWS, Washington DFW, Washington Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater. The purpose of the committee is to advise the District on fisheries and habitat.

[19] The District filed the Marsh Creek Slide Modification and Monitoring Plan on February 23, 2010.

other aquatic resources in reach 3 of the project bypassed reach.[20] Phase one would be implemented from license issuance until the earlier of (a) two years after the date the District completes the Sultan River diversion dam's volitional fish passage modifications, described in A-LA 13 below, or (b) January 1, 2020. Phase one would require temperature sensor and valve modifications at some of the existing flow release facilities at the base of Culmback dam to provide for a release of up to 70 cfs to meet new temperature conditioning performance standards for April through October when the reservoir is stratified. Phase two would occur no later than January 1, 2020, and would require construction of a new floating intake structure in the reservoir to combine with the existing piping infrastructure at Culmback dam to release up to 165 cfs to meet new temperature conditioning performance standards.

25. Aquatic license article 4 (A-LA 4) would require the District to periodically release flows to provide 12 viable whitewater boating events[21] every three years according to the provisions of its Whitewater Recreation Plan.[22]

26. Aquatic license article 5 (A-LA 5) would require the District to implement down-ramping rates ranging from between 1 and 6 inches per hour depending on the time of year, monitor ramping rates at 15-minute intervals, install a flow continuation system on the project's Pelton turbines, implement a flow discharge ceiling to protect Chinook salmon spawning redds during the peak spawning season, evaluate whether more-restrictive ramping rates are necessary to protect juvenile salmonids in enhanced side channels, and notify the Commission and Aquatic Resource Committee in the event of deviations from the ramping rate requirements.

27. Aquatic license article 6 (A-LA 6) would require the District to develop and

[20] The District filed the Water Temperature Conditioning Plan on July 16, 2010.

[21] Viable events may be either scheduled or unscheduled and are defined as follows. A viable scheduled event is a minimum of two events each year that are scheduled at least two weeks in advance and occur on weekends, with one occurring in September and one in April or May at flows between 600 and 2,000 cfs and occur at least 3 hours. A viable unscheduled event is defined as a calendar day (a) occurring between March 15 and November 30 or at times agreed to between the District and American Whitewater after consultation with the Aquatic Resource Committee, (b) with controlled and uncontrolled releases (i.e., spill) and accretion flows between 600 and 2,000 cfs for at least three hours, (c) during a time of day that supports whitewater boating and at conditions that allow access to the river reach, and (d) with at least 48 hours notice to boaters.

[22] The District filed the Whitewater Recreation Plan on June 17, 2010.

implement a Large Woody Debris Plan to facilitate installation and monitoring of large woody debris habitat enhancement measures in the Sultan River downstream of Culmback dam.

28. Aquatic license article 7 (A-LA 7) would require the District to develop and implement a Side Channel Enhancement Plan with provisions for enhancing a minimum of 10,000 linear feet of side channel habitat in the lower Sultan River to provide a minimum of 3 acres of additional rearing habitat for anadromous salmonids.

29. Aquatic license article 8 (A-LA 8) would require the District to enhance the ecological function of the Sultan River by implementing a Process Flow Plan[23] to provide for channel maintenance, channel forming and flushing flows, and upstream and downstream fish migration flow releases.

30. Aquatic license article 9 (A-LA 9) would require the District to implement an enhanced minimum instream flow schedule in all three affected reaches of the Sultan River. The new instream flow regime would include a variable monthly flow-release schedule in reach 3 allowing for up to 20,362 acre-feet to be released on an annual basis until year 2020, and up to 23,831 acre-feet to be released on an annual basis thereafter. Minimum flow releases in reach 2 would be enhanced to range between 100 and 200 cfs depending on the time of year. Minimum flow releases in reach 1 would be increased to 300 cfs year-round. A-LA 9 also allows for reduced minimum instream flow releases in the event of a drought.

31. Aquatic license article 10 (A-LA 10) would require the District to develop and implement a Spada Lake Recreational Fishery Plan that provides for: removing barriers to fish passage within tributaries along South Shore Road; conducting gill net sampling in Spada Lake; attempting to maintain Spada Lake elevations at or above approximately 1,430 feet from July 1 to August 15 for boating and fishing, subject to meeting city of Everett water demands and the District's other license obligations; improving the South Fork Recreation Site boat launch; and preparing a recreational fishing brochure for Spada Lake.[24]

32. Aquatic license article 12 (A-LA 12)[25] would require the District to develop and

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[23] The District filed the Process Flow Plan on September 27, 2010.

[24] The District filed the Spada Lake Recreational Fishery Plan on July 16, 2010.

[25] Aquatic license article 11 was intentionally omitted from the settlement agreement.

implement a comprehensive Fish Habitat Enhancement Plan[26] that provides for the establishment of a habitat enhancement fund[27] to implement future habitat enhancement measures in the Sultan and Snohomish River basins, sets forth requirements for use of the funds, and includes an implementation schedule and reporting requirements. Aquatic license article 13 (A-LA 13) would require the District to provide volitional upstream and downstream fish passage at the Sultan River diversion dam if spawning escapement within the diversion dam index area[28] reaches certain criteria.[29]Aquatic license articles 14 and 15 (A-LA 14 and 15)[30] would require the District to operate the project consistent

[26] The District filed the Fish Habitat Enhancement Plan on November 19, 2010.

[27] The District would deposit $2.5 million into an interest-bearing account within 30 days of license issuance. Starting the tenth anniversary after issuance of the license and annually for the term of the license, the District would deposit $200,000 into the account.

[28] The diversion dam index area is defined as the area of the Sultan River immediately downstream of the Sultan River diversion dam between river mile 9.7 and river mile 9.2.

[29] The District and Washington DFW conduct annual spawning surveys in four index areas between RM 0.0 and RM 9.7 on the Sultan River: mainstem (RM 0-2.7), Chaplain (RM 4.5 to 5.2), Gold Camp (RM 7 to 7.3), and the diversion dam (RM 9.2 to 9.7). If spawning escapement of either Chinook salmon or steelhead trout within the diversion dam index area (RM 9.2 to 9.7) equals or exceeds in any one year ten percent of the combined total spawning escapement for either species within the four index areas (including the diversion index area and the three downstream index areas), then the District would construct, maintain, and operate upstream and downstream volitional fish passage at the diversion dam. The escapement criteria is referred to as the "fish passage trigger".

[30] On April 26, 2011, the District filed an amendment to the relicensing settlement agreement, on behalf of the settlement agreement signatories, withdrawing proposed aquatic license article 16 (A-LA 16), which would have required the District to annually reimburse Washington DFW for its costs associated with the annual planting of roughly 30,000 steelhead smolts in the Sultan River until upstream volitional fish passage is provided at the diversion dam. The District and Washington DFW reached an off-license agreement to implement a steelhead stocking program in the Snohomish River Basin in its place. The amendment was necessitated by a change in Washington DFW's hatchery policies to reduce threats of hatchery-origin steelhead on wild populations by preventing stocking in streams where Washington DFW cannot trap returning adults, like the Sultan River.

with the proposed revised Spada Lake reservoir rule curves (see figure above) and develop an Adaptive Management Plan with provisions and methods for evaluating and resolving conflicting water demands. The District's proposed modifications to the operational rule curves (proposed license article A-LA 14) are intended to provide the District greater flexibility in meeting the various demands on available water. The proposed changes alter operation priorities and reservoir elevation targets for State 3 between July 1 and October 1, clarifies operations in States 2 and 4 to allow the District to release less than 1,300 cfs if inflow forecasting shows that there is minimal risk of spill, and adds a State 5 that defines the District's existing practice of ceasing withdrawing water through the powerhouse when Spada Lake is below 1,380 feet.[31] In regard to the State 3 modifications, instead of maintaining a minimum impoundment elevation of 1,440 feet between July and early September for promoting summer recreation access, under the District's modified rule curve for State 3, the District would attempt to maintain a minimum impoundment elevation above 1,430 feet between July 1 and August 15 and target a minimum impoundment elevation at or above 1,420 feet from August 16 to September 15. After the temperature conditioning structure is installed, the District would attempt to maintain a minimum impoundment elevation above 1,415 feet from August 16 to September 15. The minimum impoundment elevation targets could be temporarily modified if required by operating emergencies beyond the control of the District.

33. Aquatic license article 17 (A-LA 17) would require the District to develop and implement a Fisheries and Habitat Monitoring Plan that provides for a comprehensive monitoring program to guide implementation of other settlement agreement aquatic enhancement measures.[32]

34. Aquatic license article 18 (A-LA 18) would require the District to operate the project so that the City of Everett's water supply and water quality requirements shall have precedence over power generation.

35. Five license articles would require the District to implement its Historic Properties

[31] To avoid vortex stresses in the power tunnel, diversion of water into the power tunnel ceases if the reservoir elevation drops to 1,380 feet or lower. In this situation, instream flow and water supply requirements at Culmback dam, the diversion dam, and the powerhouse would be met by releasing water from the exit valves at the base of Culmback dam.

[32] The District filed the Fisheries and Habitat Monitoring Plan on September 2, 2010.

Management Plan (HPMP) (C-LA 1),[33] Recreation Resources Management Plan (R-LA 1),[34] Terrestrial Resources Management Plan (T-LA 1),[35] Noxious Weed Management Plan (T-LA 2),[36]) and Marbled Murrelet Habitat Protection Plan (T-LA 3).[37]

36. Water Quality license article 1 (W-LA 1) would require the District to develop and implement a Water Quality Protection Plan that includes provisions for: water quality protection measures for construction or maintenance activities; spill prevention and containment procedures; procedures for application of herbicides, pesticides, fungicides, and disinfectants; compliance monitoring and reporting procedures; water quality sampling parameters; a map of sampling locations; and procedures for quality control.

G. Proposed Project Boundary Modifications

37. The District proposes to bring into the project boundary all existing and proposed recreation sites on Spada Lake not currently within the project boundary, including the South Fork, South Shore, Nighthawk, Bear Creek, North Shore, and Olney Pass recreation sites. The District would also bring into the project boundary the Trout Farm Road River Access Area; and the lands currently managed for wildlife habitat associated with the Spada Lake, Lost Lake, and Williamson tracts.[38] The District does not propose to bring into the project boundary the Sultan River Canyon Trail that would be constructed from the boundary between the national forest and District-owned lands along Forest Road 6122 to the Sultan River, or the remaining five existing river access areas. With these modifications, the new project boundary would encompass 4,570.8 acres, of which 10.9 acres are within the national forest, and 3,466.7 acres[39] were

[33] The District filed the HPMP as Appendix 6 to the settlement agreement.

[34] The District filed the Recreation Resources Management Plan as Appendix 5 to the settlement agreement.

[35] The District filed the Terrestrial Resource Management Plan with the license application on June 1, 2009, as Appendix E to the license application.

[36] The District filed the Noxious Weed Plan with the license application on June 1, 2009, as Appendix D to the license application.

[37] The District filed a revised Marbled Murrelet Protection Plan to incorporate the terms and conditions of the FWS's biological opinion on April 14, 2011.

[38] See EA, table 33 at 195-196.

[39] Of the 2,284.8 acres being added to the project boundary, 1,538.6 acres were former Forest Service lands adjacent to Spada Lake that were transferred to the District in

(continued)

formerly within the national forest and thus subject to section 24 of the FPA.[40]

SUMMARY OF LICENSE REQUIREMENTS

38. In the EA, staff recommended most of the proposed license requirements of the settlement agreement, with the exception of target lake elevations for the summer recreation season, and implementation of the Fish Habitat Enhancement Plan that establishes the $2.5 million habitat enhancement fund. Staff also recommended measures to improve the administration and compliance of the license

39. Based on staff's recommendations, this license, as summarized below, authorizes 111.8 MW of renewable energy, requires the District's proposed measures to protect and enhance water quality, fish, wildlife, recreation, and cultural resources at the project. This license also considers municipal water supply needs, and requires staff's recommended measures to improve the administration and compliance of the license.

A. Aquatic Resource Measures

40. To protect fish and aquatic resources in the Sultan River and Spada Lake, the license requires the District to: improve water temperature conditions in the bypassed reach downstream of Culmback dam to benefit salmonids; modify the Marsh Creek rockslide to improve upstream fish passage in the project bypassed reach; construct fishways at the Sultan River diversion dam to provide access to an additional 6.4 miles of aquatic habitat for anadromous fish species, including ESA-listed Chinook salmon and steelhead trout, if the fish passage trigger is met; provide a combination of higher minimum flows and channel forming, channel maintenance, and flushing flows to enhance aquatic habitat in the Sultan River from Culmback dam to its confluence with the Skykomish River; institute a spawning flow-ceiling of 550 cfs in the lower Sultan River during the September 15 to October 15 period of peak spawning for Chinook salmon, to ensure that redds remain wetted during this critical period; provide flow continuation at the project's Pelton turbines and implement ramping rates to reduce the potential for fish stranding; implement side-channel and large woody debris enhancement projects that will increase connectivity with the mainstem and increase structure in the mainstem and side channels to enhance salmonid spawning and rearing habitat in the lower 3 miles of the Sultan River; conduct a fisheries and habitat monitoring program to

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the 1991 land exchange, but never brought into the project boundary. The total acreage subject to section 24 of the FPA is now 3,466.7 (1,928.1 existing acres plus 1,538.6 acres).

[40] The exhibit G maps filed on August 13, 2009, identify the lands that are subject to the Section 24 reservation.

guide implementation of enhancement measures; monitor and protect water quality throughout the project area; and enhance the recreational fishery in Spada Lake.

41. To improve Commission administration and oversight of the license, this license also requires the District to: maintain (as opposed to attempt to maintain) specific reservoir levels during State 3, subject to other environmental requirements of the license, in order to enhance recreational use of Spada Lake; develop an Operation Plan to define management and operational procedures that will be followed to meet targeted lake levels; develop and implement an Operational Compliance Monitoring Plan; and file reports detailing implementation and completion of salmon spawning protective measures, side channel enhancements, and Marsh Creek slide modifications.

B. Terrestrial Resource Measures

42. To protect and enhance terrestrial resources, this license requires the District to: implement its Terrestrial Resources Management Plan, which emphasizes preserving and enhancing old-growth and late-succession habitats -- habitat important to the recovery of the federally listed northern spotted owl and marbled murrelet; implement its Noxious Weed Management Plan, which will control noxious weeds on project lands; and implement its Marbled Murrelet Habitat Protection Plan, which will further protect occupied marbled murrelet habitat during activities implemented under this license (e.g., trail construction, habitat management activities, etc.). This license also requires the 4,456 acres of District-owned lands managed under the plan to be brought into the project boundary.

C. Recreation Measures

43. To improve recreation opportunities at the project, the license requires the District to: implement its Recreation Resource Management Plan with additional reporting requirements that will provide for continued operation and maintenance of existing recreation sites, enhancement of these sites, and the addition of a new recreation site and access trails to the Sultan River below Culmback dam; implement its Whitewater Recreation Plan with additional reporting requirements that will provide up to 12 whitewater releases during each 3-year period of the license, and provide for evaluation of the releases and environmental issues that may be associated with whitewater events; and implement its Spada Lake Recreational Fishery Plan, except that we require the District to maintain proposed summer Spada Lake levels rather than “attempt to” maintain proposed summer lake levels.

D. Cultural Resource Measures

44. To protect and enhance cultural resources, the license requires the District to: implement its HPMP which will ensure that any adverse effects on historic properties as a result of project operation, maintenance, recreational, or other activities are addressed

over the term of the new license and ensure protection of cultural resources within the project boundary.

WATER QUALITY CERTIFICATION

45. Under section 401(a)(1) of the Clean Water Act (CWA),[41] the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.[42]

46. On October 14, 2009, the District applied to Ecology for water quality certification for the Jackson Project, which Ecology received on October 20, 2009. On October 18, 2010, Ecology timely issued certification for the Jackson Project that includes conditions which are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph D.

47. The certification includes requirements for developing a Water Quality Monitoring Plan to ensure compliance with state criteria for turbidity, total dissolved gas, temperature, dissolved oxygen, pH, and fecal coliform bacteria. In addition, the certification includes requirements for the District to notify Ecology and implement corrective actions if project operations or activities result in: instances of non-compliance with the terms of the certification; dying or dead fish; or discharge of oil, fuel, or chemicals into state waters or lands adjacent to state waters. The certification also includes requirements for contaminant spill control, chemical application control, monitoring and reporting, and developing and implementing plans for protecting water quality during construction and habitat modification projects. The certification incorporates by reference proposed license articles A-LA 2 through A-LA 9, A-LA 12 through A-LA 15, and A-LA 17. Article 401 requires the licensee to file, for Commission approval, the plans required by the certification conditions.

48. As discussed in the final EA,[43] staff did not recommend in whole, or in part, three settlement agreement articles because the articles approve as-yet unidentified and uncertain future measures, or the measures are not tied to project effects or project

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[41] 33 U.S.C. § 1341(a)(1) (2006).

[42] 33 U.S.C. § 1341(d) (2006).

[43] See EA at 228-231.

purposes.[44] These articles would: (1) potentially implement additional as-yet unidentified modifications to the Marsh Creek rockslide fish passage barrier subject to the availability of funds in the fish habitat enhancement fund (A-LA 2), (2) implement potential as-yet unidentified measures at unspecified locations in the Sultan or Skykomish River basins if the objectives of a side channel enhancement plan cannot be achieved (A-LA 7), and (3) develop a fish habitat enhancement fund (A-LA 12). I agree with staff's findings. However, these three articles are required by the certification, and therefore are made part of the license.[45]

49. A number of plans required by the certification conditions have been completed and filed for Commission approval. Staff also recommended measures to improve Commission administration of the certification conditions required by the license. I discuss these plans and staff-recommended modifications in "Section 10(a)(1) of the Federal Power Act (FPA)"

COASTAL ZONE MANAGEMENT ACT

50. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[46] the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of receipt of the applicant's certification.

51. On September 14, 2010, the District submitted, and Ecology received, a consistency certificate. By letter dated January 18, 2011, Ecology issued the District a determination of consistency with the Washington Coastal Management Program that includes no stipulations.

SECTION 4(e) FINDINGS AND CONDITIONS

52. Section 4(e) of the FPA[47] provides that the Commission can issue a license for a project located within any reservation only if it finds that the license will not interfere or

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[44] See *Settlements in Hydropower Licensing Proceedings Under Part I of the Federal Power Act*, 116 FERC ¶ 61,270 (2006).

[45] Proposed license article AL-2 and AL-12 are also required by the Forest Service section 4(e) condition 2 in Appendix B.

[46] 16 U.S.C. § 1456(3)(A) (2006).

[47] 16 U.S.C. § 797(e) (2006).

be inconsistent with the purposes for which the reservation was created or acquired.

53. I have reviewed the Organic Administration Act of 1897[48] which established the purposes for forest reservation, and the presidential proclamation that created the Mt. Baker-Snoqualmie National Forest.[49] There is no evidence or allegation in this proceeding to indicate that relicensing the Jackson Project would interfere with the purposes of the Mt. Baker-Snoqualmie National Forest within which the project is located. Therefore, I find that this license, as conditioned, will not interfere or be inconsistent with the purposes for which the Mt. Baker-Snoqualmie National Forest was created.

54. FPA section 4(e) further requires that Commission licenses for projects located within federal reservations include all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation. A portion of the Jackson Project is located in the Mt. Baker-Snoqualmie National Forest, which is under the Forest Service's supervision.

55. On October 19, 2009, the Forest Service filed its preliminary section 4(e) conditions. The Forest Service, by letter filed on July 26, 2010, stated that it did not anticipate a need to modify its preliminary 4(e) conditions. Therefore, the conditions filed on October 19, 2009, are considered to be final. The terms and conditions are set forth in Appendix B of this order and incorporated into this license by Ordering Paragraph E and summarized below:

56. Condition 1 reserves the Forest Service's right to modify its conditions in the event the settlement agreement is materially modified or not accepted by the Commission; requires the District to obtain a Forest Service special-use authorization for any long-term use of National Forest System lands not in the project boundary; requires Forest Service approval on project changes; and requires avoidance and replacement of disturbed public land survey monuments, private property corners, and forestry boundaries.

57. Condition 2 requires the District to implement the following proposed settlement

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[48] 16 U.S.C. § 475 *et seq.* (2006).

[49] The Mt. Baker-Snoqualmie National Forest was created as the Washington Forest Reserve by Presidential Proclamation 27 on February 22, 1897 (29 Stat. 904). At that time, the Organic Administration Act of 1897, 16 U.S.C. § 475 (2006), stipulated that all national forest lands were established and administered only for watershed protection and timber production.

agreement license articles: A-LA 1, A-LA 3, A-LA 4, A-LA 6, A-LA 8, A-LA 9, A-LA 12, A-LA 15, A-LA 17, C-LA 1, R-LA 1, T-LA 1, T-LA 2, and T-LA 3. Condition 2 includes the requirement for the District to implement the Recreation Resources Management Plan (R-LA 1) and the Marbled Murrelet Habitat Protection Plan (T-LA 1) filed with the settlement agreement. Since issuance of the Forest Service's final terms and conditions, the District has filed for Commission approval a revised Recreation Resources Management Plan (R-LA 1) and a revised Marbled Murrelet Habitat Protection Plan (T-LA 3) that were developed in consultation with the settlement parties and are supported by the settlement parties, including the Forest Service. Therefore, I assume that the Forest Service intends for the District to implement the revised plans. Staff did not recommend proposed article A-LA 12 (establishing the fish habitat enhancement fund), as previously discussed as a condition of the water quality certification; however it is also required by the Forest Service 4 (e) conditions, and therefore made part of this license.

58. Condition 3 requires the District to consult with the Forest Service if project activities affect other federally authorized uses of National Forest System lands, and to prepare site-specific plans prior to habitat- or ground-disturbing activities on National Forest System lands.

59. Condition 3 also includes a reimbursement schedule for the Forest Service to recover its administrative costs associated with implementing the license directly from the District over the license term. However, sections 10(e)(1) of the FPA provides that the Commission will fix annual charges to reimburse the United States for the costs of administering Part I of the FPA, including costs incurred by other federal agencies. Section 17 of the FPA specifically provides that "the proceeds of charges made by the Commission for the purpose of reimbursing the United States for the costs of administration of this Part shall be paid into the Treasury of the United States and credited to miscellaneous receipts." Because the reimbursement plan proposed by the Forest Service contemplates the Forest Service setting and directly receiving annual charges, it is contrary to the express terms of the FPA and therefore will not be included in the license.

SECTION 18 FISHWAY PRESCRIPTIONS

60. Section 18 of the FPA[50] provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Secretary of Interior, as appropriate.

61. On October 16, 2009, and November 4, 2009, Commerce and Interior,

[50] 16 U.S.C. § 811 (2006).

respectively, filed fishway prescriptions for the Jackson Project with their records of decision. Both agencies' prescriptions are consistent with settlement agreement aquatic license article A-LA 13 and require upstream and downstream volitional fish passage at the Sultan River diversion dam if the fish passage trigger is met. Commerce's prescription is set forth in Appendix C to this order and is incorporated into this license by Ordering Paragraph F. Interior's prescription is set forth in Appendix D to this order and is incorporated into this license by Ordering Paragraph G.

62. In their filings, both agencies also requested that the Commission reserve authority to prescribe fishways. Consistent with Commission policy, Article 408 of this license reserves the Commission's authority to require fishways that may be prescribed by Commerce or Interior for the Jackson Project.

ESSENTIAL FISH HABITAT

63. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act[51] requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) identified under the Act. Under section 305(b)(4)(A) of the Magnuson Stevens Act, NMFS is required to provide EFH Conservation Recommendations for actions that would adversely affect EFH.[52] Under section 305(b)(4)(B) of the Act,[53] an agency must, within 30 days after receiving recommended conservation measures from NMFS or a Regional Fishery Management Council, describe the measures proposed by the agency for avoiding, mitigating, or offsetting the effects of the agency's activity on the EFH.[54]

64. Essential Fish Habitat is designated for coho, Chinook, and Puget Sound pink salmon in the Sultan River within the project area. By letter dated May 6, 2010, Commission staff informed NMFS of staff's conclusion that licensing the project, with staff's recommended measures and agency mandatory conditions, would adversely affect EFH. With the same letter, Commission staff initiated EFH consultation with NMFS.

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[51] 16 U.S.C. § 1855(b)(2) (2006).

[52] 16 U.S.C. § 1855(b)(4)(A) (2006).

[53] 16 U.S.C. § 1855(b)(4)(B) (2006).

[54] The measures recommended by the Secretary of Commerce are advisory, not prescriptive. However, if the federal agency does not agree with the recommendations of the Secretary of Commerce, the agency must explain its reasons for not following the recommendations.

NMFS included an analysis of the project's effects on coho, Chinook, and Puget Sound pink salmon EFH in its February 9, 2011, biological opinion for the project. NMFS concluded that the project would adversely affect EFH, but also concluded that the terms and conditions of the biological opinion incidental take statement would address the adverse effects. Consequently, NMFS recommended that the terms and conditions be adopted as EFH Conservation Recommendations.

65. As discussed below, this license includes all of the terms and conditions contained in NMFS' biological opinion incidental take statement.

THREATENED AND ENDANGERED SPECIES

66. Section 7(a)(2) of the Endangered Species Act of 1973[55] requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

67. Eight federally listed threatened and endangered species may occur in the project vicinity: Puget Sound Chinook salmon, Puget Sound steelhead trout, Coastal-Puget Sound bull trout, marbled murrelet, northern spotted owl, grizzly bear, gray wolf, and Canada lynx. Critical habitat is designated in the Sultan River within the project area for Puget Sound Chinook salmon and Coastal-Puget Sound bull trout. In addition, one federally listed endangered species, the southern resident killer whale, and its designated critical habitat do not occur in the project vicinity but may be indirectly affected by the project.[56]

A. FWS

68. In the draft EA,[57] Commission staff concluded that continued operation of the project as recommended by staff would be likely to adversely affect bull trout and marbled murrelet, would not be likely to adversely affect the northern spotted owl, grizzly bear, gray wolf, and bull trout critical habitat, and would not affect the Canada lynx. By letter dated May 6, 2010, staff requested that the FWS initiate formal consultation based on the analysis contained in the draft EA. By letter to the Commission

[55] 16 U.S.C § 1536(a) (2006).

[56] Chinook salmon are an important prey species for southern resident killer whales. The project directly affects the quantity of naturally produced Chinook salmon in the Sultan River basin that become available as prey for killer whales in coastal waters.

[57] See draft EA at 7-8.

dated June 18, 2010, the FWS stated, without elaboration, that the draft EA did not contain sufficient information to initiate formal consultation and proposed to work with the District to develop a biological assessment for the purposes of section 7 consultation. On August 2, 2010, the District filed a draft biological assessment with the Commission. On August 13, 2010, Commission staff forwarded the draft biological assessment, as additional support to the draft EA, to FWS[58] and again requested that the FWS initiate formal consultation. By letter dated September 7, 2010, the FWS notified the Commission it had initiated formal consultation as of August 13, 2010.

69. On February 23, 2011, FWS filed a biological opinion with its determination that the project is not likely to jeopardize the continued existence of bull trout and marbled murrelet and would not destroy or adversely modify designated bull trout critical habitat. The FWS also concurred with staff's determination that the project would not adversely affect the northern spotted owl, gray wolf, and grizzly bear. FWS's biological opinion includes an incidental take statement with three reasonable and prudent measures to minimize take of bull trout and marbled murrelet along with six terms and conditions to implement the measures. The FWS also included five discretionary conservation recommendations to further the conservation and protection of bull trout and marbled murrelet.

1. Incidental Take Terms and Conditions

70. To minimize the likelihood of bull trout injury and mortality associated with Marsh Creek slide modifications (reasonable and prudent measure 1), the incidental take terms and conditions stipulate that the District seine and block net the pool below the Marsh Creek slide to remove fish that are present and then prevent fish from entering the pool during any blasting that is deemed harmful to fish. Article 402 modifies the Marsh Creek Slide Monitoring and Modification Plan filed on February 23, 2010, to include this requirement. Article 402 approves the Marsh Creek Slide Monitoring and Modification Plan, and requires the District to implement the modified plan.

71. To minimize the extent and likelihood of effects to marbled murrelets from noise disturbance associated with the Marsh Creek slide modifications and recreational improvements (reasonable and prudent measure 2) and habitat modification associated with the construction of the new recreation site near Culmback dam and the Sultan River Canyon trail and the removal of hazardous trees (reasonable and prudent measure 3), the incidental take terms and conditions stipulate that the District must: (1) prohibit

[58] Staff modified the no effect determination for grizzly bear and gray wolf in the biological assessment to a not likely to adversely affect determination and again requested the FWS's concurrence with staff's determination.

helicopters within 0.5 mile of suitable murrelet habitat during the nesting season; (2) use the Forest Service manual (2008), "Field Guide for Danger Tree Removal Identification and Response" as additional guidance to the Marbled Murrelet Habitat Protection Plan when identifying and removing trees in and adjacent to murrelet habitat; (3) if suitable nesting trees are to be felled during the nesting season, remove them as early or as late in the nesting season as possible; (4) contact the FWS to discuss potential options to reduce effects on murrelets prior to the removal of potential nest trees in suitable habitat during the nesting season; and (5) update the Marbled Murrelet Habitat Protection Plan to reflect new information in the biological opinion. The terms and conditions are included in Appendix F and are made part of this license by Ordering Paragraph I.

72. On April 14, 2011, the District filed a revised Marbled Murrelet Habitat Protection Plan, dated March 2011, which incorporates the FWS' terms and conditions. According to the District's filing, the FWS has reviewed these revisions and concurs that the updated plan is consistent with the requirements of the incidental take statement. The revised plan was also reviewed by the settlement parties, including the Forest Service and no one objected to the revisions. In the final EA, staff recommended implementing the March 2009 version of the plan. The revisions in the March 2011 plan are minor and would further minimize the potential effects on marbled murrelets; hence, Article 411 approves the revised plan and requires the District to implement the plan with modifications to include certain conservation recommendations discussed next.

2. Conservation Recommendations

73. The FWS also included the following discretionary conservation recommendations to further the conservation and protection of bull trout and marbled murrelets: (1) coordination with the FWS should be conducted during the development and implementation of all plans to further minimize adverse effects on bull trout and murrelets in the action area; (2) the Marbled Murrelet Habitat Protection Plan should be updated every 10 years in coordination with the FWS to reflect new information; (3) no activities generating noise above ambient levels should be conducted within 0.25 mile (1 mile for blasting and 0.5 mile for helicopters) of suitable murrelet nesting habitat from April 1 to September 22; (4) surveys for murrelets in all suitable habitat in the action area should be conducted; and (5) survey results and field notes of monitoring efforts for listed species should be documented and sent to the FWS on an annual basis.

74. The District does not object to the inclusion of conservation recommendations 1 and 2 in the new license; however, it believes recommendations 3 and 4 would impose significant additional obligations on the project and may have material impacts on project operations. Specifically, the District asserts that conservation recommendation 3, as currently drafted, would impede its ability to effectively manage project facilities (including project roads) and prevent the use of helicopters between April 1 and September 22. Such management activities may include helicopter surveys of spawning

escapement to document fish passage effectiveness at the Marsh Creek rockslide and to identify when the passage trigger is met to initiate the installation of fish passage at the Sultan River diversion dam. Helicopters are also used to conduct snow surveys which provide a predictable means to document hydrologic conditions in the Sultan River watershed. To minimize these impacts, the District requests that if the Commission elects to adopt the FWS conservation recommendation 3, it be revised to read as follows: "To the extent feasible, conduct no activities generating noise above ambient levels within 0.25 mile (1 mile for blasting and 0.5 mile for helicopters) of occupied or unsurveyed suitable murrelet nesting habitat from April 1 to September 22." According to the District, conservation recommendation 4, as currently drafted, would require it to survey all suitable habitats within the FWS biological opinion's defined action area, [59] which includes the Sultan River from Culmback Dam downstream to the Skykomish River and National Forest System lands in the upper Sultan River Canyon—lands outside of the proposed project boundary and not affected by the project. Further, according to the District, conservation recommendation 4 is redundant in that the murrelet protection plan already includes surveying requirements pertaining to lands within the project boundary (i.e., lands managed pursuant to the Terrestrial Resource Management Plan). For these reasons, the District requests that the Commission not incorporate conservation recommendation 4 into the new license. Finally, regarding conservation recommendation 5, the District is not opposed to documenting and sending FWS survey results and field notes of monitoring efforts for marbled murrelet. However, the District believes this obligation should not be imposed on an annual basis. Instead, this reporting obligation should only be included in conjunction with preparation of reports for any year that surveys are conducted or maps are updated. The District requests that, if the Commission elects to include conservation recommendation 5 in the license, it revise the recommendation to read as follows: "the survey results and field notes of monitoring efforts for marbled murrelet should be documented and sent to FWS in conjunction with preparation of the Terrestrial Resources Management Plan annual reports for any year that surveys are conducted or maps are updated."

a. Conservation Recommendation 1

75. A license condition requiring the District to work with the FWS to develop and implement the various plans required by the license is already accommodated by the consultation requirements of this license.

b. Conservation Recommendation 2

76. The revised Marbled Murrelet Habitat Protection Plan includes a requirement to

[59] See FWS's biological opinion filed on February 23, 2011, at 13.

update existing maps of occupied habitat at intervals of 10 years or less. Updating the Marbled Murrelet Habitat Protection Plan, in consultation with the FWS at 10-year intervals would not be costly and the new data may warrant revising the plan. Therefore, Article 411 requires the District to file an updated plan for Commission approval within 10 years of the issuance of the license and every 10 years thereafter.

c. Conservation Recommendation 3

77. I am not including Conservation recommendation 3, as proposed by the FWS, because such a requirement could conflict with other requirements of this license, such as the installation of large woody debris (A-LA 6), implementation of side channel enhancement projects (A-LA 7), and monitoring of salmon escapement (A-LA 2). Further, the revised Marbled Murrelet Habitat Protection Plan includes measures that prohibit the use of helicopters within 0.5 mile of occupied habitat and specific activities most likely associated with project operations that may adversely affect marbled murrelets[60] within threshold distances consistent with those defined by the FWS. Finally, consultation requirements included in the plan would permit the FWS and the District to identify unanticipated actions that might result in harm to marbled murrelets and any necessary measures to address those actions.

78. d. Conservation Recommendations 4 and 5

79. For the reasons cited above by the District, I am also not requiring FWS's conservation measure 4. However, Article 411 revises the March 2011 version of the plan to include the reporting requirement contained in conservation recommendation 5 as proposed by the District

B. NMFS

80. In the draft EA, Commission staff concluded that continued operation of the project as recommended by staff would be likely to adversely affect Puget Sound Chinook salmon, Puget Sound steelhead trout, and designated critical habitat for Puget Sound Chinook salmon.[61] By letter dated May 6, 2010, staff requested that NMFS initiate formal consultation based on the analysis contained in the draft EA.

81. As noted above, on August 2, 2010, the District filed a draft biological assessment

[60] These activities include removing hazardous trees, implementing wildlife habitat management actions, and constructing and maintaining recreational trails and associated facilities

[61] NMFS has not designated critical habitat for Puget Sound steelhead trout.

with the Commission. According to information contained in the draft biological assessment, during a June 16, 2010, conference call, NMFS requested that the District provide a biological assessment containing an analysis of the project's effects on the southern resident killer whale in addition to the species identified in the draft EA.[62] By letter dated August 13, 2010, Commission staff forwarded the draft biological assessment to NMFS as supplemental information and requested concurrence with staff's determinations that the project would not likely adversely affect the Southern Resident killer whale or its designated critical habitat. The letter also indicated that the Commission's May 6, 2010, request for formal consultation with respect to Puget Sound Chinook salmon and Puget Sound steelhead trout was still in effect.

82. On February 9, 2011, NMFS filed a biological opinion with its determinations that the project is not likely to jeopardize the continued existence of Puget Sound Chinook salmon or Puget Sound steelhead trout, or adversely modify or destroy critical habitat for Puget Sound Chinook salmon. NMFS also concurred with Commission staff's determinations that the project would not likely adversely affect the southern resident killer whale or its designated critical habitat. NMFS' biological opinion includes an incidental take statement with three reasonable and prudent measures to minimize take of listed Puget Sound Chinook salmon and steelhead trout along with three terms and conditions to implement the measures.

83. The reasonable and prudent measures stipulate that the District: (1) minimize incidental take from project operations by following all of the actions described in the proposed license articles of the settlement agreement that relate to Puget Sound Chinook salmon and Puget Sound steelhead trout, (2) minimize incidental take during monitoring of listed species when handling juvenile and/or adult anadromous fish; and (3) minimize incidental take from construction activities in or near watercourses. The terms and conditions stipulate that the District: (1) conduct a monitoring and reporting program to report all incidental take; (2) implement best management practices during construction activities; and (3) include a standard reopener clause in any license issued for the project to ensure continuing agency discretion throughout the life of the license as may be necessary to protect species listed under the ESA. These reasonable and prudent measures and conditions are included in Appendix E of this license and are made part of this license by Ordering Paragraph H. Article 15 of form L-1, the Commission's standard fish and wildlife reopener, addresses condition 3 of NMFS' incidental take statement terms and conditions.

84. NMFS' reasonable and prudent measure 1 did not specify which of the settlement agreement's proposed license articles are to be included in the license. However, based

on our review of NFMS' biological opinion, the following license conditions relate to the protection and recovery of Puget Sound Chinook salmon and steelhead trout in the Sultan River and are included in the license pursuant to FPA section 4(e), FPA section 18, or CWA section 401: A-LA 1 (establish an aquatic resource committee); A-LA 2 (Marsh Creek Slide Monitoring and Modification Plan); A-LA 3 (Water Temperature Conditioning Plan), A-LA 4 (down-ramping rate conditions), A-LA 6 (Large Woody Debris Plan) A-LA 7 (Side Channel Enhancement Plan), A-LA 8 (Process Flow Plan), A-LA 9 (minimum instream flows), A-LA 12 (Fish Habitat Enhancement Plan); A-LA 13 (upstream and downstream volitional fish passage at the Sultan River diversion dam), A-LA 17 (Fisheries and Habitat Monitoring Plan), and W-LA 1 (Water Quality Protection Plan).

NATIONAL HISTORIC PRESERVATION ACT

85. Under section 106 of the National Historic Preservation Act (NHPA),[63] and its implementing regulations,[64] federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

86. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) with the Washington SHPO on January 6, 2010, and invited the District, Forest Service, Washington DNR, City of Everett, Snohomish County, Tulalip Tribes, Snoqualmie Indian Tribe, and Stillaguamish Tribe of Indians to concur with the stipulations of the PA. The District, Washington DNR, City of Everett, and Tulalip Tribes concurred. The PA requires the licensee to implement the HPMP dated September 2008 for the term of any new license issued for this project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 414 requires the District to implement the PA and associated HPMP.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(j) OF THE FPA

87. Section 10(j)(1) of the FPA[65] requires the Commission, when issuing a license, to

[63] 16 U.S.C. § 470 et seq. (2006).

[64] 36 C.F.R. Part 800 (2011).

[65] 16 U.S.C. § 803(j)(1) (2006).

include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,[66] to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

88. In response to the August 18, 2009, public notice that the project was ready for environmental analysis, NMFS, Washington DFW, and Interior filed a total of 24 recommendations under section 10(j).[67] Eight recommendations were determined to be outside the scope of section 10(j) and are discussed in the next section. This license includes the following conditions consistent with the remaining 16 recommendations that are within the scope of section 10(j): (1) develop and implement a Marsh Creek Slide Monitoring and Modification Plan (Ordering Paragraphs D and Article 402); (2) develop and implement a Water Temperature Conditioning Plan (Ordering Paragraphs D and E and Article 415); (3) implement down-ramping rate and frequency limitations (Ordering Paragraphs D and E, and Article 405); (4) develop and implement a Large Woody Debris Management Plan (Ordering Paragraphs D and E); (5) develop and implement a Side Channel Enhancement Plan (Ordering Paragraphs D and E, and Article 404); (6) develop and implement a Process Flow Plan (Ordering Paragraphs D and E, and Article 416); (7) implement a new instream flow regime in project affected reaches (Ordering Paragraphs D and E); (8) develop and implement a Spada Lake Recreational Fishery Plan (Article 409); (9) remove fish passage barriers within tributaries to Spada Lake (Article 409); (10) conduct fish surveys in Spada Lake (Article 409); (11) provide upstream and downstream volitional fish passage at the Sultan River diversion dam if the fish passage trigger is met (Ordering Paragraph F and G); (12) operate the project consistent with the Spada Lake reservoir rule curves (Ordering Paragraph D and Article 406); (13) develop and implement a Fisheries and Habitat Monitoring Plan (Ordering Paragraphs D and E and Article 410); (14) implement the District's Terrestrial Resources Management Plan (Ordering Paragraph E); (15) implement the District's Marbled Murrelet Habitat Protection Plan (Ordering Paragraph E and Article 411); and (16) develop and implement

[66] 16 U.S.C. §§ 661 *et seq*. (2006).

[67] See NMFS filing of October 16, 2009; see Washington DFW and Interior filings of November 4, 2009, for a total of 25 recommendations. In its April 26, 2011 filing, the District, on behalf of the settlement agreement signatories, amended the settlement agreement by withdrawing aquatic license article 16 (A-LA 16) for a steelhead stocking program in the Sultan River and replacing the proposed stocking measures with an off-license agreement. By letters dated May 16, 2011, and June 3, 2011, Washington DFW and NMFS, respectively, withdrew their recommendation to implement proposed license article A-LA 16. Therefore, this license discusses a total of 24 recommendations filed under section 10(j) of the FPA

a Water Quality Protection Plan (Ordering Paragraph D).

SECTION 10(a)(1) OF THE FPA

89. Section 10(a)(1) of the FPA[68] requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

A. NMFS, Interior, and Washington DFW Recommendations

90. NMFS, Interior, and Washington DFW made eight recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, I did not consider these recommendations under section 10(j) of the FPA. Instead, I consider these recommendations under the broad public interest standard of section 10(a)(1) of the FPA. As discussed below, all eight of these recommendations are included in the license.

91. Five of the fish and wildlife agency recommendations were recommended by staff in the EA[69] and are included in the license: (1) establish an Aquatic Resource Committee (Ordering Paragraph E); (2) improve the South Fork Recreation Site boat launch (Articles 409 and 413); (3) maintain a minimum Spada Lake level of 1,430 feet from July 1 to August 15 to enhance fishing and boating (Article 406); (4) prepare a recreational fishing brochure for Spada Lake (Article 409); (5) and develop and implement an Adaptive Management Plan to provide a framework for evaluating and adaptively managing competing water demands for Spada Lake water resources (Ordering Paragraphs D and E, and Article 305).

92. As stated previously, staff did not recommend the following three of the fish and wildlife agency recommendations because they include provisions for funding commitments, approval of as-yet unidentified and uncertain future potential measures, or are measures that are unrelated to project effects or purposes: (1) potentially implement additional as-yet unidentified modifications to the Marsh Creek rockslide fish passage barrier subject to the availability of funds in the fish habitat enhancement fund; (2) implement potential as-yet unidentified measures at unspecified locations in the

[68] 16 U.S.C. § 803(a)(1) (2006).

[69] See final EA at 234-243.

Sultan or Skykomish River basins if the objectives of a side channel enhancement plan cannot be achieved; and (3) develop a fish habitat enhancement fund.[70] Nevertheless, all of these recommendations are mandatory pursuant to either section 401 of the CWA or section 4(e) of the FPA, and thus are made a part of this license in Ordering Paragraphs D and E:

B. Marsh Creek Rockslide

93. On December 11, 2004, a rockslide near Marsh Creek at RM 7.6 of the Sultan River reduced or blocked fish passage in the project bypassed reach. Since then, high flows have changed the configuration of the slide debris to allow limited fish passage. The District proposes, and Ecology and the Forest Service require (Appendix A, condition 2 (A-LA 2) and Appendix B, condition 5.2 (A-LA 2), respectively), the District to prepare a plan to enhance fish passage through the rockslide area. On February 23, 2010, the District filed its Marsh Creek Slide Monitoring and Modification Plan. Consistent with the provisions of proposed license article A-LA 2, the plan includes provisions for implementing physical modifications to the rockslide, conducting post-high-flow physical surveys and post-modification topographic surveys, and filing a report within six months of completing the initial rockslide modifications that describes the methods that were used to modify the slide to enhance passage.

94. Also consistent with the requirements of proposed license article A-LA 2, the plan includes a provision to monitor the effectiveness of improving fish passage by annually monitoring escapement of Chinook salmon and steelhead in the diversion dam index area (RM 9.2 to 9.7). If annual escapement in that area does not exceed 10 percent of the total annual escapement of Chinook or steelhead in all index areas in the Sultan River in any year, or if the modifications to the slide cause further slides or blockages, the District would use funds from the Habitat Enhancement Account (proposed article A-LA 12) to implement additional modifications to the slide. However, the additional modifications to the rockslide would be made no earlier than six years after the initial modifications to allow time to evaluate the effectiveness of the initial slide modification after channel forming and flushing flows required by proposed article A-LA 8 and several fish life cycles occur. The method and schedule for such future modifications would be developed when the Aquatic Resource Committee determines such modifications are necessary, and only if there are funds available in the fish habitat enhancement account.

95. In the final EA, staff recommended the District's proposed initial modifications, monitoring, and reporting provisions included in the plan.[71] However, staff did not

[70] See final EA at 228-231.

[71] See final EA at 230.

recommend that the District be required to implement as-yet unidentified additional modifications using available funds from the fish habitat enhancement account. Instead, staff recommended that the District file a report documenting the results of the effectiveness of the initial modifications at improving fish passage, and any proposals and anticipated costs for additional modifications to improve fish passage at the Marsh Creek rockslide.[72] Staff's modifications to the plan provide a mechanism for the Commission to consider the need, benefits, and costs of any future potential modifications based on the effectiveness study.

96. Article 402 approves the District's proposed Marsh Creek Slide Monitoring and Modification Plan with the modifications.

C. Water Temperature Conditioning in Reach 3

97. The 20-cfs flow released to reach 3 of the Sultan River from the deepwater valve at Culmback dam is a relatively constant 3 to 6 degrees Celsius year-round, which results in water temperatures in the upper end of reach 3 that are less than optimal for salmonid growth, development, and survival.[73] The District proposes, and Ecology (Appendix B, condition 5.2 (A-LA 3)) and the Forest Service (Appendix B, condition 2 (A-LA 3)) require the District to develop a plan to implement a program to provide a seasonally appropriate water temperature regime to enhance temperature conditions for aquatic resources in reach 3 of the Sultan River.

98. The District filed the Water Temperature Conditioning Plan for Commission approval on July 16, 2010. The plan, developed in consultation and approved by the Aquatic Resource Committee, describes temperature conditioning performance standards, monitoring protocols, and an implementation and operation schedule consistent with the requirements of proposed license article A-LA 3. In the EA,[74] staff recommended approving the plan. Article 415 approves the plan. Article 401 requires the District to file any plan updates for Commission approval prior to implementation.

D. Powerhouse Flow Continuation

99. The District proposes to implement a Pelton-turbine flow bypass system at the project powerhouse to provide flow continuation to the lower Sultan River in the event the powerhouse goes off-line unexpectedly due to load rejection. The District also

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[72] See final EA at 231.

[73] *See* final EA at 82-85.

[74] See final EA at 223.

proposes to maintain staff at the powerhouse during potential electrical storms to bring the system back online quickly until the flow bypass system is installed and the system proves to be operationally effective. The system was installed in late 2009 as an early implementation measure, and consists of a new digital governor control system that allows independent control of each of the six needle valves and their flow deflectors. The District has been testing the system, but additional tests are needed to evaluate unit braking capabilities under various flows.

100. In the final EA, staff recommended the Pelton-turbine flow bypass system and powerhouse staffing requirements.[75] Ecology requires (Appendix A, condition 5.2 (A-LA 5)) the District to provide flow continuation at the project powerhouse. Article 403 requires the District to file a report within 15 days of completing the flow bypass system testing. The report will document completion of the flow bypass system and may request Commission approval to discontinue the powerhouse staffing. The District shall continue to staff the powerhouse during electrical storms until Commission approval is obtained to discontinue the staffing requirement.

E. Chinook Salmon Protection

101. To protect spawning and rearing Chinook salmon, the District proposes and Ecology requires, the District (Appendix A, condition 5.2 (A-LA 5)) to implement a 550-cfs Chinook salmon spawning flow-ceiling annually during the peak Chinook salmon spawning period. In the final EA, staff recommended the District's proposed Chinook salmon protective measures.[76] To enable the Commission to document compliance with the Chinook salmon protective measures, Article 407 requires the District to notify the Commission within 10 days of any deviations from the 550-cfs flow ceiling.

F. Side Channel Enhancement

102. The District proposes, and Ecology requires (Appendix A, condition 5.2 (A-LA 7)) aquatic habitat enhancement in the lower Sultan River by developing and implementing a Side Channel Enhancement Plan. The plan would include measures to enhance side channel habitat by restoring flow connectivity to 10,000 linear feet of side channels that would provide 3 acres of additional side-channel habitat along the lower Sultan River when instream flows are greater than 300 cfs. The District also proposes and Ecology requires that the plan include provisions for implementing additional as-yet unidentified measures at unspecified locations in the adjacent Skykomish River basin if

[75] See final EA at 223.

[76] See final EA at 223.

the 10,000 linear foot or 3 acre objectives are not met.

103. In the final EA, staff recommended the District's proposed side channel enhancement measures; staff did not recommend that the plan include a provision for implementing any as-yet unidentified measures at unspecified locations outside of the Sultan River basin because the lack of detail prevented staff from determining the benefits of the measures and nexus to project effects and purposes.[77] However, because this is a condition of Ecology's water quality certification, it is made part of the license through Ordering Paragraph D.

104. Staff also recommended in the final EA that an additional provision be included in the plan for the District to file a report after completing the side-channel enhancement measures that documents the results of the enhancement measures at meeting the plan objectives.[78] The report would enable the Commission to document compliance with the measures set forth in the plan. Article 404 requires the District to file a side channel enhancement report within 180 days of completion of the side-channel enhancement measures.

G. Ramping Rate Evaluation

105. The District proposes, and Ecology requires (Appendix A, condition 5.2 (A-LA 5)) the District, to prepare and file a ramping rate report within one year of completion of its proposed side channel enhancement measures to evaluate whether additional ramping rate restrictions are necessary to protect juvenile salmonids from stranding in the enhanced side channels. However, the specific methods that would be used to conduct the evaluation are not specified. Therefore, Article 405 requires the District to file a ramping rate evaluation plan within six months of completion of the proposed side-channel enhancement measures that provides the specific methods and schedule for conducting the juvenile fish stranding evaluation. Article 405 also requires the District to include in its ramping rate report any specific proposals for more restrictive ramping rates based on the findings in the report. Finally, Article 405 includes additional provisions for consulting with the Aquatic Resource Committee during preparation of the ramping rate evaluation plan and report.

H. Priority for City of Everett Water Supply

106. The Jackson Project was originally constructed to provide storage for the City of Everett's municipal water supply. The District proposes, and the City of Everett

[77] See final EA at 228-229.

[78] See final EA at 229.

recommends, that the project continue to be operated so that the City of Everett's water supply and water quality requirements continue to take precedence over generation to the extent specified in the off-license "Supplemental Agreement between Public Utility District No. 1 of Snohomish County and the City of Everett, Washington October 17, 2007, Part E.1."[79]

107. Although staff recommended this measure in the final EA, it is unnecessary to include such a requirement in the license. While the license does require the licensee to operate the project consistent with various measures to which all parties have agreed, the license does not establish minimum generation requirements. Thus, to the extent that the licensee is in compliance with the conditions of the license, it can elect at any time to forego generation in order to provide water supply. As discussed next, the licensee has agreed to, and I herein adopt, operating conditions based on revised reservoir rule curves that balance competing uses of Spada Lake water (Appendix A, condition 5.2 (A-LA 14) as modified by Article 406), in conjunction with an adaptive management plan (required by Appendix A, condition 5.2 (A-LA 15) and Appendix B, condition 2 (A-LA 15)) that establishes water use priorities and operational procedures for managing water when there are competing demands on that water, such as during drought conditions.

I. Project Operations and Adaptive Management

108. The District proposes and Ecology requires (Appendix A, condition 5.2) that the District operate the project consistent with the rule curves contained in proposed license article A-LA 14. The revised rule curves modify State 3 elevation targets between July 1 and September 15. To benefit the recreational fishery and recreation use on Spada Lake, the District would "attempt to maintain" a minimum impoundment water surface elevation in Spada Lake above 1,430 feet between July 1 and August 15. Until the temperature conditioning structure is installed and operational (described in Appendix A, condition 5.2 (A-LA 3)), the District would "target to maintain" a minimum impoundment elevation in Spada Lake at or above 1,420 feet from August 16 through September 15. After the temperature conditioning structure is installed, the District would "attempt to maintain" a minimum Spada Lake elevation above 1,415 feet from August 16 to September 15.

109. As noted in the EA,[80] demonstrating compliance with such an open-ended requirement would be difficult, if not impossible. Staff recommended, and this license

[79] The 2007 agreement can be found in the supplemental information filed November 1, 2007, in conjunction with the joint petition for declaratory order that the City of Everett does not need to be a licensee for the project.

[80] See final EA at 227 and 228, and B-5 through B-7.

requires, measures to improve the Spada Lake recreational fishery and continued boating access on the lake. To meet the recreational objectives and to define conditions that the Commission can effectively administer, staff recommended in the draft EA that the District be required to operate the project to maintain the specified levels rather than to "attempt to" maintain the levels.

110. In their comments on the draft EA, the District, City of Everett, and FWS state that the Commission should retain the language as proposed in the settlement agreement. They argue that staff's modifications elevate the Spada Lake recreational benefits over other beneficial uses (i.e., water supply, instream flows, power generation, etc.) and could jeopardize the District's ability to meet the flow requirements of these other water uses under certain conditions, such as dry water years and increased City of Everett water demand. The District also asserts that such conditions could limit its ability to respond to volatile market pricing. The District and the City of Everett provided alternative language that the settlement parties found acceptable that would make meeting such requirements subject to meeting the City of Everett water demands, other license requirements, and power production needs. Because "power production needs" was still too broadly defined by the District's alternative language, staff recommended in the final EA that the project be operated subject to meeting the City of Everett's water demands, other license requirements, and responding to emergency power grid situations as defined by the District.

111. Staff's recommendations include the salient elements of the District's alternative language and the intent of the settlement parties to retain high summer lake levels for recreation when possible. They also provide the District with the desired operational flexibility to meet other obligations contained in this license, balance power generation with recreation and other environmental benefits, and result in license conditions that are enforceable by the Commission. Therefore, Article 406 of this license modifies the State 3 operational conditions defined in Appendix A, condition 5.2 (A-LA 14) as recommended by staff.

112. Staff also recognized that the project has a number of competing demands on available water that make project operations complex when considering drought conditions and changing municipal water supply demand. [81] NMFS, Interior, and Washington DFW recommend and the Ecology (Appendix A, condition 5.2 (A-LA 15) Forest Service (Appendix B, condition 2 (A-LA 15) require that the District develop and implement an Adaptive Management Plan that documents how it would address water use issues and the process for evaluating and adaptively managing competing water uses within the constraints of the specific environmental measures. However, any proposal

[81] See final EA at 79-81.

that would be inconsistent with the conditions of this license would require the licensee to file for an amendment of the license.

J. Compliance Monitoring

113. This license includes environmental enhancement measures for instream flows, ecological process flows, and ramping rates to be maintained at all times during project operations. To enable the Commission to administer compliance with the operational provisions of the license, staff recommended in the final EA that the District develop an Operational Compliance Monitoring Plan.[82] Article 407 requires the District to develop an Operational Compliance Monitoring Plan after consultation with the Aquatic Resource Committee, and file the plan for Commission approval, prior to implementation.

K. Spada Lake Recreational Fishing

114. In the final EA,[83] staff recommended approving the District's Spada Lake Recreational Fishery Plan, except for the provision in Section 3 of the plan to operate the project in the summer according to the proposed State 3 reservoir elevation targets discussed above. For the reasons provided above, Article 409 approves the plan, with modifications to Section 3 of the plan to require the District to operate the project in accordance with Article 406. Article 409 also modifies the reporting and plan review requirements in Section 6 of the plan to require the District to file the fishing brochure and any updates to the brochure and the results of the gill net sampling with the Commission to document compliance with the provisions of Section 4 and 5 of the plan, respectively.

L. Fisheries and Habitat Monitoring

115. The District proposes and Ecology (Appendix A condition 5.2 (A-LA 17) and the Forest Service (Appendix B condition 2 (A-LA 17)) require that the District file for Commission approval a Fisheries and Habitat Monitoring Plan. The District filed the plan on September 2, 2010. Consistent with the requirements of A-LA 17, the plan describes the methods and schedule the District would follow to monitor long-term changes in fish habitat, water temperature, and salmon and steelhead distribution, abundance, and habitat use in the Sultan River over the term of a new license. The District proposes to use the monitoring data to evaluate the effectiveness of the resource enhancement measures implemented under the new license. In the final EA,[84] staff

[82] See final EA at 228.

[83] See final EA at 227-228.

[84] See final EA at 226.

recommended all of the District's proposed measures included in this plan, but also recommended additional consultation and annual reporting provisions to enable the Commission to administer compliance with the approved plan requirements. Article 410 approves the plan with modifications to Section 4.1 of the plan to require the District to file an annual report documenting compliance with the monitoring and maintenance requirements of the side channel enhancement measures required by Appendix A, condition 5.2 (A-LA 7), documenting any deviations of from the 550 cfs Chinook salmon spawning flow ceiling required by Appendix A, condition 5.2 (A-LA 5), documenting any dewatering of Chinook salmon redds resulting from the deviation from the spawning flow ceiling, and identifying any proposed corrective actions. Article 410 also requires the District to file, for Commission approval, any future proposed updates to the plan developed in consultation with the Aquatic Resources Committee.

M. Recreation Resources Management Plan

116. Forest Service condition 2 (R-LA 1) requires the District to implement the Recreation Resources Management Plan filed with the settlement agreement. The plan provides for the District's continued operation and maintenance of the existing six day-use recreation sites at Spada Lake and the development of a new recreation site on Spada Lake near the junction of Culmback Dam Road and Forest Road 6122. The District will also enhance recreation on Spada Lake by improving the existing boat ramp to accommodate trailered-boat launching and expanding parking for trailered-boats at the South Fork Recreation site; adding picnic tables and signage at the South Shore Recreation Site; constructing new guardrails and adding picnic tables, benches, and signage to the Bear Creek Recreation Site; and replacing aging signage and railings at the North Shore Recreation Site. The District will improve access to the Sultan River by developing a new trail from Culmback dam to the dam's base; developing a new Sultan River Canyon trail from Forest Road 6122 to the upper portion of the Sultan River bypassed reach; modifying the gate to allow pedestrian-only, year-round river access at the Powerhouse East River Access Area; and better defining and expanding trailer-boat parking by removing boulders that inhibit boat launching, reconfiguring the driveway and boat launch entrance, and improving signage at the Trout Farm Road River Access Area.

117. The District will monitor recreation use levels at the recreation sites and along the Sultan River and report recreation use levels on the project's Development Recreation Report (FERC Form 80) every six years. The District will also offer to hold a recreation group meeting prior to filing, the FERC Form 80 data with the Commission to discuss use levels, resource impacts, demand, etc. based on FERC Form 80 data. If after two cycles (12 years) or more of collecting and analyzing FERC Form 80 data, significant changes to project recreational use levels are identified, the plan may be modified to address future needs. The District will consult with National Park Service, Washington DNR, Washington Recreation and Conservation Office, City of Everett, and American Whitewater, and revise elements of the plan, if needed.

118. In the final EA,[85] staff recommended approving the Recreation Resources Management Plan, with minor reporting modifications to document whether project facilities are beginning to exceed capacity, thus warranting a plan update. On January 25, 2011, the District filed a revised recreation plan to address modifications to the proposed Sultan River Canyon Trail discussed below. However, the revised plan did not incorporate Commission staff's recommended reporting modifications. Article 413 requires the District to provide the project's FERC Form 80 data to the National Park Service, Washington DNR, Washington Recreation and Conservation Office, City of Everett, and American Whitewater to facilitate consultation with the agencies regarding plan updates. Article 413 also requires the District to file any recommendations to update the plan and evidence of the consultation, when it files its Form 80 data.

1. Sultan River Canyon Trail

119. The recreation plan filed with the settlement agreement included a provision to close an approximately 0.5-mile-long portion of Forest Service Road 6122 that crosses District-owned land and convert it to a trail for hiking, access to National Forest system lands, off-road vehicle (ORV) use for miners, and administrative use by the Forest Service and District personnel. The District would also develop and maintain a pedestrian-only trail (the Sultan River Canyon Trail) that leads from the Forest Service Road 6122 road-to-trail conversion to the Sultan River. Improvements to the trail would enhance access to the lower end of the Sultan River bypassed reach 3 for whitewater boating. Because abandoning the road would create significant engineering issues associated with removing existing culverts where they cross steep drainages with unstable slopes and increase maintenance requirements to support ORV use, the District revised the Recreation Resource Management Plan in consultation with the Forest Service. The revised plan now provides for the District to maintain the portion of Forest Road 6122 on District-owned lands to Forest Service road standards for use as a public trail for hiking, mountain biking, and access to National Forest lands. A gate on the trail would generally prevent vehicular access, but keys will be provided to mining claimants and Forest Service for administrative access. The District will continue to develop and maintain the pedestrian-only portion of the trail to Forest Service trail standards. According to the filing, the District and the Forest Service worked together to modify the plan. No one has objected to the revision.

120. Because the proposed modification will have fewer environmental effects, and will continue to provide access for mining claimants [86] and whitewater boaters, hikers,

[85] See final EA at 224.

[86] See final EA at 221.

and others using trail, article 413 approves the revised plan, with modifications to incorporate staff's recommended reporting requirements described above.

2. Project Recreation Facilities and Revisions to the Project Boundary

121. The District does not propose to include within the project boundary five of the existing Sultan River access areas (Diversion Dam, Horseshoe Bend, Old Gaging Station, Powerhouse West, and Powerhouse East), or that portion of the Sultan River Canyon Trail (i.e., the Forest Road 6122 portion of the trail on District lands), none of which is included within the current project boundary. The District argues that the river access areas and the Sultan River Canyon Trail need not be included in the project boundary because they now serve, and would continue to serve, multiple uses and purposes not tied to project effects or purposes, such as mining, City of Everett timber harvesting, and hunters and anglers en route to Washington DNR lands outside the project boundaries. Further, the parties to the settlement agreement agree that the project boundary should not be modified to accommodate implementation of any recommended enhancement measure.

122. Project boundaries are used to designate the geographic extent of the lands, waters, works, and facilities that the license identifies as comprising the licensed project and for which the licensee must hold the rights necessary to carry out project purposes. All facilities, lands, and waters needed to carry out project purposes should be within the project boundary, particularly where a licensee is expected to undertake measures throughout the license term, such as ongoing maintenance with respect to a recreation facility that the Commission has determined is necessary for project purposes, and the Commission will have ongoing responsibility to ensure compliance.[87] The river access areas were developed to improve fishing access to the Sultan River and were approved as part of the current recreation plan in 1994.[88] In the final EA, staff recommended the District's proposed enhancement and continued maintenance of the river access areas.[89] These river access areas serve project purposes and are considered project facilities and are required to be brought into the project boundary by Article 203. However, this license does not require the roads leading to these river access areas to be brought into the project boundary at this time because they, as the District points out, are not used primarily for project purposes and there is no ongoing obligation for the District to

[87] See Policy Statement on Hydropower Licensing Settlements, 116 FERC ¶61,270 (2006).

[88] See *Public Utility District No. 1 of Snohomish County and City of Everett, Washington*, 69 FERC ¶ 62,188 (1994),

[89] See final EA at 188-189 and 224.

maintain these roads.

123. Regarding the proposed Sultan River Canyon Trail, the District proposes and the Forest Service requires the District to construct and maintain the trail to Forest Service trail standards. In the final EA, staff recommended upgrading the existing trail to provide and improve access for whitewater boaters during the scheduled whitewater flow events.[90] Typically, the requirement for the District to construct and maintain the trail to provide adequate access for whitewater boating would be sufficient reason to bring the trail into the project boundary. However, there are provisions in the Whitewater Recreation Plan to potentially suspend whitewater flows if there is inadequate use of the provided flows. The trail would serve multiple uses and its upkeep by the District would be overseen by the Forest Service through a special use authorization. In light of the above, the trail is not required to be brought into the project boundary at this time.

N. Whitewater Recreation Plan

124. Forest Service condition 2 (A-LA 4) requires the District to file a plan describing how it would provide 12 whitewater boating events at flows between 600 and 1,200 cfs every three years for the duration of the license with sufficient advance notice to whitewater boaters. The District filed the Whitewater Recreation Plan on June 17, 2010. Consistent with the requirements of condition 2, the plan describes, among other items, the frequency, magnitude, duration, and timing of each whitewater event during the first three-year period; the methods for monitoring boater satisfaction and use and the effects of whitewater boating flow releases on aquatic and terrestrial resources; and the procedures for reviewing and updating the plan. The plan was developed in consultation with the National Park Service and Aquatic Resource Committee, of which the Forest Service and American Whitewater are members. All comments were addressed and no one has objected to the plan.

125. In the EA,[91] staff recommended approving the Whitewater Recreation Plan, with modifications to record the number of whitewater boaters[92] at the Sultan River Diversion

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[90] See final EA at 196-197 and 233.

[91] See final EA at 231-32.

[92] Whitewater boaters use multiple segments of the Sultan River. The upper whitewater boating reach extends from Culmback dam downstream to the Jackson Project powerhouse and offers whitewater flows rated at Class III (intermediate) and Class IV (advanced). The downstream boating reach begins at the powerhouse and continues to the confluence with the Skykomish River and offers whitewater flows rated at Class I (easy) and Class II (novice).

Dam River Access Area, the Powerhouse River Access Area, and the Trout Farm Road River Access Area because the plan did not identify where monitoring would occur. Article 412 modifies the plan to require counts to be made at these locations at a minimum.

126. During each three-year period, the District will provide a firm water budget of 2,100 acre-feet of water (total, to be allocated over the three-year period) to ensure the 12 whitewater events occur. The District plans to use a whitewater boating water budget tracking form to document the characteristics of each whitewater release (e.g. flow magnitude, duration, date, volume deducted from budget, balance, etc). To ensure compliance with the provisions of the plan, Article 412 also requires the District to include the budget tracking forms in the whitewater boating reports filed with the Commission.

127. The District intends to maximize the use of the water resources by sequencing whitewater flow releases with releases for other objectives such as salmon upstream migration and outmigration flows, and channel flushing, forming and maintenance flows. The District will monitor the water level at the Sultan River and Skykomish River confluence during these releases. In section 2.3.2 of the Whitewater Recreation Plan, the District states that if necessary to avoid exacerbating any flood damage to the city of Sultan during a whitewater event, the District may reduce the water release.

128. Based on the information contained in the license application, whitewater releases between 600 and 1,200 cfs are not expected to cause flooding in the city of Sultan, nor are the releases associated with the channel forming and maintenance flows.[93] However, to clarify that no whitewater releases should be made that are likely to cause flooding in the city of Sultan, staff recommended that the District not provide any whitewater boating releases, or curtail any already initiated release, if flooding in the city of Sultan would be likely to occur or be exacerbated should flows continue and such flows are under the District's control. The plan did not explain how the District would determine if the whitewater releases would be likely to cause or exacerbate flooding in the Sultan River or how it would monitor for flooding. Therefore Article 412 requires the District to file an addendum to the plan detailing how it would determine if the whitewater releases would be likely to cause flooding or exacerbate flooding in the city of Sultan. Staff also recommended that the District report water level measurements taken during whitewater events at the confluence of the Sultan and Skykomish Rivers and any curtailment of provided whitewater releases to prevent flooding in the annual report summarizing event

[93] Channel maintenance and flushing flows vary between 1,500 cfs and 6,500 cfs as measured at the USGS gage no. 12138160 located downstream of the powerhouse at RM 4.5.

monitoring data (section 5.1 of the plan). Article 412 approves the plan with modifications to include these provisions.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

129. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA and use and occupancy of U.S. lands.

B. Exhibit F Drawings

130. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Articles 202 requires the filing of the approved Exhibit F drawings in these formats.[94]

C. Exhibit G Drawings

131. The exhibit G drawings filed with license application and amended on August 13, 2009, do not identify all of the project recreation sites and river access areas on the drawings; Olney Pass, South Fork, South Shore, Nighthawk, Bear Creek, and North Shore Recreation Sites; and Diversion Dam, Horseshoe Bend, Old Gaging Station, Powerhouse West, Powerhouse East, and Trout Farm Road River Access Areas shall be shown on the drawings. The exhibit G drawings also depict the project boundary under the previous license as well as the proposed project boundary; only the project boundary required by this license should be shown on the drawings. The exhibit G drawings should be submitted in black and white, not in color as filed. Therefore, I am not approving the Exhibit G project boundary drawings. Article 203 requires the District to file revised Exhibit G drawings pursuant to §§ 4.39 and 4.41 of the Commission's regulations.

D. Headwater Benefits

132. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 204 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

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[94] Exhibit F, sheet 16 is a single-line drawing of the electrical facilities of the Jackson Project. Single-line electrical drawings are considered part of exhibit H and are not approved as exhibit F drawings.

E. Use and Occupancy of Project Lands and Waters

133. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project lands would be unduly burdensome. Therefore, Article 415 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

F. Review of Final Plans and Specifications

134. Article 301 requires the licensee to provide the Commission's Division of Dam Safety and Inspection Portland Regional Office (D2SI-PRO) with final contract drawings and specifications—together with a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan.

135. Article 302 requires the licensee to provide the Commission's D2SI-PRO with cofferdam and deep excavation design drawings.

136. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised drawings of project features as-built. Article 303 provides for the filing of these drawings.

137. To ensure that any changes to project facilities and operations is coordinated early with the Commission's Dam Safety and Inspections—Portland Regional Office, Article 304 requires the licensee to file a plan and schedule of any such modifications (including, but not limited to, modifications to valves, morning glory spillway, or other project structures to improve water temperatures for fish in the Sultan River below Culmback dam and volitional fish passage at the diversion dam) within 90 days of receipt of the license.

138. The District states that the proposed rule curves will slightly increase the frequency of spill, although the magnitude of the spills will be less. In addition, the proposed State 2-3 line is adjusted in the late spring to allow for higher lake levels. Commission staff needs to make sure that the new reservoir levels have no impact on the ability to pass the Inflow Design Flood, nor create additional flooding impacts to low-lying structures downstream of the reservoir. Therefore, Article 305 requires the licensee to provide to the Commission a report describing the effects of the revised operating levels of spill events. Article 401 reserves the Commission's right to require changes in facilities/operations based on the report.

G. Commission Approval of Resource Plans, Reports, and Filing of Amendments

139. Included in appendices A, B and E are certain certification conditions that require the District to develop and implement plans that may specify operational changes to the project as licensed, do not require the District to file such plans with the Commission for approval, or do not require the District to file some reports with the Commission that are needed to demonstrate compliance with the license requirements. Therefore, Article 401 requires the licensee to: (a) file the listed plans for Commission approval; (b) file the listed reports with the Commission; (c) notify the Commission of planned and unplanned deviations from license requirements; and (d) file an amendment application(s) as appropriate.

STATE AND FEDERAL COMPREHENSIVE PLANS

140. Section 10(a)(2)(A) of the FPA[95] requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.[96] Under section 10(a)(2)(A), federal and state agencies filed 74 comprehensive plans that address various resources in Washington. Of these, staff identified and reviewed 20 plans that are relevant to this project.[97] No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

141. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,[98] Commission staff evaluated the District's record as a licensee for these areas: (1) conservation efforts; (2) compliance history and ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission services; (7) cost-effectiveness of plans; and (8) actions affecting the public. I accept the staff's findings in each of the areas.

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[95] 16 U.S.C. § 803(a)(2)(A) (2006).

[96] Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2011).

[97] The list of applicable plans can be found in section 5.5 of the EA.

[98] 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2006).

A. Conservation Efforts

142. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily engaged in the generation or sale of electric power, like the District. Each year, the District completes a 5-year forecast of future load growth and the need for new resources, including customer efficiency programs, to meet its customer demand. Demand side management actions and goals discussed by the District[99] indicate the District promotes demand side load management practices for both residential and commercial/industrial customers and has undertaken several programs to improve efficiency and promote energy conservation at its own facilities. These programs show that the District is making an effort to conserve electricity and has made a satisfactory good faith effort to comply with section 10(a)(2)(C) of the FPA.

B. Compliance History and Ability to Comply with New License

143. Based on a review of the District's compliance with the terms and conditions of the existing license, we find that the District's overall record of making timely filings and compliance with its license is satisfactory. Therefore, staff believes that the District can satisfy the conditions of a new license.

C. Safe Management, Operation, and Maintenance of the Project

144. Staff reviewed the District's management, operation, and maintenance of the Jackson Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. Staff concludes that the dam and other project works are safe, and that there is no reason to believe that the District cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

145. Staff reviewed the District's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff's review indicates that the District regularly inspects the project turbine-generator units to ensure they continue to perform in an optimal manner; schedules maintenance to minimize effects on energy production; and since the project has been in operation, has undertaken several initiatives to ensure the project is able to operate reliably into the future. Staff concludes that the District is capable of operating the project to provide

[99] For a detailed description of the applicant's conservation efforts, see District, 2009(a), exhibit H.

efficient and reliable electric service in the future.

E. Need for Power

146. The District serves more than 320,000 retail customer accounts within Snohomish County, including residential, commercial, and industrial customers. The District owns electric generating plants with a total nameplate capacity of 164.45 MW; 112.45 MW is from hydropower facilities and 52 MW is from biomass facilities. An additional 7.5 MW of hydroelectric capacity is slated to be brought online with the refurbishment of the Youngs Creek Hydroelectric Project No. 10359. The 111.8-MW Jackson Project generates an average of approximately 402,543 MWh annually. The District's load requirements amount to more than 6.9 million MWh annually. In 2008, more than 88 percent of the District's long-term power supply was purchased from the Bonneville Power Administration, with 4 percent provided from long-term power supply contracts, 2 percent from the District's co-generation project, and 6 percent from the Jackson Project.

147. The District's 2008 Integrated Resource Plan predicts that its loads will grow by 22.5 percent from 2009 to 2020 with a compound annual growth rate of 1.9 percent per year during that period. It plans to meet this increased demand by using a diverse mix of conservation, renewable power supplies, purchased power contracts, wholesale market purchases, and District-owned resources.

148. The Jackson Project is located within the Western Electricity Coordinating Council's (WECC), Northwest subregion. WECC's 10-year coordinated plan summary, for the United States portion of the Northwest subregion for the period 2009 through 2018 projects an annual growth rate in winter peak demand and annual energy requirements for the subregion of 1.5 percent and 1.54 percent, respectively. WECC projects winter resource capacity margins (generating capacity in excess of demand) will drop from 27.0 percent in 2009/2010 to 18.7 percent of firm peak demand by winter 2018/2019.

149. Power from the Jackson Project will continue to meet the District's customers' growing needs as well as meet part of the regional need for power.

F. Transmission Services

150. The project does not have a transmission system associated with it. The project interconnects with a District loop transmission system at the powerhouse substation.

G. Cost Effectiveness of Plans

151. As discussed in this order, the District plans to make a number of facility and operational changes to enhance environmental resources affected by the project. Based

on the District's record as an existing licensee, staff concludes that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

152. The District provided extensive opportunity for public involvement in the development of its application for a new license for the Jackson Project. During the previous license period, the District operated the project with consideration for the protection of resources associated with the project reservoir and affected downstream uses of the Sultan River. The District provides incidental flood protection for the city of Sultan, municipal water supply for the City of Everett, recreational facilities at Spada Lake, Sultan River access sites, and recreational angling opportunities for steelhead. The District uses the project to help meet regional power needs. In addition, the project provides employment opportunities.

PROJECT ECONOMICS

153. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,[100] the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

154. In applying this analysis to the Jackson Project, I considered two options: the District's proposal and the project as licensed herein. As proposed by the District, the levelized annual cost of operating the Jackson Project is $15,588,620 or $38.73/MWh. The proposed project would generate an estimated average of 402,543 MWh of energy annually. When I multiply our estimate of average annual generation by the alternative power cost of $54.20/MWh,[101] I get a total value of the project's power of $21,818,510 in 2010 dollars. To determine whether the project is currently economically beneficial, I subtract the project costs from the value of the project's power. Therefore, in the first year of operation, the project would cost $6,229,840, or $15.48/MWh, less than the likely

[100] 72 FERC ¶ 61,027 (1995).

[101] The alternative power cost of $54.20/MWh is based on information from the District's license application.

alternative cost of power.

155. As licensed herein with the mandatory conditions and staff measures, the levelized annual cost of operating the project would be about $15,602,700, or $38.76/MWh. Based on an estimated average generation of 402,543 MWh as licensed, the project would produce power valued at $21,818,510 when multiplied by the $54.20/MWh value of the project's power. Therefore, in the first year of operation, project power would cost $6,215,810, or $15.44/MWh, less than the likely cost of alternative power.

156. In considering public interest factors, the Commission takes into account that hydroelectric project offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include their ability to help maintain the stability of a power system, such as quickly adjusting power output to respond to rapid changes in system load, and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and put them back on line.

COMPREHENSIVE DEVELOPMENT

157. Sections 4(e) and 10(a)(1) of the FPA[102] require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation; the protection, mitigation of, damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

158. The EA for the project contains background information, analysis of effects, and support for related license articles. I conclude, based on the record of this proceeding, including the EA and the comments thereon, that licensing the Jackson Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

159. Based on staff's independent review and evaluation of the Jackson Project, recommendations from the resource agencies and other entities, and the no-action alternative, as documented in the EA, I have selected the proposed Jackson Project, with the staff-recommended measures, and find that it is best adapted to a comprehensive plan for improving or developing the Sultan River.

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[102] 16 U.S.C. §§ 797(e) and 803(a)(1) (2006).

160. I selected this alternative because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and inexpensive source of electric energy from downstream hydroelectric projects; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the 111.8 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

161. Section 15(e) of the FPA,[103] provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental protection and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.[104] This license requires an extensive amount of new construction and environmental measures, including: (1) modifications to the Marsh Creek rockslide to improve fish passage; (2) the addition of a temperature conditioning structure and modifications to Culmback dam valve to improve temperatures in reach 3; (3) large woody debris and side channel enhancement projects to improve aquatic habitat in the Sultan River; (4) higher minimum instream flows; (5) channel maintenance and channel forming and flushing flows; (6) upstream and downstream fish migration flows; (7) whitewater boating flows; and (8) the addition of new recreation facilities and trails.

162. The amount of proposed new investment in environmental measures for this project is extensive. However, in Section VII of the settlement agreement, the signatories agree to a 45-year license term. Therefore this license will be for a term of 45 years.

The Director orders:

(A) This license is issued to the Public Utility District No. 1 of Snohomish County (licensee) for a period of 45 years, effective the first day of the month in which this order is issued, to operate and maintain the Henry M. Jackson Hydroelectric Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

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[103] 16 U.S.C. § 808(e) (2006).

[104] See *Consumers Power Co.*, 68 FERC ¶ 61,077 at 61,383-84 (1994).

(1) All lands, to the extent of the licensee's interests in these lands, described in the project description and the project boundary discussion of this order.

(2) Project works consisting of: (a) Spada Lake, which is about 5 miles long with a surface area of 1,908 acres and gross storage capacity of 153,260 acre-feet at the maximum water surface elevation of 1,450 feet; (b) a concrete morning glory emergency spillway with an inside diameter of 38 feet and a crest elevation of 1,450 feet; (c) Culmback dam, which is a 640-foot-long and 262-foot-high earth and rockfill dam, with a crest elevation of 1,470 feet and located at river mile 16.5; (d) a 20-foot-diameter diversion tunnel through the base of the right abutment that intersects the horizontal spillway tunnel; (e) a concrete plug in the diversion tunnel that has two encased 4-foot-diameter pipes with valves to control evacuation flow; (f) a 16-inch-diameter bypass line that was constructed through the dam and anchored on its face to provide an alternate source of bypass flows as needed; (g) a 110-foot-tall concrete intake structure on the left bank of the reservoir, with three 20-foot movable panels that withdraw unscreened water from various depths; (h) a 3.8-mile-long, 14-foot-diameter unlined tunnel and a 3.7-mile-long, 10-foot-diameter underground steel pipeline which leads from the intake structure to the powerhouse, bypassing 12.2 miles of the Sultan River; (i) a two-story, 175-foot-long, 66-foot-wide reinforced concrete powerhouse; (j) two Pelton turbines rated at 47.5 MW each, which discharge directly to the Sultan River; (k) two Francis turbines rated at 8.4 MW each, which discharge to the Lake Chaplain water supply pipeline; (l) a switchyard adjacent to the powerhouse that delivers power to the District's existing transmission system; (m) the Lake Chaplain water supply pipeline, an approximately 3.5-mile-long, 72-inch-diameter, underground pipeline, which routes water from the powerhouse to a control structure, called Portal 2; (n) a 1.5-mile-long tunnel and a 2,000-foot-long, 72-inch-diameter concrete pipeline leading from Portal 2 to the diversion dam; (o) a 120-foot-long, 20-foot-high, ogee-crested, concrete gravity diversion dam located at river mile 9.7 on the Sultan River (Sultan River diversion dam); and (p) appurtenant facilities.

The project works generally described in the previous paragraphs are more specifically shown and described by those parts of exhibits A and F shown below:

Exhibit A: The following sections of exhibit A filed on June 1, 2009, and amended on December 17, 2009, to reflect the settlement agreement:

Section A.2, pages A-3 to A-17, entitled "Current Henry M. Jackson Hydroelectric Project Facilities," with the exception of the last two paragraphs of section A.2.9, page A-11, that pertain to the new discharge structure adjacent to the Sultan River diversion dam that is no longer proposed, and section A.3, page A-17, entitled "Proposed New Structures and Facilities," with the exception of the last paragraph in the section that pertains to the new discharge structure adjacent to the Sultan River diversion dam that is no longer proposed.

Exhibit F: The following exhibit F drawings filed on June 1, 2009, and amended on December 17, 2009, to reflect the settlement agreement:

Sheet No.	FERC No. 2157-	Description
F-1	1001	Reservoir Map
F-2	1002	Dam and Appurtenances Plan
F-3	1003	Dam and Appurtenances Sections
F-4	1004	Spillway Plan, Profile and Sections
F-5	1005	Outlet Works Plans and Profiles
F-6	1006	Intake Structure Sections
F-7	1007	Power Tunnel Sections and Details
F-8	1008	Power Pipeline Sections and Details
F-9	1009	Powerhouse – Site Plan
F-10	1010	Powerhouse – Plans Top Deck
F-11	1011	Powerhouse – Plans Generator Floor
F-12	1012	Powerhouse – Plans Turbine Floor
F-13	1013	Powerhouse – Plans Turbine Pit and Tailrace
F-14	1014	Powerhouse – Cross Section
F-15	1015	Powerhouse – Longitudinal Section
F-17	1016	Lake Chaplain Pipeline Sections and Details
F-18	1017	Sultan River Diversion Dam and Intake
F-19	1018	Pre-existing Water Supply Line Profile Map and Sections
F-20	1019	Pre-existing Water Supply Pipeline Replacement of (Woodstave Pipeline) Section and Details
F-21	1020	Power Tunnel Plan and Profile
F-22	1021	Pipeline to Powerhouse Plan and Profile (sheet 1 of 2)
F-23	1022	Pipeline to Powerhouse Plan and Profile (sheet 2 of 2)
F-24	1023	Lake Chaplain Pipeline Plan and Profile (sheet 1 of 2)
F-25	1024	Lake Chaplain Pipeline Plan and Profile (sheet 2 of 2)
F-26	1025	Access Road

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian and other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibits A and F described above are approved and made part of this license. The exhibit G drawings filed as part of the license application and amended on

December 17, 2009, to reflect the settlement agreement, do not conform to the Commission's regulations and are not approved.

(D) This license is subject to the conditions submitted by Washington Department of Ecology under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), as those conditions are set forth in Appendix A to this order.

(E) This license is subject to the conditions submitted by the U.S. Forest Service under section 4(e) of the FPA, as those conditions are set forth in Appendix B to this order.

(F) This license is subject to the conditions submitted by the Secretary of Commerce under section 18 of the FPA, as those conditions are set forth in Appendix C to this order.

(G) This license is subject to the conditions submitted by the Secretary of Interior under section 18 of the FPA, as those conditions are set forth in Appendix D to this order.

(H) This license is subject to the incidental take terms and conditions of the Biological Opinion submitted by the National Marine Fisheries Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix E to this order.

(I) This license is subject to the incidental take terms and conditions of the Biological Opinion submitted by the U.S Fish and Wildlife Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix F to this order.

(J) This license is also subject to the articles set forth in Form L-1 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Lands of the United States" (see 54 FPC 1799 et seq.), as reproduced at the end of this order, and the following additional articles:

Article 201. *Administrative Annual Charges*. The licensee shall pay the United States annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purposes of:

(1) reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 111.8 megawatts; and

(2) recompensing the United States for the use, occupancy, and enjoyment of 3,477.6 acres of its lands (other than for transmission line right-of-way).

Article 202. *Exhibit F Drawings*. Within 45 days of the date of issuance of the license, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

(a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" x 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., **P-2157-1000** through **P-2157-1025**) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections Portland Regional Office.

(b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections Portland Regional Office. Exhibit F drawings must be identified as Critical Energy Infrastructure Information (CEII) material under 18 CFR §388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format **[P-2157-1000**, F-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24" x 36" (min), 28" x 40" (max)
FILE SIZE – less than 1 MB desired

Article 203. *Exhibit G Drawings*. Within 90 days of the effective date of the license, the licensee shall file, for Commission approval, revised Exhibit G drawings enclosing within the project boundary all principal project works necessary for operation and maintenance of the project, and identifying the location and name of each project recreation site (Olney Pass, South Fork, South Shore, Nighthawk, Bear Creek, and North Shore Recreation Sites) and Sultan River access areas (Diversion Dam, Horseshoe Bend, Old Gaging Station, Powerhouse West, Powerhouse East, and Trout Farm Road River Access Areas). The Exhibit G drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 204. *Headwater Benefits*. If the licensee's project was directly benefited

by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 301. *Contract Plans and Specifications*. At least 60 days prior to the start of any construction (including, but not limited to, infrastructure changes associated with water temperature conditioning modifications, Sultan River diversion dam volitional fish passage facilities, and recreation facilities), the licensee shall submit one copy of its plans and specifications to the Commission's Division of Dam Safety and Inspections (D2SI) - Portland Regional Engineer, and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI). The submittal also must include as part of the preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI – Portland Regional Engineer has approved in writing the plans and specifications and determined that all preconstruction requirements have been satisfied.

Article 302. *Cofferdam Construction Drawings and Deep Excavations.* Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) - Portland Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 303. *As Built Drawings*. Within 90 days of completion of construction of the facilities directed by any article of this license the licensee shall file for Commission approval revised exhibits A, F, and G, as appropriate, to show those project facilities as built. A courtesy copy shall be filed with the Division of Dam Safety and Inspections (D2SI) – Portland Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

Article 304. *Project Modification Resulting From Environmental Requirements*. The planning and design of any permanent or temporary modification which affects the project works or operation resulting from environmental requirements shall be coordinated as early as feasible with the Commission's Division Dam Safety and

Inspections - Portland Regional Office (D2SI-PRO). Within 90 days of receipt of the license, a letter is to be sent to the D2SI-PRO providing a plan and schedule of any proposed modifications (including, but not limited to, modifications to valves, the mourning glory spillway, or other project structures to release water to the Sultan River below Culmback dam to improve water temperature for fish as required by Article 415) to the water-retaining features of the project in the planning and design phase resulting from environmental requirements of the license. The schedule is to allow sufficient review time for the Commission to insure that the proposed work does not adversely affect the project works, dam safety or project operation.

Article 305. *Flood Routing.* Within 60 days of the issuance date of the license, the licensee shall submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) – Portland Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI), of a report describing the effects of revised operating levels on the probability of spill events and spillway adequacy. The report shall include a flood routing study that evaluates the ability of the development to safely pass flows up to the Inflow Design Flood. The report shall compare the probabilities of spill events under the historical and licensed target levels. The report shall assess if there would be a higher likelihood of spill events, and of low-lying structures located downstream of the reservoir being flooded under the new operating scenario. If necessary, the report shall include a plan and schedule for performing any remedial measures necessary to ensure the continued safe operation of the developments during high flows. The licensee shall not implement the water level scenarios described in the settlement agreement until the D2SI - Portland Regional Engineer determines that these altered project operations have no adverse impact on dam safety and issues a letter indicating such.

Article 401. *Commission Approval, Notification and Filing of Amendments.*

(a) Requirement to File Plans for Commission Approval

Certain conditions of Washington Department of Ecology's (Ecology) water quality certification (Appendix A) and the U.S. Forest Service's (Forest Service) 4(e) conditions (Appendix B) require the licensee to prepare plans in consultation with other entities and for approval by Ecology or the Forest Service and implement specific measures without prior Commission approval. Each such plan shall also be submitted to the Commission for approval. These plans are listed in the following table.

Forest Service 4(e) condition no.	Washington Ecology certification condition no.	Description	Due Date
--	6.0	Spill Prevention, Containment, and Countermeasure Plan	Within one year from license issuance
--	7.0; 9.0(4)	Water Quality Protection Plan	At least two months prior to initiation of construction
	7.0(1)	Stormwater Pollution Prevention Plan	At least two months prior to initiation of construction
	7.0(2)	In-Water-Work Protection Plan	At least two months prior to initiation of construction
--	9.0(1)	Water Quality Monitoring Plan	Within six months from license issuance
3	--	Site-specific plans for habitat and ground-disturbing activities on National Forest System lands	At least 60 days prior to any ground-disturbing action

The licensee shall submit to the Commission documentation of its consultation, copies of comments and recommendations made in connection with each plan, a description of how each plan accommodates the comments and recommendations, and documentation that it has received approval from Ecology and the Forest Service as applicable. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, each plan becomes a requirement of the license, and the licensee shall implement the plan, including any changes required by the Commission.

(b) Requirement to File Reports

Certain conditions of Ecology's water quality certification and the Forest Service's 4(e) conditions require the licensee to file reports with other entities. These reports document compliance with requirements of this license and may have bearing on future actions. Each such report shall also be submitted to the Commission. These reports are

listed in the following table:

Forest Service 4(e) condition no.	**Ecology certification condition no.**	**Description**	**Due Date**
--	9.0(2)	Annual water quality report	Within 14 months of license issuance and annually thereafter
--	5.1(17); 11.0	Report describing the nature of an event that results in failure to comply with water quality standards, corrective actions taken, and planned steps taken to prevent a recurrence	Within five days of the event
--	5.1(17); 6.0, *spill and release response*, item 3	Report describing the nature of a spill event, corrective actions taken, and planned steps taken to prevent a recurrence	Within 14 days of the event
2 (A-LA 3)	5.2 (A-LA 3); 9.0(3) and (5)	Reports summarizing the results of biological response monitoring following implementation of Phases I and II of the Water Temperature Conditioning Plan	Within three years after Phase I temperature conditioning and three years after Phase II temperature conditioning
2 (A-LA 4)	5.2 (A-LA 4)	Report summarizing potential effects on terrestrial resources from implementation of the Whitewater Recreation Plan	Within six months of completing the first two whitewater boating events

Forest Service 4(e) condition no.	Ecology certification condition no.	Description	Due Date
2 (A-LA 8)	5.2 (A-LA 8)	Process flow effectiveness reports (see section 5.2 of the Process Flow Plan filed September 27, 2010)	Within ten years after license issuance and every ten years thereafter
2 (A-LA 9)	5.2 (A-LA 9)	Annual flow reports that specify proposed minimum flows to reach 3	No later June 15 of each water budget year

Each of the above reports shall include documentation of consultation with the National Marine Fisheries Service, Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee, as it may be revised in accordance with Appendix B, condition 2 (A-LA 1)); copies of comments and recommendations on the reports after they have been prepared and provided to the Aquatic Resource Committee; specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the reports; and, if the licensee does not adopt a recommendation, the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to project operations or facilities based on the information contained in the report and any other available information.

(c) Requirement to Notify Commission of Planned and Unplanned Deviations from License Requirements

Conditions 5.1(17) and 11.0 of Ecology's water quality certification allow the licensee to notify Ecology and temporarily modify project operations under certain conditions. The Commission shall be notified prior to implementing such modifications, if possible, or in the event of an emergency, as soon as possible, but no later than 10 days after each such incident.

(d) Requirement to File Amendment Applications.

Certain water quality conditions in Appendix A and Forest Service conditions in Appendix B contemplate unspecified long-term changes to project operations or facilities for the purpose of mitigating environmental effects. These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. These conditions are listed below.

Forest Service 4(e) condition no.	Washington Ecology certification condition	Modification
--	6.0, *Spill and Release Response*, item 3	Long-term corrective actions, monitoring protocols, and measures
--	10.0	Modifications to the approved water quality monitoring program
2 (A-LA 3)	5.2 (A-LA 3)	Updates to the Water Temperature Conditioning Plan
2 (A-LA 8)	5.2 (A-LA 8)	Updates to the Process Flow Plan

Updates to the Water Temperature Conditioning Plan and the Process Flow Plan shall include documentation of consultation with the Aquatic Resource Committee; copies of comments and recommendations on the updated plans after it has been prepared and provided to the Aquatic Resource Committee; and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the updated plans. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to the updated plans. Implementation of the updated plans shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plans, including any changes required by the Commission.

Article 402. *Marsh Creek Slide Monitoring and Modification Plan*. The Marsh Creek Slide Monitoring and Modification Plan as referenced by Appendix A, condition 5.2 (A-LA 2), and Appendix B, condition 2 (A-LA-2), is approved and shall be implemented with the following modifications:

(1) section 3.1 is modified to include a requirement that the licensee seine and block net the pool below the Marsh Creek rockslide to remove fish that are present and prevent fish from entering the pool during any blasting activity.

(2) section 5 is modified to include a requirement that the licensee file, within six months of the sixth-year anniversary date of the filing of the report required by section 5, an additional report that documents the results of the effectiveness of the initial rockslide modifications at improving fish passage, and includes any proposals and anticipated costs for additional modifications to improve fish passage at the Marsh Creek rockslide. The

report shall be prepared after consultation with the National Marine Fisheries Service, the Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee as it may be revised in accordance with Appendix B, condition 2 (A-LA 1)).

The licensee shall include with the report, documentation of consultation with the Aquatic Resource Committee, copies of comments and recommendations from the Aquatic Resource Committee on the completed report after it has been prepared and provided to the Aquatic Resource Committee, and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the report. The licensee shall allow a minimum of 30 days for the Aquatic Resource Committee to comment and to make recommendations before filing the report with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information.

The Commission reserves the right to require changes to proposed environmental measures or to require additional measures based on the results or recommendations in the report.

Article 403. *Powerhouse Flow Continuation*. The licensee shall file a report within 15 days of completion of the testing of the Pelton-turbine flow bypass system required by Appendix A, condition 5.2 (A-LA 5), documenting completion of the flow-continuation system testing. The licensee shall continue to maintain staff at the powerhouse during electrical storms until Commission approval to discontinue such practices has been obtained.

Article 404. *Side Channel Enhancement Plan*. The Side Channel Enhancement Plan required by Appendix A, condition 5.2 (A-LA 7), shall include the following additional provision: within 180 days of completing the side-channel reconnection measures, the licensee shall file a side channel enhancement report that (1) documents the results of the reconnection efforts; and (2) documents the linear footage of reconnected side channels and square footage of side-channel habitat provided at a flow of 300 cfs, as measured at the U.S. Geological Survey gage no. 12138160;

The report shall be developed after consulting with the National Marine Fisheries Service, the Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee, as it may be revised in accordance with Appendix B, condition 2 (A-LA 1)). The licensee shall allow a minimum of thirty days for the Aquatic Resource Committee to comment and make recommendations before filing the report with the Commission. The report shall contain documentation of consultation with the Aquatic Resource

Committee, copies of comments and recommendations on the completed report after it has been prepared and provided to the Aquatic Resource Committee, and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the report. The Commission reserves the right to require additional measures based on the results or recommendations in the report.

Article 405. *Ramping Rate Evaluation Plan*. Within 6 months of completing the side-channel enhancement projects required by Appendix A, condition 5.2 (A-LA 7), the licensee shall file, for Commission approval, a Ramping Rate Evaluation Plan. The plan shall include:

(1) the methods and schedule for conducting an evaluation to determine whether additional ramping rate restrictions are necessary to protect juvenile fish from stranding in the reconnected side channels required by Appendix A, condition 5.2 (A-LA 7); and

(2) a provision to file a ramping rate report within one year of completing the side channel enhancements, with any specific proposals for more restrictive ramping rates based on the outcome of the ramping rate evaluation. The ramping rate report shall include documentation of consultation with the National Marine Fisheries Service, the Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee, as it may be revised in accordance with Appendix B, condition 2 (A-LA 1)); copies of comments and recommendations on the completed report after it has been prepared and provided to the Aquatic Resource Committee; and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the report. The licensee shall allow a minimum of 30 days for the Aquatic Resource Committee to comment and to make recommendations before filing the report with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to project operations or facilities based on information contained in the report and any other available information.

The licensee shall include with the Ramping Rate Evaluation Plan, documentation of consultation with the Aquatic Resource Committee, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Aquatic Resource Committee, and specific descriptions of how the Aquatic Resource Committee's'comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information.

The Commission reserves the right to require changes to the plan. The licensee shall not begin implementing the plan until after the Commission approves it. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 406. *Spada Lake Water Management*. Upon license issuance, the licensee shall operate the project consistent with the Spada Lake reservoir rule curves as required by Appendix A, condition 5.2 (A-LA 14). The rule curves divide Spada Lake water elevations into five states that dictate water management and shift throughout the water year (July 1 through June 30). Water management under states 1, 2, 4 and 5 shall occur as described in Appendix A, condition 5.2 (A-LA 14). Water management under State 3, zone of discretionary operation, shall be as described below.

When Spada Lake is in State 3, subject to meeting the (1) City of Everettother conditions of this license, the licensee shall maintain a minimum impoundment water surface elevation in Spada Lake above 1,430 feet mean sea level (msl), as measured at U.S. Geological Survey gage no. 12137300, Spada Lake near Startup, Washington, between July 1 and August 15. Until the temperature conditioning structure required by Appendix A, condition 5.2 (A-LA 3), and Appendix B, condition 2 (A-LA 3) is installed and operational (from license issuance until the earlier of (a) two years after the date the District completes the Sultan River diversion dam's volitional fish passage modifications, described in A-LA 13 or (b) January 1, 2020), the licensee shall maintain a minimum impoundment water surface elevation in Spada Lake Reservoir at or above 1,420 feet msl from August 16 through September 15. After the temperature conditioning structure is installed and operational, the licensee shall maintain a minimum impoundment water surface elevation in Spada Lake above 1,415 feet msl from August 16 through September 15.

The minimum Spada Lake water surface elevations specified in the previous paragraph may be modified as a result of system emergencies, operating emergencies beyond the control of the licensee, and for short periods of time upon mutual agreement with the National Marine Fisheries Service, the Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee, as it may be revised in accordance with Appendix B, condition 2(A-LA 1)). System emergencies include emergency operations imposed on the licensee by the North American Electric Reliability Corporation or Bonneville Power Administration (such as Puget Sound Area Northern Initiative events and transmission limitations), abnormal deviations in the power market (such as was precipitated by the 2001 energy crisis), or major power plant outages in the Northwest Power Pool region that are beyond the control of the licensee. If the impoundment water surface elevation is modified as described above, the licensee shall notify the Aquatic Resource Committee and the Commission within two business days

after each such incident. The licensee shall document the modification in the annual operational compliance monitoring report filed with the Commission pursuant to Article 407, and describe the emergency that resulted in the modification of the water surface elevation.

Article 407. *Operation Compliance Monitoring Plan*. Within 90 days of license issuance, the licensee shall file with the Commission, for approval, an Operational Compliance Monitoring Plan. The plan at a minimum shall include:

(1) the methods and schedule for ensuring compliance with the 0.5-foot-per-hour downramping rate in the bypassed reach downstream of Culmback dam (reach 3) required by Appendix A, condition 5.2 (A-LA 5);

(2) a provision to ensure that the powerhouse gage, Sultan River diversion dam streamflow gage, and Spada Lake water surface elevation gage (U.S. Geological Survey gage nos. 12138160, 12137800, and 12137300, respectively) are operated and maintained to provide streamflow and lake level monitoring at no less than 15-minute intervals for the term of the license;

(3) a detailed description of the proposed streamflow gages that would be installed immediately upstream of the powerhouse and Sultan River diversion dam to monitor compliance with the process flows required by Appendix A, condition 5.2 (A-LA 8) and Appendix B, condition 2 (A-LA 8), including, at a minimum, the equipment that would be used, how the gages would be calibrated, whether the gages would be temporary or permanent, and the frequency at which stage discharge relationships would be verified;

(4) a detailed description of how the licensee will monitor minimum instream-flow releases in reach 3 during implementation of phase I and phase II of the Water Temperature Conditioning Plan, as referenced by Appendix A, condition 5.2 (A-LA 3), and Appendix B, condition 2 (A-LA 3);

(5) a description of how the licensee will monitor the amount to be deducted from the whitewater boating water budget for each whitewater event (discharge measured upstream of the Sultan River diversion dam, minus accretion between Culmback dam and the diversion dam), as set forth in the Whitewater Recreation Plan referenced by Appendix A, condition 5.2 (A-LA 4); Appendix B, condition 2 (A-LA 4); and Article 413.

(6) a provision to notify the Commission within ten days of any project-related flooding in the city of Sultan during a whitewater event as described in the Whitewater Recreation Plan modified by Article 412, and to file a report with the Commission within 30 days of the flooding event stating the reasons and any proposed corrective actions;

(7) a provision to notify the Commission within ten days of any deviations from the 550 cubic feet per second Chinook spawning flow ceiling required by Appendix A, condition 5.2 (A-LA 5); minimum instream flows required by Appendix A, condition 5.2 (A-LA 8) and Appendix B, condtion 5.2 (A-LA 8); and process flow releases required by Appendix A, condition 5.2 (A-LA 9), and Appendix B, condition 2 (A-LA 9), and to file a report with the Commission within 30 days of the deviation, stating the reasons for the deviation and proposed corrective actions, as appropriate;

(8) a provision to file an operation compliance monitoring report by November 1 of the first complete year following license issuance and continuing annually by November 1 for each year thereafter, that documents the following for the previous water year (July through June): (a) the dates, duration, and quantities of the process flow released in accordance with the Process Flow Plan required by Article 416; (b) Spada Lake daily water surface elevations; and (c) if deviations from the targeted State 3 water surface elevations occurred, the reasons for the deviations and any proposals for corrective actions to avoid future occurrences, as appropriate.

(9) a provision to include with the annual operation compliance monitoring report required by item (8), documentation of consultation with the National Marine Fisheries Service, the Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee, as it may be revised in accordance with Appendix B, condition 2 (A-LA 1)), copies of comments and recommendations on the completed report after it has been prepared and provided to the Aquatic Resource Committee, and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the report. The licensee shall allow a minimum of 30 days for the Aquatic Resource Committee to comment and to make recommendations before filing the report with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to project operations or facilities based on information contained in the report and any other available information.

The licensee shall include with the Operation Compliance Monitoring Plan, documentation of consultation with the members of the Aquatic Resource Committee, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Aquatic Resource Committee, and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the Aquatic Resource Committee to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 408. *Reservation of Authority to Prescribe Fishways*. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance, of such fishways as may be prescribed by the Secretaries of the Interior or Commerce pursuant to section 18 of the Federal Power Act.

Article 409. *Spada Lake Recreational Fishery Plan*. The Spada Lake Recreational Fishery Plan, filed on July 16, 2010 , is approved and shall be implemented with the following modifications:

(1) the operational requirements for Spada Lake described in section 3 are removed and Spada Lake levels shall be managed according to Article 406.

(2) the licensee shall file the recreational fishing brochure and any subsequent updates to the recreational fishing brochure described in section 4 concurrently with its posting on the licensee's website; and

(3) within 180 days of completing the gill net surveys, which are to be conducted starting in 2012 and once every five years thereafter in accordance with Section 4 of the plan, the licensee shall file with the Commission the gill net technical memorandum identified in Section 5 of the plan.

Article 410. *Fisheries and Habitat Monitoring Plan*. The Fisheries and Habitat Monitoring Plan, filed on September 2, 2010, as referenced by Appendix A, condition 5.2 (A-LA 17), and Appendix B, condition 5.2 (A-LA 17), is approved and shall be implemented with the following modifications:

(1) the annual report described in section 4.1 of the plan shall include (a) documentation of compliance with the monitoring and maintenance requirements of the side channel enhancement measures implemented pursuant to Appendix A, condition 5.2 (A-LA 7); (b) a description of any deviations from the 550-cfs Chinook salmon spawning flow ceiling required by Appendix A, condition 5.2 (A-LA 5); (c) a description of any documented dewatering of Chinook salmon redds during the September through January Chinook salmon spawning and fry emergence period; (d) a description of any proposed corrective actions if any flow-ceiling exceedances occur; and (e) documentation of consultation with the National Marine Fisheries Service, the Forest Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, Tulalip Tribes, Snohomish County, City of Everett, City of Sultan, and American Whitewater (Aquatic Resource Committee, as it may be revised in accordance

with Appendix B, condition 2 (A-LA 1)), including copies of comments and recommendations on the report after it has been prepared and provided to the Aquatic Resource Committee, and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the report. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information; and

(2) any plan update developed in accordance with Section 4.2 shall include documentation of consultation with the Aquatic Resource Committee; copies of comments and recommendations on the updated plan after it has been prepared and provided to the Aquatic Resource Committee; and specific descriptions of how the Aquatic Resource Committee's comments are accommodated by the plan. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to the plan. Implementation of the updated plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 411. *Marbled Murrelet Habitat Protection Plan*. The Marbled Murrelet Habitat Protection Plan, filed on April 14, 2011, is approved and shall be implemented with the following modifications:

Section 3.0, Monitoring and Reporting, shall include the following provision: The survey results and field notes of monitoring efforts for marbled murrelet shall be documented and sent to the U.S. Fish and Wildlife Service (FWS) in conjunction with preparation of the Terrestrial Resources Management Plan annual reports for any year that surveys are conducted or maps are updated.

Within 10 years of license issuance, and at least every 10 years thereafter, the licensee shall file for Commission approval an updated Marbled Murrelet Habitat Protection Plan to reflect any new information gathered from the surveys conducted over the previous 10 year period. The licensee shall develop the plan in consultation with the FWS and Washington Department of Fish and Wildlife (Washington DFW). The licensee shall include with the filing documentation of consultation with FWS and Washington DFW; copies of comments and recommendations on the plan after it has been prepared and provided to FWS and Washington DFW; and specific descriptions of how FWS's and Washington DFW's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for FWS and Washington DFW to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information. The Commission reserves the right to require changes to the plan. Implementation of the updated plan shall not begin until it is approved by the

Commission. Upon Commission approval, the licensee shall implement the updated plan, including any changes required by the Commission.

Article 412. *Whitewater Recreation Plan.* The Whitewater Recreation Plan, filed June 17, 2010, as referenced by Appendix A, condition 5.2 (A-LA 4) and Appendix B, condition 2 (A-LA 4)) is approved and shall be implemented with the following additional requirements:

(1) The licensee shall not provide any, and shall curtail any already-initiated, whitewater release if flooding in the city of Sultan would be likely to occur or be exacerbated should flows continue and such flows are under the control of the licensee.

(2) Within 6 months of license issuance, the licensee shall file with the Commission, for approval, an addendum to the plan detailing (a) how it will determine if providing the whitewater releases would be likely to cause flooding in the city of Sultan such that any scheduled flows could not be released as provided in item (1) above; (b) what criteria would be used to determine if any whitewater release is exacerbating flooding in the city of Sultan; (c) how it will monitor flows during whitewater events to determine if flow releases are exacerbating flooding; and (d) specific measures it would take to curtail any already-initiated whitewater release that is exacerbating flooding in the city of Sultan where such flows are under the control of the licensee. The addendum shall include a provision to notify the Commission within two days of any whitewater release that exacerbates flooding in the city of Sultan. [

(3) The licensee shall include the water level measurements taken during whitewater events at the confluence of the Sultan and Skykomish rivers and any curtailment of whitewater releases to prevent flooding in the annual report summarizing event monitoring data (Section 5.1 of the plan).

(4) The licensee shall count the number of whitewater boaters using scheduled and unscheduled events, as provided for in Section 4.1 of the plan, at a minimum at the following locations: (a) Sultan River diversion dam, (b) Powerhouse River Access Area, and (c) Trout Farm Road River Acess Area. The boater counts shall be included in the annual reports referenced in item (2).

(5) The licensee shall include the completed Whitewater Boating Water Budget Tracking Forms (Appendix 4 of the plan) with the whitewater recreation data reports that shall be compiled and filed every six years with the Commission (Section 5.1 of the plan).

The addendum to the plan required in item (2) above, shall be developed in consultation with the National Park Service, American Whitewater, Corps of Engineers, and the City of Sultan. The licensee shall include with the addendum, documentation of its consultation with the above entities, copies of comments and recommendations on the

addendum after it has been prepared and provided to the above entities, and specific descriptions of how the consulted entities' comments are accommodated by the addendum. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the addendum with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons based on project-specific information.

The Commission reserves the right to require changes to the Whitewater Recreation Plan.

Article 413. *Recreation Resources Management Plan*. The Recreation Resource Management Plan, filed on January 25, 2011, and consisting of pages 1 through 22, Appendix A, and Appendix B, is approved and shall be implemented with the following additions to section 5.3 (Reporting, Plan Review and Updates):

(1) The licensee shall provide the Licensed Hydropower Development Recreation Report (FERC Form 80) data to the National Park Service, the Forest Service, the Washington Department of Natural Resources, the Washington Recreation and Conservation Office, City of Everett, and American Whitewater prior to its filing with the Commission; and

(2) Concurrent with the filing of the Form 80 with the Commission, the licensee shall include documentation of any meeting with the entities above to discuss recreational use levels, associated project-related resource effects, recreation demand, and any recommendations to modify the plan.

The Commission reserves the right to require changes to the plan.

Article 414. *Historic Properties Management Plan*. The licensee shall implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission and the Washington State Historic Preservation Officer for Managing Historic Properties that may be Affected by Issuance of a License to the Public Utility District No. 1 of Snohomish County, for the Continued Operation of the Henry M. Jackson Hydroelectric Project, Washington (FERC No. 2157-188)," executed on January 10, 2010, including but not limited to the Historic Properties Management Plan (HPMP) for the project. In the event that the Programmatic Agreement is terminated, the licensee shall continue to implement the provisions of its approved HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license.

Article 415. *Water Temperature Conditioning Plan*. The Water Temperature Conditioning Plan filed on July 16, 2010, is approved and shall be implemented.

Article 416. *Process Flow Plan*. The Process Flow Plan filed on September 27, 2010, is approved and shall be implemented.

Article 417. *Use and Occupancy*. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies, for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed. If no conveyance was made, the licensee does not have to inform the Commission.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary

(K) The licensee shall serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(L) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2006), and section 385.713 of the

commission's regulations, 18 C.F.R. § 385.713 (2011). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Jeff C. Wright
Director
Office of Energy Projects

Form L-1
(October, 1975)

**FEDERAL ENERGY REGULATORY COMMISSION
TERMS AND CONDITIONS OF LICENSE
FOR CONSTRUCTED MAJOR PROJECT AFFECTING
LANDS OF THE UNITED STATES**

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the

region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall

make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other

projects or power systems and in such manner as the Commission any direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the

relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary

of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Timber on lands of the United State cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 22. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 23. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 24. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 25. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 26. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 27. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 28. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 29. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 3l, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, et seq.), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference shall be determined by the Commission after notice ad opportunity for hearing.

Article 30. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower

facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 31. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 32. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Water Quality Certificate Conditions for the Jackson Hydroelectric Project No. 2157 issued by Washington Department of Ecology, Order No. 7918, on October 18, 2010)

5.0 401 CERTIFICATION ORDER CONDITIONS

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will comply with applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC and Chapter 173-201A WAC, including WAC 173-20IA-300 through WAC 173-20IA- 330, Section 401 water quality certification is granted to SNOPUD for the Henry M. Jackson Hydroelectric Project (FERC No. 2157) subject to the following conditions.

5.1 GENERAL CONDITIONS

Certification of this proposal does not authorize the Licensee to exceed applicable state water quality standards approved by the Environmental Protection Agency (currently codified in Chapter 173-201A WAC), ground water quality standards (currently codified in Chapter 173-200 WAC) and sediment quality standards (currently codified in Chapter 173-204 WAC), and other appropriate requirements of state law. Furthermore, nothing in this Order absolves the Licensee from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments occurring as a result of activities associated with Project operations and FERC license conditions.

1) In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48), or changes in or amendments to the Clean Water Act, such provisions, standards, criteria, or requirements shall apply to the Jackson Project and any attendant agreements, orders, or permits. Ecology will notify SNOPUD through an Administrative Order of any such changes or amendments applicable to Jackson Project.
2) When a construction project meets the coverage requirements of the National Pollution Discharge Elimination System (NPDES) permit and State Waste Discharge General permit for stormwater discharges associated with construction activity, SNOPUD shall either, at Ecology's discretion, apply for the general permit and comply with the terms and conditions of the permit or apply for and comply with the terms of an individual NPDES permit.

3) Road construction through forest lands shall meet the requirements for water quality protection in the State Forest Practice Rules -WAC 222-24-020 road location and design, WAC 222-24-030 road construction, and WAC 222-24-040 water crossing structures. The requirements marked by an asterisk in the rules apply.

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

5) SNOPUD shall obtain Ecology review and approval before undertaking any change to the Jackson Project or Jackson Project operations that might significantly and adversely affect the water quality or compliance with any applicable water quality standard (including designated uses) or other appropriate requirement of state law.

6) The Washington State Department of Fish and Wildlife (WDFW) require a Hydraulic Project Approval (HPA) (under 75.20 RCW) for work in waters of the state. SNOPUD shall obtain HPA coverage as required by WDFW for any in-water construction project.

7) Ecology retains the right, by further Order, to modify schedules or deadlines provided under this Order or provisions it incorporates.

8) Ecology retains the right, by further Order, to amend this Order if it determines that its provisions are no longer adequate to provide reasonable assurance of compliance with applicable water quality standards or other appropriate requirements of state law that are related to protection of water quality or aquatic resources. Amendments of this certification shall take effect immediately upon issuance, unless otherwise provided in the order of amendment, and shall be appealable to the Pollution Control Hearings Board pursuant to RCW 43.21 B. Ecology shall transmit such amending orders to FERC to update FERC's records as to the current certification conditions.

9) If a conflict or inconsistency arises between this Order and the Settlement Agreement for Henry M. Jackson Project, or any part thereof, the terms of this Order shall govern.

10) This Order does not exempt, and is provisional upon, compliance with other statutes and codes administered by federal, state, and local agencies, including the state's Coastal Zone Management Act.

11) This Order addresses work associated with the Jackson Project, including Jackson Project operation and related construction. Any additional work not specified in this certification that may impact water quality will require attainment of any and all applicable permits and/or certifications at the appropriate time. SNOPUD shall consult with Ecology to determine whether any such additional work triggers the need of additional permits or a separate Section 401 Certification. If a project would result in a new discharge or alteration to an existing discharge that is not specifically addressed in this Order, it will in most cases require modification of this Order or a new Section 401 Certification, depending on the circumstance.

12) Ecology reserves the right to issue orders, assess or seek penalties, and to initiate legal actions in any court or forum of competent jurisdiction for the purposes of enforcing the requirements of this Order. Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

13) The conditions of this Order shall not be construed to prevent 01" prohibit SNOPUD from either voluntarily or in response to legal requirements imposed by a court, the FERC, or any other body with competent jurisdiction, taking actions which will provide a greater level of protection, mitigation, or enhancement of water quality or of existing Or designated uses.

14) Copies of this Order and associated permits, licenses, approvals, and other documents shall be kept on the Jackson Project site and made readily available for reference by SNOPUD, its contractors and consultants, and by Ecology.

15) SNOPUD shall allow Ecology access to inspect the Jackson Project and Jackson Project records required by this Order for the purpose of monitoring compliance with its conditions. Access shall occur after reasonable notice, except in emergency circumstances.

16) SNOPUD shall, upon request by Ecology, fully respond to all reasonable requests for materials to assist Ecology in making determinations under this Order and any resulting rulemaking or other process.

17) Any work that is out of compliance with the provisions of this Order, or project operation conditions that result in distressed, dying or dead fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, or violation of turbidity criteria is prohibited. If these conditions occur, SNOPUD must immediately take the following actions:

a) Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance, correct the problem and, if applicable, immediately repeat sampling and analysis of any noncompliance.
b) Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.

c) Notify Ecology within 24 hours of the failure to comply with water quality standards and submit a detailed written report to Ecology within five days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

d) Oil or chemical spill events must be reported immediately to Ecology's 24-Hour Spill Response at 425-649-7000 or 1-800-258-5990 and submit a detailed written report to Ecology within two weeks of the incident that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

e) Observed violations at the Jackson Project must be highlighted in the annual monitoring report.

Compliance with these requirements does not relieve SNOPUD from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.

5.2 *SPECIFIC CONDITIONS-INSTREAM FLOW AND FLOW-HABITAT*

SNOPUD shall implement and comply with flows and habitat-related proposed license a1ticles in the Sultan River as described in the October 9, 2009, Settlement Agreement. SNOPUD shall implement and comply with the following Settlement Agreement License Articles (A-LA):

6.2.la. A-LA-2: Marsh Creek Slide Modification and Monitoring;
6.2.1b. A-LA-3: Temperature Conditioning in Reach 3, including phases one and two;
6.2.lc. A-LA-4: Whitewater Boating Flows;
6.2.1d. A-LA-5: Downramping Rate Conditions and schedules
6.2.le. A-LA-6: Large Woody Debris installation and maintenance
6.2.1f. A-LA-7: Side Channel project including enhancement and maintenance
6.2.lg A-LA-8: Process Flow Regime in components I through 5 including flows for channel maintenance, channel forming, flushing, upstream migration, and outmigration;

6.2.lh. A-LA-9: Minimum Flows in reaches one, two and three;
6.2.1i. A-LA-12: Fish Habitat Enhancement Plan;
6.2.1j. A-LA-13: Diversion Dam Volitional Passage; and
6.2.1k. A-LA-14: Reservoir Operations
6.2.11. A-LA-15: Adaptive Management Plan
6.2.lm. A-LA-17: Fisheries and Habitat Monitoring Plan

Copies of the above listed articles are attached in Appendix B and incorporated by reference into this Order.

5.3 *SPECIFIC CONDITIONS - WATER QUALITY PARAMETERS*

Jackson Project shall not cause any exceedance of water quality standards set forth in Chapter 173-20IA-200(I)WAC in any waters of the state, including without limitation the Jackson Project waterbodies.

5.3.1 TURBIDITY

1) Jackson Project actions do not appear to have any significant effect on turbidity. Tributaries to Spada Lake are maintained in a fairly pristine condition with little or no development. SNOPUD must manage erosion from roads within the Jackson Project boundary. Principal source of turbidity entering Spada Lake is highly turbid inflows from the tributaries during winter storms. Other potential sources, such as wave-induced lake shoreline 01' bank erosion, are non-measureable in comparison. Spada Lake likely acts as a reservoir that store turbid water and release it at a lower magnitude and at a slower rate. Variation in turbidity generally corresponded to seasonal changes in precipitation, the occurrence of relatively large rainfall events, and flow conditions.

2) Turbidity Standard Exceedences: Any exceedance shall be explained in the Annual Water Quality Report required by Section 9.0 of this Order. SNOPUD shall not be held responsible for turbidity standard exceedences ifthe elevated turbidity is caused by a significant storm 01' situation not Jackson Project related. In such an instance Ecology may request an assessment of the potential causes of the turbidity increase. This assessment may consider the impacts of recent flows through the dams, precipitation, recent construction, and reservoir elevations.

5.3.2 TOTAL DISSOLVED GAS

1) TDG measurements taken during the water quality studies were less than 110 percent saturation, indicating that TDG supersaturation (i.e., TDG saturation greater than 110 percent) from potential Powerhouse turbine ail' entrainment is not a concern.

2) TDG Standard Exceedences: Any exceedance shall be explained in the Annual Water Quality Report required by Section 9.0 of this Order. All spill releases shall also be detailed in the monitoring report.

3) TDG Exceedences Associated with Spills for Minimum Instream Flow Requirements or Spills Requested by Other Government Agencies: To remain in compliance with the minimum instream flow provisions of this certification, releases of water by means other than the penstock and powerhouse may occasionally be required during powerhouse maintenance, inspection, or testing outages. These alternative releases will most likely result in TDG levels greater than 110% in the tailrace. Ecology has determined that no or low flow would harm biota more than the short-term elevated TDG levels. However, SNOPUD is required to apply in advance for such short-term modifications in writing to Ecology and WDFW.

5.3.3 TEMPERATURE

1) Water temperatures below the Sultan River Diversion Dam (Reaches 1 and 2) are influenced by the amount and depth of water released at Culmback dam. The 20 cfs released from Culmback Dam under current operating conditions originates from a deepwater valve located at the base of the dam. The water at this depth remains a relatively constant 3 to 6°C year-round. This is significantly colder water than found in a natural system from April through October. As a result, summer water temperatures at the upper end of Reach 3 are up to 4-6°C colder than the natural inflow into Spada Lake.

As a condition of this 401 certification, SNOPUD shall implement and comply with October 9, 2009 Settlement Agreement Proposed A-LA 3, Temperature Conditioning in Reach 3. A copy of this Proposed License Article is attached in Appendix B.

As explained in the joint explanatory statement for the October 9, 2009 Settlement Agreement, proposed A-LA 3 requires that water released from Culmback Dam must be conditioned to provide a seasonally appropriate water temperature regime that would improve aquatic habitat conditions in Reach 3 of the Sultan River through the implementation of a Water Temperature Conditioning Plan ("WTC Plan"). A-LA 3 requires that SNOPUD implement the program within the constraints of the Jackson Project's existing infrastructure (i.e. the 10-inch cone valve, the hydro unit, and the 16-inch auxiliary release line) and monitor water temperatures in Reach 3 annually for the term of the License.

A-LA 3 requires SNOPUD to install and operate a new temperature conditioning structure at Culmback Dam by 2020, or within 2 years after the date SNOPUD completes the in Diversion Dam's volitional fish passage modifications. All of the flow components for this structure, except for the valves, shall have a hydraulic capacity to allow SNOPUD to provide no less than 165 cfs (at Spada Lake elevation of 1430 feet msl) of temperature-conditioned water immediately below Culmback Dam. This capacity may allow for higher spawning flows in Reach 3 after the expiration of the license. When the reservoir is above 1380 feet msl, this structure will allow SNOPUD to temperature condition the flows released from Culmback Dam pursuant to the minimum flow regime. The temperature conditioning program shall not contribute to exceedance of state numeric water quality criteria.

In addition to annual temperature monitoring, SNOPUD is required to monitor the biological response of salmon ids, macro invertebrates and other aquatic resources to the temperature conditioning. This biological monitoring must begin before the new License period by conducting surveys to establish baseline population and community characteristics for periphyton, benthic macroinvertebrates, and resident fish. The monitoring program must include a spatial (two sites) assessment of baseline resource conditions and conditions after the first year and subsequent years at a sampling interval determined by the ARC (Aquatic Resource Committee). Surveys during the first and subsequent years of the temperature conditioning program will be compared to baseline data.

The installation of a new temperature control structure at Culmback Dam will improve the SNOPUD's ability to attain appropriate water temperature targets below Culmback Dam using lower reservoir surface elevations compared to what could be achieved using the existing infrastructure. The biological response monitoring (included in A-LA 3, Settlement Agreement) will be used to help verify that this measure is meeting biological goals and, if necessary, to adaptively adjust temperatures to meet its biological goals.

2) A-LA 3 requires that SNOPUD implement the temperature conditioning program in the Sultan River. The program's objective is to provide a seasonally appropriate water temperature regime to improve conditions for salmonids and other aquatic resources (including fish and macro invertebrates) in Reach 3 (RM 9.7 to 16.1) of the Sultan River. Conditioning of water temperature in Reach 3 is expected to result in a more normative water temperature regime (similar to the temperature regimes in Reaches 1 and 2) that will increase macro invertebrate production, improve fish growth, fish distribution and population dynamics, and facilitate fish survival in Reach 3.

3) Temperature Standards Exceedences: Any exceedance shall be explained in the Annual Water Quality Report required by Section 9.0 of this Order.

5.3.4 DISSOLVED OXYGEN

1) DO measurements at monitoring locations above Spada Lake and below Culmback dam were in general above 9.5 mg/L. Low DO values during months of June, September, and October 2007 were accompanied by unusually warm ail' temperatures and lower-than-normal flows. Spada Lake is classified as a lake, so the Core Summer Salmonid DO criterion does not apply. Lake DO criteria require that human actions shall not cause more than 0.2 mg/L reduction.

2) DO Standards Exceedences: Any exceedance shall be explained in the Annual Water Quality Report required by Section 9.0 of this Order.

5.3.5 pH

1) pH values obtained during water quality studies indicate that tributaries above Spada Lake are circumneutral to slightly acidic. Such conditions are common in western Cascades streams. pH and alkalinity in the lake reflect conditions of the inflowing tributaries. Deeper depths generally had lower pH. pH and alkalinity levels in Sultan River above the Diversion Dam and above the Powerhouse were consistently slightly higher than in the upstream tributaries and Spada Lake. Regardless, the conditions are circumneutral to slightly acidic with low buffering capacity.

2) pH Standards Exceedences: Any exceedance shall be explained in the Annual Water Quality Report required by Section 9.0 of this Order.\

5.3.6 FECAL COLIFORM

Jackson Project actions do not appeal' to have any significant effect on fecal coliform. The geometric means of the detected values of fecal coliform bacteria obtained during water quality study were less than the state standard (WAC 173-201A-200). Therefore, the water quality standard for fecal coliform was met in all samples taken.

6.0 CONTAMINANT SPILL AND RELEASE PREVENTION AND CONTROL

[In the context of this section, "spills" will refer to contaminant spills as opposed to the release of water from the Jackson Project.]

No oil, fuel, or chemicals shall be discharged into state waters, or' onto land with a potential for entry into state waters as prohibited by Chapter 90.56 RCW. A Spill Prevention, Containment, and Countermeasure (SPCC) Plan must be prepared that covers, as applicable within the Clean Water Act, any equipment to be used at the site, including the powerhouse and any equipment associated with the powerhouse, that holds 01' contains oil, fuel, 01' chemicals that are potentially detrimental to water quality and the biota. The plan must be kept on site, in the possession of the person in charge at all times. The plan shall be submitted to Ecology for approval within one (1) year of license renewal. The plan must include, at a minimum, the following BMPs and spill response requirements.

Best Management Practices:

1) Care must be taken to prevent any petroleum products, paint, chemicals, or other harmful materials from entering waters of the state.

2) Visible floating oils released from construction 01' Jackson Project operation shall be immediately contained and removed from the water.

3) All oil, fuel or chemical storage tanks shall be contained and located on impervious surfaces so as to prevent spills from escaping to surface waters or ground waters of the state.

4) 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 state waters. Refueling of equipment on land shall occur where there is no potential of spilling fuel into rivers, creeks, wetlands, or other waters of the state. Equipment that requires refueling in-water shall be maintained and operated to prevent any visible sheen from petroleum products from appearing on the water. Proper security shall be maintained to prevent vandalism.

5) Oil & grease usage should be regularly monitored. Observation of significant increase in usage should trigger an investigation for leaks, followed by any required maintenance 01' corrective action.

6) No emulsifiers or dispersants are to be used in waters of the state without prior approval from the Department of Ecology, Northwest Regional Office.

7) Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall be contained for proper disposal, and shall not be discharged into state waters.

Spill and Release Response:

1) In the event of a discharge or release 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.

2) Samples shall be collected and analyzed to assess the extent of the spill and to assure all contaminants have been thoroughly removed.

3) Spills into state waters, spills onto land with a potential for entry into state waters, or other significant water quality impacts, shall be reported immediately or no later than 24 hours after discovery to the Department of Ecology, Northwest Regional Office at 425-649-7000 (24-hour phone number). SNOPUD shall provide a written follow-up report to Ecology within two (2) weeks of the incident stating what occurred, whether the incident was due to natural events or human-related activities, SNOPUD's response, a plan detailing long-term corrective actions and monitoring protocols if needed, any measures SNOPUD proposes to reduce future similar occurrences, results of any samples taken, and any additional pertinent information.

4) Compliance with this condition does not relieve SNOPUD from responsibility to maintain continuous compliance with terms and conditions of this certification or resulting liability from further failure to comply. Additional BMPs are listed in Appendix E of this certification; Ecology recommends that all applicable BMPs in Appendix E are included in the SPCC Plan.

7.0 CONSTRUCTION PROJECTS AND HABITAT MODIFICATIONS

The following applies to all in-water or near-water work related to the Jackson Project that can impact surface- or ground-water quality. This includes, but is not limited to, construction and maintenance of, or emergencies from, any of the following: fish collection structures, generation turbines, penstocks, hatcheries, transportation facilities, portable toilets, boat ramps, access roads, transmission corridors, structures, gravel augmentation projects, and staging areas for all Jackson Project related activities.

If water quality exceedences are predicted as being unavoidable, a short-term modification must be applied for in writing to Ecology and WDFW at least three months prior to project initiation. If any project has a long-term impact on a regulated water quality parameter, characterization monitoring must be performed for the impacted parameter(s), and a monitoring plan must be outlined in the Water Quality Protection Plan discussed below.

Water Quality Protection Plan (WQPP) for Construction Projects

A Water Quality Protection Plan (WQPP) shall be prepared, and followed, for all Jackson Project related construction, maintenance and repair work that is in- or near-water that has the potential to impact surface- and/or groundwater quality. The plan shall follow the Guidelines for Preparing Quality Assurance Project Plans (QAPP) for Environmental Studies (July 2004 Ecology Publication Number 04-03-030) or its successor.

The WQPP shall contain, at a minimum, a list of water quality parameter(s) to be monitored, a map of sampling locations, and descriptions of the purpose of the monitoring, sampling frequency, sample type or number of samples, sampling procedures and equipment, analytical methods, quality control procedures, data handling and data assessment procedures, and reporting protocols. The WQPP shall include procedures for monitoring water quality and the actions to implement if a water quality exceedance were to occur, including procedures for reporting any water quality violations to Ecology. The WQPP shall include all water quality protection measures consistent with the HPA for the Jackson Project and control measures to prevent contaminants from entering surface water and groundwater. The WQPP shall include, but not be limited to, the following elements:

1) Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP shall specify the Best Management Practices (BMPs) and other control measures to prevent pollutants from entering the Jackson Project's surface water and groundwater. The SWPPP shall address the pollution control measures for SNOPUD's activities that could lead to the discharge of stormwater or other contaminated water from upland areas. The SWPPP should also specify the management of chemicals, hazardous materials and petroleum (spill prevention and containment procedures), including refueling procedures, the measures to take in the event of a spill and reporting and training requirements. The SWPP shall also specify water quality monitoring protocols and notification requirements.

2) In-Water-Work Protection Plan

The In-Water-Work Plan shall be consistent with the SWPPP and shall specifically address the BMPs and other control measures for SNOPUD activities that require work within surface waters. In addition to construction activities, this work includes, but is not limited to, the application of herbicides, pesticides, fungicides, disinfectants, and lake fertilization. The plan shall address water quality monitoring provisions for all in-water work, including monitoring outside

the area that could be influenced by the work, and at the point of compliance throughout the Jackson Project life.

A copy of the WQPP shall be in the possession of the on-site construction manager, and available for review by Ecology staff, whenever construction work is under way. BMPs shall be consistent with *Stormwater Management Manual for Western Washington* (most recent edition) or another stormwater management guidance documents or manuals which provide an equivalent level of pollution prevention and are approved by Ecology. WQPPs for construction work should include, at a minimum, the following BMPs:

1) All reasonable measures shall be taken to minimize the impact of any project on waters of the state. Water quality constituents of particular concern are turbidity, TDG, suspended sediment, oil and grease, and pH. BMPs shall be implemented to control erosion and sedimentation, to assure proper use of chemicals, to prevent and control oil and chemical spills, and to properly dispose of surplus construction supplies and other solid wastes.

2) All necessary measures shall be taken to minimize the disturbance of existing riparian, wetland or upland vegetation.

3) All equipment shall be placed so that it cannot accidentally enter a waterway 01' cause water quality degradation to state waters.

4) Retention areas or swales shall be used to prevent discharging of water from construction areas.

5) SNOPUD shall ensure that any fill materials placed for habitat improvements in any waters of the state do not, by reference to applicable standards, contain toxic materials in toxic amounts.

6) All construction debris must be properly disposed of on land so that the debris cannot enter a waterway or cause water quality degradation to state waters.

8.0 HERBICIDE PESTICIDE FERTILIZER APPLICATIONS

Prior to the use of herbicides, pesticides, fungicides, disinfectants, fertilizers, or algaecides in or adjacent to waters of the state, coverage under a NPDES Aquatic Pesticides Permit shall be obtained, and conformance with any other applicable state requirement such as SEPA, shall be attained.

In addition, BMPs and other control measures for the application of herbicides, pesticides, fungicides, disinfectants, fertilizers, or algaecides must be addressed in

the In-Water-Work Protection Plan (Section 7.0). An appropriate water quality monitoring plan shall be developed prior to the application and implemented for all related work. Prior to the use of pesticides adjacent to waters of the state, SNOPUD shall follow BMPs to avoid the entry of such materials into waters of the state. Applicable BMPs include, but are not limited to, such actions as hand application and avoiding drift of materials into the water.

9.0 MONITORING AND REPORTING REQUIREMENTS

SNOPUD must monitor the Jackson Project in accordance with the proposed license articles as described in the October 9, 2009 Settlement Agreement.

1) Water Quality Monitoring Plan

Water quality shall be monitored as detailed in the Water Quality Monitoring Plan to be prepared by SNOPUD within six (6) months of license issuance and approved by Ecology. The intent of this monitoring program is to assess the water quality impact of the overall Jackson Project. Water Quality Monitoring Plan shall document how SNOPUD will implement program to ensure compliance with Washington State water quality standards (as codified in WAC 173-20IA) in the Sultan River. The plan shall follow the Guidelines for Preparing Quality Assurance Project Plans (QAPP) for Environmental Studies (July 2004 Ecology Publication Number 04-03-030) or its successor.

2) Annual Water Quality Report

Water quality data shall be summarized and reported in a format approved by Ecology and submitted annually. The report shall include sample dates, times, locations, and results. Any violations of state water quality standards shall be highlighted. The report shall be submitted within 14 months of License issuance and annually thereafter. Data reports shall be submitted to the hydropower certification manager at the Department of Ecology, Water Quality Program, Northwest Regional Office.

3) Water Temperature Conditioning (WTC) Plan

As a condition of this 401 certification, SNOPUD shall implement and comply with Settlement Agreement Proposed A-LA 3, Temperature Conditioning in Reach 3. A copy of this Proposed License Article is attached as Appendix B. A-LA 3 requires that within 180 days of issuance of the FERC License, SNOPUD shall file with the Commission, for approval, a Water Temperature Conditioning Plan (WTC Plan). This WTC Plan shall document how SNOPUD shall implement a program to condition the temperature of waters released at Culmback Dam.

SNOPUD shall develop the WTC Plan in consultation with the ARC. SNOPUD shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the WTC Plan to the Commission. When filing the WTC Plan with the Commission, SNOPUD shall include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by SNOPUD's plan. If SNOPUD does not adopt a recommendation, the filing shall include the SNOPUD's reasons based upon Jackson Project specific information.

As described in A-LA 3The WTC Plan shall include:

(a) The preliminary operation plan for the conditioning of water released from Culmback Dam pursuant to the A-LA 9 minimum flow schedule to achieve temperature conditioning performance standards in Reach 3 during both Phase One and Phase Two.

(b) The method and schedule for, and limitations upon, temperature conditioning of water releases;

(c) the method, locations, and schedule for monitoring water temperature within Reach 3 and the response of aquatic resources (including fish and macroinvertebrates) to water temperature conditioning.

(d) The method and schedule for adjusting the water temperature release schedule based upon temperature monitoring and response of the aquatic resources.

(e) The conceptual design drawings of the SNOPUD's proposed alternatives for the Phase Two Structure.

(f) A preliminary operation and maintenance plan for the proposed alternatives for the Phase Two Structure.

(g) A schedule for selection, design, and construction of the Phase Two Structure.

(h) The temperature conditioning program annual reporting and ARC consultation requirements.

Upon FERC approval, SNOPUD shall implement the WTC Plan.

4) Water Quality Protection Plan (WQPP)

WQPP shall be submitted to Ecology for review at least two (2) months prior to construction work initiation and all the subsequent modification must be submitted to Ecology at least thirty (30) days before implementation. A copy of the WQPP shall be in the possession of the on-site construction manager, and the plan shall be made available for review by Ecology staff, upon request. Water quality monitoring must be conducted per the WQPP. Results of water quality sampling, as determined by the WQPP, shall be submitted to Ecology on a monthly basis during construction.

5) Water Temperature Conditioning Evaluation and Performance Standards

As a condition of this 401 certification, SNOPUD shall implement and comply with Settlement Agreement Proposed A-LA 3, Temperature Conditioning in Reach 3. A copy of this Proposed License Article is attached at Appendix B.

6) Instream Flow Monitoring

As a condition of this 401 certification, SNOPUD shall implement and comply with Settlement Agreement proposed license articles provision requiring monitoring of instream flow. Copies of these Proposed License Articles are attached as Appendix B.

10.0 MODIFICATIONS TO MONITORING

Modifications to the monitoring program can be requested by submitting to Ecology reasons for the modifications along with a modified Water Quality Monitoring Plan. Written approval must be received by Ecology before the modified plan can be implemented.

A more rigorous water quality sampling program for the listed parameters or additional parameters may be required by Ecology, if necessary, to protect water quality in the future based on monitoring results, regulatory changes, changes in Jackson Project operations, requirements of TMDLs, or to otherwise provide reasonable assurance of compliance with state water quality standards.

11.0 WATER QUALITY CRITERIA VIOLATIONS

Any work that is out of compliance with the provisions of this certification, or Jackson Project related conditions that result in distressed, dying or dead 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. If these conditions occur, the applicant shall immediately take the following actions:

a) Cease operations at the location of the violation to the extent such operations may be causing or contributing to the problem.

b) Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.

c) Observed violations of flow or observation of a sheen from petroleum products or of dying fish shall be reported to Ecology Northwest Regional Office immediately or no later than 24 hours. SNOPUD shall provide a written follow-up report to Ecology within five days of the incident stating what occurred, whether the incident was due to natural events or human-related activities, SNOPUD' s response, any measures SNOPUD proposes to reduce future similar occurrences, results of any samples taken, and any additional pertinent information.

d) All other observed water quality violations shall be highlighted in the annual water quality report (see Section 9.0).

Compliance with these requirements does not relieve SNOPUD from the responsibility to maintain continuous compliance with the terms and conditions of this certification or the resulting liability from failure to comply.

12.0 INSPECTIONS AND ADMINISTRATION

SNOPUD shall allow Ecology such access as necessary to inspect the Jackson Project operations, Jackson Project area, and Jackson Project records required by this certification in order to monitor compliance with the conditions of this certification. Copies of this certification and associated permits, licenses, approvals, and other documents shall be kept on site and made readily available for reference by SNOPUD staff, its contractors and consultants, and by Ecology and WDFW.

13.0 ANTI-DEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water body are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-20IA-070.

14.0 FAILURE TO COMPLY WITH THIS ORDER

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

15.0 YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.2iB RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.00I (2).

To appeal you must do the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this Order on Ecology, in paper form, by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

APPENDIX B

Conditions filed by the U.S. Forest Service on October 19, 2009, pursuant to section 4(e) of the Federal Power Act, for the new license for Project No. 2157.

I. GENERAL (Standard Form L-1)

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 Mt. Baker-Snoqualmie 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 National Forest System lands shall also be included in any license issued for the Henry M. Jackson Hydroelectric Project (Project).

The USDA Forest Service reserves the authority to add to, delete from, or modify the preliminary terms and conditions contained herein in the event that the licensee, the USDA Forest Service or other Parties withdraw from the Settlement Agreement under the procedures identified in Section 6 of the Settlement Agreement prior to the Commissions issuance of a new license for the Project.

II. USDA FOREST SERVICE TERMS AND CONDITIONS

Condition 1 – Reservation of Authority in the Event the Settlement Agreement is Materially Modified or not accepted by the Commission

USDA Forest Service preliminary terms and conditions are premised on two requirements:

1. The Commission's acceptance and incorporation of the Settlement Agreement license articles without material modification into the new Project license.
2. The licensee's implementation of its obligations in accordance with the Settlement Agreement Appendix 4.

In the event either of these requirements are not met, the USDA Forest Service reserves the authority to supplement or modify these terms and conditions at a later time.

Condition 2 – Implementation of Settlement Agreement License

The licensee shall implement Settlement Agreement License Articles:

A-LA 1: Aquatic Resources Committee
A-LA-3: Temperature Conditioning in Reach 3
A-LA-4: Whitewater Boating Flows
A-LA 6: Large Woody Debris (LWD)
A-LA 8: Process Flow Regime
A-LA 9: Minimum Flows
A-LA 12: Fish Habitat Enhancement Plan
A-LA 15: Adaptive Management Plan
A-LA 17: Fisheries and Habitat Monitoring Plan
C-LA-1: Historic Properties Management Plan
R-LA-1: Recreation Resources Management Plan
T-LA-1: Terrestrial Resources Management Plan
T-LA 2: Noxious Weed Plan
T-LA 3: Marbled Murrelet Habitat Protection Plan

Condition 3 – Implementation of Activities on NFS lands

The Licensee shall not commence implementation of habitat or ground-disturbing activities on National Forest System (NFS) lands until the USDA Forest Service has approved site-specific project designs and issued a notice to proceed.

Additional NFS Lands. If long term occupancy of NFS lands is required for Project related purposes and such occupancy is not authorized by including such lands within the FERC Project boundary, the Licensee shall obtain a special-use authorization for occupancy and use of such NFS lands from the USDA Forest Service. Before conducting any habitat or ground-disturbing activities on such NFS lands, the Licensee shall obtain from the USDA Forest Service and file with the Commission a special-use authorization for occupancy and use of NFS 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 NFS. 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 NFS. Should additional NFS lands be needed for this Project over the License term and such lands not included within the FERC Project Boundary, the special-use authorization shall be amended to include any additional NFS lands.

Approval of Changes on NFS 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 prior to making changes in the location of any constructed Project features or facilities on NFS lands, or in the uses of Project land and waters on NFS lands, or any departure from the requirements of any approved exhibits for Project facilities located on NFS lands 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 NFS Lands. In the event that portions of the Project area are under federal authorization for other activities and permitted uses, the Licensee shall consult with the USDA Forest Service to coordinate such activity with authorized uses before starting any activity on NFS land that the USDA Forest Service determines may affect another authorized activity.

Site-Specific Plans. The Licensee shall prepare site-specific plans subject to review and approval by the USDA Forest Service for habitat and ground-disturbing activities on NFS lands required by the License, including activities contained within resource management plans required by the License prepared subsequent to License issuance. The Licensee shall prepare site-specific plans for activities one year in advance of implementation dates required by the License or as otherwise agreed to by USDA Forest Service and the License.

Site-specific plans shall include:

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

A description of the USDA Forest Service land management area designation for the location of the proposed activity and applicable standards and guidelines.

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.

Draft biological evaluations or assessments including survey data as required by regulations applicable to habitat or ground-disturbing activities on NFS lands in existence at the time the plan is prepared.

An environmental analysis of the proposed action consistent with the USDA Forest Service policy and regulations for implementation of the National Environmental Policy Act (NEPA) in existence at the time the plan is prepared for FERC Licensed projects on NFS lands. This analysis may incorporate as appropriate any environmental analysis completed by the Commission.

Surveys and Land Corners: The licensee shall avoid disturbance to all public land survey monuments, private property corners, and forest boundary markers. In the event that any such land markers or monuments are destroyed by an act or omission of the licensee, in connection with the use and/or occupancy authorized by the license, depending on the type of monument destroyed, the licensee shall reestablish or reference same in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the County Surveyor, or (3) the specifications of the USDA Forest Service. Further, the licensee shall ensure that any such official survey records affected are amended as provided for by law.

Cost Reimbursement. Omitted.

APPENDIX C

U.S. Department of Commerce, National Marine Fisheries Service Fishway Prescription for the Jackson Hydroelectric Project No. 2157 filed October 16, 2009

A-LA 13: Diversion Dam Volitional Passage

1.0 Pursuant to the limitations and schedules prescribed below the Licensee shall provide for the construction, maintenance, and operation of safe, timely, and effective upstream and downstream volitional fish passage at the City of Everett's Diversion Dam through structural modifications to the Diversion Dam or sluice way. The Licensee's obligation to construct, maintain, and operate such fishways is subject to the U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) determining, in consultation with the Aquatic Resource Committee (ARC), that spawning escapement of either Chinook salmon or steelhead trout within the Diversion Dam Index Area (DDIA) equals or exceeds in any one (1) year ten percent (10 %) of the combined total spawning escapement for either Chinook salmon or steelhead trout within the four (4) index areas of the Sultan River, downstream of the Diversion Dam ("passage trigger") and the Licensee obtaining any necessary regulatory approvals. The DDIA is from RM 9.2 to RM 9.7.

2.0 Upon the Service and NMFS determining, in consultation with the ARC, that the spawning escapement above the Diversion Dam exceeds six (6) anadromous redds in any one (1) year, the Licensee shall not reverse flow (divert) or authorize the reverse flow of water from the Sultan River into the Diversion Dam outlet pipe unless required for the City of Everett's water supply needs. If this water supply requirement is triggered, the Licensee shall in consultation with the ARC take appropriate measures to protect Endangered Species Act listed fish. Notwithstanding, in the event that the District installs and operates a fish screen at the outlet pipe, the District may resume reverse flow (divert) or may authorize the reverse flow of water from the Sultan River into the Diversion Dam outlet pipe. Such fish screen shall conform to the National Marine Fisheries Service (NMFS) 2008 Anadromous Salmonid Passage Facility Design Manual, prepared by the NMFS Northwest Region Hydro Division, dated February 8, 2008 (NMFS Design Manual).

3.0 Diversion Dam Volitional Passage Design Drawings

The Licensee's design for modifying the Diversion Dam to provide upstream and downstream volitional fish passage shall conform to the NMFS Design Manual, while continuing to meet the City of Everett's water supply requirements.

4.0 Schedule for Providing Diversion Dam Volitional Passage

4.1 Within twelve (12) months after license issuance, the Licensee shall file with the Commission the conceptual design drawings and cost estimates of the proposed Diversion Dam modifications required for achieving volitional fish passage, which may include modifications to the Dam's sluiceway or sluice gate.

4.2 Within six (6) months after the fish passage trigger prescribed at 1.0 above occurs, the District will file with the Commission the final design for the Diversion Dam modifications and apply for all necessary permits. Prior to filing the final design with the Commission, the Licensee shall prepare detailed design drawings at the thirty percent (30%)(functional design), fifty percent (50%) and ninety percent (90%) completion stage and consult with the ARC at each stage.

4.3 The Licensee shall not begin construction of the Diversion Dam modifications until the Service and NMFS, in consultation with the ARC, and the Commission approves the final design and plan, and the Licensee has obtained all necessary permits.

4.4 The Licensee shall complete the Diversion Dam modifications no later than two (2) full construction seasons after the Commission approval of the final design and plan and obtaining all necessary permits. For purposes of this prescription for fishways, the construction season is defined as August 1 to August 31.

5.0 Diversion Dam Volitional Passage Plan

5.1 Within one (1) year after License issuance, the Licensee shall file for Commission approval, a Diversion Dam Volitional Passage Plan (DDVP Plan). The DDVP Plan shall include: (1) the conceptual design drawings and cost estimates of the Licensee's proposed Diversion Dam modifications for achieving upstream and downstream volitional fish passage; (2) the method and schedule for implementing the Diversion Dam proposed modifications in the event that the passage trigger prescribed at 1.0 above occurs; (3) the method and the schedule for monitoring annual spawning escapement within the Diversion Dam Index Area and above the Diversion Dam, as well as, annual spawning escapement within other existing index areas in the Sultan River; (4) the method and schedule for testing and verifying fish passage effectiveness at the Diversion Dam through the use of spawning surveys and/or visual digital recordings; and (5) the program annual monitoring and reporting and ARC consultation requirements.

5.2 The Licensee shall develop the DDVP Plan in consultation with the ARC. The District will allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the DDVP Plan to the

Commission. When filing the DDVP Plan with the Commission, the Licensee will include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing will include the Licensee's reasons based upon Project-specific information. Upon Commission approval, the Licensee will implement the DDVP Plan.

APPENDIX D

U.S. Department of Interior, Fish and Wildlife Service Fishway Prescription for the Jackson Hydroelectric Project No. 2157 filed November 4, 2009

Accordingly, 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 Henry M. Jackson Hydroelectric Project, Project No. 2157-188, for the upstream and downstream volitional passage of Chinook and coho salmon, steelhead, bull trout, and sea-run cutthroat as follows:

1.0 Reservation of Authority to Prescribe Fishways

The Service has prepared its prescriptions for fishways in response to the proposals being considered by the Commission in this proceeding involving the proposed relicensing of the Henry M. Jackson Hydroelectric Project, Project No. 2157-188. If any proposal is modified as a result of licensing or after licensing, then the Department, through the U.S. Fish and Wildlife Service, will require adequate opportunity to reconsider each prescription and make modifications it deems appropriate and necessary for submittal to the Commission. Therefore, the Department requests that the Commission include the following condition in any license it may issue for Project No. 2157-188:

> Authority is reserved for the Department of the Interior, as delegated to the U.S. Fish and Wildlife Service, to prescribe the construction, operation, and maintenance of fishways at the Henry M. Jackson Hydroelectric Project, Project No. 2157-188, as appropriate, including measures to determine, ensure, or improve the effectiveness of such fishways, pursuant to Section 18 of the Federal Power Act, as amended. This reservation includes, but is not limited to, authority to prescribe fishways for Chinook salmon, coho salmon, pink salmon, steelhead, bull trout, and sea-run cutthroat trout and any other fish to be managed, enhanced, protected, or restored to the Sultan River Basin during the terms of the new license.

2.0 Preliminary Prescriptions for Fishways

2.1 Pursuant to the limitations and schedules prescribed below, the Licensee shall provide for the construction, maintenance, and operation of safe, timely, and effective upstream and downstream volitional fish passage at the City of Everett's Diversion Dam through structural modifications to the Diversion Dam or sluice way. The Licensee's obligation to construct, maintain, and operate such fishways is subject to the U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) determining, in consultation with the Aquatic Resource

Committee (ARC), that spawning escapement of either Chinook salmon or steelhead trout within the Diversion Dam Index Area (DDIA) equals or exceeds in any one (1) year ten percent (10 %) of the combined total spawning escapement for either Chinook salmon or steelhead trout within the four (4) index areas of the Sultan River, downstream of the Diversion Dam ("passage trigger") and the Licensee obtaining any necessary regulatory approvals.

2.1.1 For the purposes of this prescription, the Diversion Dam Index Area (DDIA) shall be defined as that part of the Sultan River from River Mile (RM) 9.2 upstream to RM 9.7.

2.2 Upon the Service and NMFS determining, in consultation with the ARC, that the spawning escapement above the Diversion Dam exceeds six (6) anadromous redds in any one (1) year, the Licensee shall not reverse flow (divert) or authorize the reverse flow of water from the Sultan River into the Diversion Dam outlet pipe unless required for the City of Everett's water supply needs. If this water supply requirement is triggered, the Licensee shall in consultation with the ARC take appropriate measures to protect Endangered Species Act listed fish. Notwithstanding, in the event that the District installs and operates a fish screen at the outlet pipe, the District may resume reverse flow (divert) or may authorize the reverse flow of water from the Sultan River into the Diversion Dam outlet pipe. Such fish screen shall conform to the National Marine Fisheries Service (NMFS) 2008 Anadromous Salmonid Passage Facility Design Manual, prepared by the NMFS Northwest Region Hydro Division, dated February 8, 2008 (NMFS Design Manual).

2.3 Diversion Dam Volitional Passage Design Drawings

2.3.1 The Licensee's design for modifying the Diversion Dam to provide upstream and downstream volitional fish passage shall conform to the NMFS Design Manual, while continuing to meet the City of Everett's water supply requirements.

2.4 Schedule for Providing Diversion Dam Volitional Passage

2.4.1 Within twelve (12) months after license issuance, the Licensee shall file with the Commission the conceptual design drawings and cost estimates of the proposed Diversion Dam modifications required for achieving volitional fish passage, which may include modifications to the Dam's sluiceway or sluice gate.

2.4.2 Within six (6) months after the fish passage trigger prescribed at 1.0 above occurs, the District will file with the Commission the final design for

the Diversion Dam modifications and apply for all necessary permits. Prior to filing the final design with the Commission, the Licensee shall prepare detailed design drawings at the thirty percent (30%)(functional design), fifty percent (50%) and ninety percent (90%) completion stage and consult with the ARC at each stage.

2.4.3 The Licensee shall not begin construction of the Diversion Dam modifications until the Service and NMFS, in consultation with the ARC, and the Commission approves the final design and plan, and the Licensee has obtained all necessary permits.

2.4.4 The Licensee shall complete the Diversion Dam modifications no later than two (2) full construction seasons after the Commission approval of the final design and plan and obtaining all necessary permits. For purposes of this prescription for fishways, the construction season is defined as August 1 to August 31.

2.5 Diversion Dam Volitional Passage Plan

2.5.1 Within one (1) year after License issuance, the Licensee shall file for Commission approval, a Diversion Dam Volitional Passage Plan (DDVP Plan). The DDVP Plan shall include: (1) the conceptual design drawings and cost estimates of the District's proposed Diversion Dam modifications for achieving upstream and downstream volitional fish passage; (2) the method and schedule for implementing the Diversion Dam proposed modifications in the event that the passage trigger prescribed at 1.0 above occurs; (3) the method and the schedule for monitoring annual spawning escapement within the Diversion Dam Index Area and above the Diversion Dam, as well as, annual spawning escapement within other existing index areas in the Sultan River; (4) the method and schedule for testing and verifying fish passage effectiveness at the Diversion Dam through the use of spawning surveys and/or visual digital recordings; and (5) the program annual monitoring and reporting and ARC consultation requirements.

2.5.2 The Licensee shall develop the DDVP Plan in consultation with the ARC. The District will allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the DDVP Plan to the Commission. When filing the DDVP Plan with the Commission, the District will include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by the District's plan. If the District does not adopt a recommendation, the filing will include the District's reasons based upon Project-specific

information. Upon Commission approval, the District will implement the DDVP Plan.

APPENDIX E

Reasonable and Prudent Measures and Terms and Conditions included in the National Marine Fisheries Service's Biological Opinion for the Jackson Hydroelectric Project No. 2157 filed February 9, 2011

Where the reasonable and prudent measures and the terms and conditions read "FERC must require" or "require the Licensee to", the licensee shall read the condition to mean that the licensee shall conform to the requirements as stipulated in the terms and conditions.

REASONABLE AND PRUDENT MEASURES (RPM)

The following RPMs are necessary and appropriate to minimize the effect of anticipated incidental take of Puget Sound Chinook and Puget Sound steelhead. FERC must require the Licensee to:

1. Minimize incidental take from the operation of the Project by following all the actions described in the proposed license articles of the Jackson Settlement Agreement as incorporated by FERC in the Project license that relate to Puget Sound Chinook and Puget Sound steelhead.

2. Minimize incidental take during monitoring of listed species when handling juvenile and or adult anadromous fish during fish population monitoring activities.

3. Minimize incidental take from construction activities in or near watercourses.

TERMS AND CONDITIONS

To be exempt from the prohibitions of Section 9 of the ESA, FERC must ensure that the Licensee fully implements the conservation measures in the License, and include in the License the following terms and conditions that implement the reasonable and prudent measures described above. Partial compliance with these terms and conditions may result in more take than anticipated, and would invalidate this take exemption. These terms and conditions are consistent with the basic design of the proposed action (USFWS and NMFS 1998). Though requiring some minor modifications in operations and equipment, the terms and conditions would not substantially interfere with the Project's capacity to provide electric energy to help meet regional energy demands. FERC should issue a new License to:

1. Require the Licensee to monitor fish populations and habitat and passage as described in the appropriate license articles. The Licensee must report all

incidental take that occurs during monitoring activities to NMFS. The Licensee must report the results of monitoring of fish and water quality annually to NMFS. This may be concurrent with the Project annual reports to FERC and shall be provided to NMFS by March 31 for take which occurred in the prior calendar year. Listed fish must be handled with extreme care and kept in water, with adequate circulation, to the maximum extent possible during sampling and monitoring. When a mix of species are captured or collected, ESA-listed fish must be processed first, to the extent possible, to minimize stress. Listed fish must be transferred using a sanctuary net (which holds water during transfer) whenever practical to prevent the added stress of being dewatered. Require the Licensee to monitor juvenile and adult mortality to ensure that incidental take levels are not exceeded. The Licensee must develop the monitoring measures in conjunction with NMFS, and receive their approval of the monitoring plan. Incidental take should be reported to:

National Marine Fisheries Service
Hydropower Division, FERC and Water Diversions
Attention: Keith Kirkendall, Branch Chief
1201 NE Lloyd Blvd., Suite 1100
Portland, OR 97232

2. Require the Licensee to use best management practices in all construction work, including adhering to certain timing restrictions. Spill control equipment must be on site and in quantities sufficient to effectively contain and recover accidental release of chemicals. Project personnel must be familiar with spill control equipment operation and procedures prior to the initiation of work. Instream work shall be conducted according to BMPs, consistent with WDFW's Hydraulic Code (RCW 77-55) by conforming to a Hydraulic Project Approval (WAC 220- 110) obtained from WDFW. In the event that the regulations are significantly modified or repealed during the license term, the terms in effect in 2010 shall continue in force for the term of the license to protect fish and their habitat.

3. FERC shall include the standard license reopener clause in any license issued for the this project to ensure continuing agency discretion throughout the life of the license as may be necessary to protect species listed under the ESA.

APPENDIX F

Reasonable and Prudent Measures and Terms and Conditions included in the U.S. Fish and Wildlife Service's Biological Opinion for the Jackson Hydroelectric Project No. 2157 filed February 23, 2011

REASONABLE AND PRUDENT MEASURES

RPM 1. Minimize the likelihood of bull trout injury and mortality from Marsh Creek Slide modification.

RPM 2. Minimize the extent and likelihood of effects to murrelets from noise disturbance.

RPM 3. Minimize the extent and likelihood of effects to murrelets from habitat modification.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the District and the FERC must comply with the following terms and conditions (T&C), in addition to the conservation measures, all of which implement the reasonable and prudent measures described above. T&Cs are nondiscretionary.

Implement the following T&C to fulfill RPM 1:

> T&C 1. Seine and block net the pool below the Marsh Creek slide to remove fish that are present and then prevent fish from entering the pool during any blasting that is deemed harmful to fish.

Implement the following T&C to fulfill RPM 2:

> T&C 1. Prohibit helicopters within .5 miles of suitable murrelet habitat during the murrelet nesting season.

Implement the following T&C to fulfill RPM 3:

> T&C 1. Use the USFS manual (2008), "Field Guide for Danger Tree Removal Identification and Response" as additional guidance to the MMHPP when identify and removing danger trees in and adjacent to murrelet habitat.
>
> T&C 2. If suitable nesting trees are to be felled during nesting season, they should be removed as early or as late in the nesting season as possible.

T&C 3. Contact the FWS to discuss potential options to reduce effects to murrelets prior to the removal of potential nest trees in suitable habitat during the nesting season.

T&C 4. Update MMHPP to reflect new information in this Opinion.

APPENDIX G

Proposed license articles contained in Appendix 1 to the Jackson Project No. 2157 settlement agreement filed on October 14, 2009 and made part of this license through ordering paragraphs (D) and (E).

A-LA 1: Aquatic Resource Committee

Within thirty (30) days of issuance of the License, the Licensee shall establish and convene an Aquatic Resource Committee (ARC) for the purpose of consultation with the Licensee as expressly provided in specific License Articles. The purpose of the ARC is to assist in implementation of the aquatic resource License Articles.

The Licensee shall arrange, administer, and chair all meetings. The Licensee shall provide draft meeting minutes for concurrence by the ARC prior to final distribution. Meeting minutes shall include ARC action items, a summary of issues discussed, decisions reached, and member concerns.

The Licensee shall bear all costs associated with conducting meetings.

For purposes of the License, consultation or consult means that the Licensee shall obtain the views of and attempt to reach consensus among the specified parties or specified committee whenever the License requires the Licensee to consult. Consultation shall not mean consultation under Section 7 of the Endangered Species Act or other federal laws specifically requiring consultation unless specifically provided.

A-LA 2: Marsh Creek Slide Modification and Monitoring

If, based upon monitoring and other available information, the Aquatic Resource Committee (ARC) determines that the use of dynamite, expandable grout, or comparable methods to modify the size and location of specific rocks at the Marsh Creek Slide (MCS) is necessary to enhance fish passage at the Slide, the Licensee shall implement such modifications pursuant to a plan and a schedule approved by the ARC and the Commission and subject to obtaining any necessary regulatory approval. The Licensee shall seek the input of the US Forest Service (USFS) Enterprise Team in developing the plan for such modifications.

Modifications to the MCS shall be designed with the objective of not compromising the stability of the adjacent slope.

The Licensee shall also monitor fish passage at the MCS by continuing to annually monitor escapement in the reach upstream of the Slide, as it has been conducted since the 1990s. The Licensee shall use funds from the Habitat Enhancement Account (HEA) (see A-LA 12) to implement additional similar modifications to the MCS as necessary if the ARC concludes that an additional modification to the MCS is necessary to enhance fish passage and 1) initial or subsequent modifications cause further slides or blockages or 2) the annual escapement of Chinook salmon and steelhead trout in the spawning habitat within the Diversion Dam Index Area (RM 9.2 to 9.7) does not exceed ten (10) percent of the total annual escapement of Chinook or steelhead in all index areas in the Sultan River in any year. Any additional future modifications by the Licensee to the MCS are subject to availability of HEA funds.

To accomplish these commitments, within 180 days of issuance of the License, the Licensee shall file with the Commission, for approval, a Marsh Creek Slide Monitoring and Modification Plan (Marsh Creek Slide Plan). The Marsh Creek Slide Plan shall include: (1) the establishment of a permanent survey control point or benchmark; (2) the methods and schedule for conducting a detailed baseline physical survey at low flow; (3) the method and schedule for using dynamite, expandable grout or comparable methods to modify the size and location of specific rocks to create additional potential passage route(s) and improve passage; (4) the method and schedule for conducting post modification physical surveys of the Marsh Creek Slide; (5) the method and schedule for monitoring fish use and escapement upstream of the Marsh Creek Slide on an annual basis throughout the License term; and (6) the method and schedule for conducting physical surveys of the Marsh Creek Slide subsequent to flow events exceeding 4,000 cfs instantaneous peak as measured at the Diversion Dam or a scheduled process flow pursuant to A-LA 8.

The Licensee shall develop the Marsh Creek Slide Plan in consultation with the ARC. The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the Marsh Creek Slide Plan to the Commission. When filing the Marsh Creek Slide Plan with the Commission, the Licensee shall include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval, the Licensee shall implement the Marsh Creek Slide Plan.

A-LA 3: Temperature Conditioning in Reach 3

The Licensee shall implement the following program to condition the temperature of the water released at Culmback Dam pursuant to the A-LA 9 Reach 3 instantaneous minimum flow requirements. The program's objective is to provide a seasonally appropriate water temperature regime to improve conditions for salmonids and other aquatic resources (including fish and macroinvertebrates) in Reach 3 (RM 9.7 to 16.1) of the Sultan River.

Temperature Conditioning Performance Standards

In consultation with the Aquatic Resource Committee (ARC), the Licensee shall develop temperature conditioning performance standards for April through October for (1) the water release points and (2) the downstream end of Reach 3. These temperature conditioning performance standards shall be the suitable temperature bands (ranges) for the benefit of salmonids and other aquatic resources (including fish and macroinvertebrates). These temperature conditioning performance standards shall comply with applicable state water quality standards.

Temperature Conditioning Monitoring

The Licensee shall monitor water temperature within Reach 3 for the term of the License. The Licensee shall also monitor the biological response of salmonids and other aquatic resources (including fish and macroinvertebrates) to the temperature conditioning in at least two (2) separate index areas within Reach 3 for the term of the License. The temperature conditioning monitoring shall be done in consultation with the ARC.

Temperature Conditioning Program Development

1.1. Phase One

Until the earlier of (a) two (2) years after the date that the Licensee completes the Diversion Dam's volitional fish passage modifications, as described in A-LA 13, or (b) January 1, 2020, the Licensee shall implement the temperature condition program within the constraints of the Project's existing piping infrastructure. During Phase One, the Licensee shall make temperature sensor and control valve modifications, as necessary.

The water release points shall be the 10-inch cone valve, the hydro unit, and the 16-inch auxiliary release line. Blending ratios associated with this temperature conditioning program shall be determined by temperature monitoring

at the water release points, the downstream end of Reach 3, Spada Lake, and/or other suitable locations.

Phase One of the temperature conditioning program shall be implemented only when (1) reservoir elevations are greater than 1410 feet mean sea level (msl) and (2) the reservoir is stratified (typically April through October).

1.2. Phase Two

Prior to the earlier of (a) two (2) years after the date that the Licensee completes the Diversion Dam's volitional fish passage modifications, as described in A-LA 13, or (b) January 1, 2020, and subject to the Commission's approval and obtaining any necessary regulatory approval, the Licensee shall install and operate a temperature conditioning structure (Phase Two Structure). All of the flow components for this structure, except for the valves, shall have a hydraulic capacity to allow the Licensee to provide no less than 165 cfs (at Spada Lake elevation of 1430 feet msl) of temperature conditioned water immediately below Culmback Dam.

When the reservoir is above 1380 feet msl, this structure shall allow the Licensee to temperature condition the flows released from Culmback Dam.

Blending ratios associated with this temperature conditioning program shall be determined by temperature monitoring at the water release points, the downstream end of Reach 3, Spada Lake, and/or other suitable locations.

Phase Two of the temperature conditioning program shall be implemented only when (a) reservoir elevations are greater than 1380 feet msl and (b) the reservoir is stratified (typically April through October).

Water Temperature Conditioning Plan

Within 180 days of issuance of the License, the Licensee shall file with the Commission, for approval, a Water Temperature Conditioning Plan (WTC Plan). This WTC Plan shall document how the Licensee shall implement a program to condition the temperature of waters released at Culmback Dam. The WTC Plan shall include: (1) the preliminary operation plan for the conditioning of water released from Culmback Dam pursuant to the A-LA 9 minimum flow schedule to achieve temperature conditioning performance standards in Reach 3 during both Phase One and Phase Two; (2) the method and schedule for, and limitations upon, temperature conditioning of water releases; (3) the method, locations, and schedule for monitoring water temperature within Reach 3 and the response of aquatic resources (including fish and macroinvertebrates) to water temperature

conditioning; (4) the method and schedule for adjusting the water temperature release schedule based upon temperature monitoring and response of the aquatic resources; (5) the conceptual design drawings of the Licensee's proposed alternatives for the Phase Two Structure; (6) a preliminary operation and maintenance plan for the proposed alternatives for the Phase Two Structure; (7) a schedule for selection, design and construction of the Phase Two Structure; and (8) the temperature conditioning program annual reporting and ARC consultation requirements.

The Licensee shall develop the WTC Plan in consultation with the ARC. The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the WTC Plan to the Commission. When filing the WTC Plan with the Commission, the Licensee shall include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval, the Licensee shall implement the WTC Plan.

A-LA 4: Whitewater Boating Flows

The Licensee shall provide flows for twelve (12) viable whitewater boating events every three (3) years for the duration of the License with sufficient advance notice to whitewater boaters. During each three-year period, the Licensee shall provide a firm water budget of 2,100 acre-feet of water (total, to be allocated over three (3) years) to ensure that twelve (12) viable whitewater events occur. If the 2,100 acre-feet of water budget in combination with controlled and uncontrolled flow releases (i.e. spill) and accretion flows is not sufficient to achieve twelve (12) viable whitewater events during each three (3) year period, the License shall provide a reserve budget of 1,200 acre-feet to ensure that such events occur.

Whitewater Recreation Plan

Within ninety (90) days after issuance of the License, the Licensee shall file with the Commission, for approval, a Whitewater Recreation Plan (WR Plan). This WR Plan shall document how the Licensee shall implement a program to provide annual higher flows in the Sultan River below Culmback Dam for whitewater boating for the duration of the License.

The WR Plan shall include the following provisions that describe: (1) the frequency, magnitude, duration, and timing of each whitewater event during the

first three-year period and the mechanism for determining such parameters during subsequent years; (2) operational, biological, and other constraints upon whitewater events; (3) the ongoing involvement (including annual meetings) of the Aquatic Resource Committee (ARC) and American Whitewater in implementing the Program; (4) the mechanism for timing whitewater events to coincide with natural rainfall events or coordinate with Project generation or other License Article obligations to achieve greater flow volumes in desired reaches or habitats; (5) mechanism for notifying whitewater boating stakeholders of whitewater boating opportunities during scheduled whitewater events and other high flow events within the Sultan River; (6) mechanism for assessing the boaters' satisfaction during whitewater events and impacts to aquatic and terrestrial resources; (7) mechanism for recording the number of participants, safety incidents, and costs; (8) the timing and other restrictions necessary to minimize impacts to aquatic resources, to not exacerbate flood damage in the City of Sultan; (9) the method and schedule for monitoring flow releases and water budget accounting pursuant to the Plan; (10) the waiver of indemnity for participants in a scheduled flow release; and (11) the mechanism for providing and restricting the whitewater boating stakeholder representatives shuttle vehicle access to Culmback Dam and the Diversion Dam during scheduled whitewater events

The Licensee shall develop the WR Plan in consultation with the ARC, American Whitewater and National Park Service (NPS). The Licensee shall allow a minimum of thirty (30) days for members of the ARC, American Whitewater and NPS to comment and make recommendations before submitting the WR Plan to the Commission. When filing the WR Plan with the Commission, the Licensee shall include documentation of consultation, copies of comments and recommendations, and specific descriptions of how comments and recommendations from the ARC, American Whitewater, and NPS are accommodated by the WR Plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information. Upon Commission approval, the Licensee shall implement the WR Plan.

Whitewater Events

The twelve (12) whitewater events will be provided either as (1) scheduled events (section 2.3), or (2) viable unscheduled whitewater events (section 2.2).

Viable Unscheduled Whitewater Events: A viable unscheduled whitewater event is defined as a calendar day (a) occurring between March 15 and November 30 or at times agreed to by the Licensee and American Whitewater in consultation with the ARC, (b) with controlled and uncontrolled flow releases (i.e. spill) and accretion flows between 600 and 2000 for at least three (3) hours, (c) during a

time of day that supports whitewater boating, at conditions that allow access to the reach, and (d) with at least 48 hours notice to boaters.

Scheduled Whitewater Events: Each year, at a minimum two (2) of the whitewater events will be scheduled at least two (2) weeks in advance and shall occur on weekends, with one (1) occurring in September and one (1) occurring in April or May. Each event shall be between 600 cfs and 2000 cfs and at times of the day that support whitewater boating. If the duration of a scheduled whitewater event is scheduled to be longer than three (3) daylight hours, the event will be counted as two (2) events. For purposes of determining compliance, the scheduled whitewater event's magnitude and duration will be measured at the flow gage immediately upstream of the City of Everett's Diversion Dam at River Mile (RM) 9.8.

So long as the whitewater recreation flow occurs on the noticed day for the whitewater event, the scheduled magnitude and duration of a whitewater event may be achieved through any combination of controlled (including releases to achieve process flow components pursuant to A-LA 8) and uncontrolled flow releases (i.e. spill) and accretion flow. However, only water (above scheduled minimum flows) released from Culmback Dam pursuant to a scheduled whitewater recreation flow event and any downramping associated with such release (as required by A-LA 5) shall be deducted from the 2,100 acre-feet water budget. If a portion of the 2,100 acre-foot water budget remains after the twelve (12) events have been provided, the balance of the water budget is available for additional releases during that three (3) year period.

So long as the whitewater recreation flow occurs on the scheduled day, the scheduled magnitude and duration of a whitewater event may be achieved through any combination of controlled (including releases to achieve process flow components pursuant to A-LA 8) and uncontrolled flow releases (i.e. spill) and accretion flow. However, only water released from Culmback Dam pursuant to a scheduled whitewater recreation flow event and any downramping associated with such release (as required by A-LA 5) shall be deducted from the water budget provided in section 1.1.

The Licensee shall consult with the ARC, NPS and American Whitewater on an annual basis to determine if the WR program is providing a meaningful whitewater experience and if the program should be modified, within the constraints of the water budget. The Licensee in consultation with the ARC and American Whitewater, may request that the Commission temporarily suspend or reduce the WR Program based upon lack of meaningful whitewater boating experience. In the event that the program is temporarily suspended or reduced, the Licensee will consult annually with the ARC, NPS and American Whitewater

concerning whether the Program shall be resumed.

Drought Events

During the course of a water year, if necessary, the Licensee in consultation with the ARC shall develop a drought controlled flow release schedule for whitewater events when: (1) a drought event resulting in advisory reductions in domestic water consumption (as described by the 2007 City of Everett's Drought Response Plan as a Stage 1 response to a drought event) is occurring; (2) the whitewater events described in this LA require interim modification (including postponing or reductions in flow magnitude) to manage water supply during periods of weather related shortages; and (3) the drought release schedule shall not undermine the purposes of this License Article. The Licensee shall notify the Commission and shall implement the drought release schedule within seven (7) days of providing such notice, unless otherwise directed by the Commission.

Reservation System

The Licensee shall develop a reservation system for the weekend whitewater events, a scheduled water release may be canceled if less than six (6) whitewater boaters makes a reservation by 5:00 p.m. on the Thursday prior to the scheduled event. Any event cancelled due to insufficient reservations shall be counted as if the event has occurred (with a proportional reduction from the water budget provided in A-LA 4), and the Licensee shall be under no obligation to reschedule the whitewater event.

A-LA 5: Downramping Rate Conditions

The Licensee shall operate the Project within the following downramping rate schedules and downramping frequency limitations. Downramping rate refers to the rate of allowable stage reduction per unit time. The downramping rates do not apply to power-generation equipment failures, forced outages, or when flow releases are exacerbating downstream flood conditions. However, the Licensee shall take steps listed in section 1 below to reduce operational emergencies that may trigger sudden drops in flow below the Powerhouse. The Licensee shall track rates on a 15-minute basis by monitoring U.S. Geological Survey (USGS) Streamflow Gages. No one (1) 15-minute downramping value shall exceed half the hourly rate shown in the schedule. No four (4) consecutive 15-minute downramping rates, in total, shall exceed the hourly rates shown in the schedule.

Day is defined as one (1) hour after sunrise to one (1) hour before sunset. Night is defined as one (1) hour after sunset to one (1) hour before sunrise. If the

Licensee downramps during one (1) hour before to one (1) hour after sunrise or sunset and different downramping rates are required for day and night, the Licensee shall follow the lower of the day or night rates.

Operational Improvements

To reduce operational emergencies that result in flow fluctuations, the Licensee shall install and use a flow deflector to the existing Pelton wheel units to maintain flow during load rejection events. Until the new Pelton bypass system proves to be operationally effective, the Licensee shall maintain staff at the Powerhouse during potential electrical storms.

Redd Dewatering Protection

The Licensee shall institute a salmon ceiling flow of 550 cfs (mean daily discharge measured at the Powerhouse gage) during the September 15 to October 15 period of peak spawning for Chinook salmon, unless natural accretion flows or Spada Lake inflow supersedes the Licensee's hydraulic control of the Project. This ceiling shall ensure that redds remain wetted should Project flows be reduced to minimums of 300 cfs. Furthermore, the Licensee shall use spawner survey information collected to determine the highest elevation at which spawning has occurred during Chinook and steelhead spawning seasons. The Licensee shall attempt to keep redds covered with water until fry emergence has occurred. The spawning flow ceiling and corresponding minimum flow may be adjusted based upon approval by the Aquatic Resource Committee (ARC).

Downramping Rate Schedules

Jackson Hydroelectric Project Powerhouse Downramping Rate Schedules

The following schedule as measured at USGS Streamflow Gage No. 12138160 applies to Jackson Hydroelectric Project Powerhouse downramping when the flow is less than 1,500 cfs. When providing flow releases from Culmback Dam (including process flows, special purpose flows, and whitewater recreation flows), the Licensee shall coordinate such releases to ensure compliance with this schedule.

January 1 to May 31

Flow Range (cfs)	**Day**	**Night**
1,500 to 750	4 inches per hour	4 inches per hour
750 to 600	2 inches per hour	2 inches per hour
600 to 300	2 inches per hour	4 inches per hour

300 to Minimum	2 inches per hour	2 inches per hour

June 1 to September 15

Flow Range (cfs)	**Day**	**Night**
1,500 to 750	2 inches per hour	1 inch per hour
750 to 600	2 inches per hour	1 inch per hour
600 to Minimum	2 inches per hour	1 inch per hour

Sept. 16 to Oct. 31

Flow Range (cfs)	**Day**	**Night**
1,500 to 750	2 inches per hour	1 inch per hour
750 to 600	2 inches per hour	1 inch per hour
600 to Minimum	2 inches per hour	2 inches per hour

November 1 to December 31

Flow Range (cfs)	**Day**	**Night**
1,500 to 750	4 inches per hour	6 inches per hour
750 to 600	2 inches per hour	2 inches per hour
600 to Minimum	4 inches per hour	4 inches per hour

From January 1 to September 15, if river flow prior to downramping has exceeded 1,000 cfs for more than 72 hours, the Licensee shall downramp through the 750 cfs to 600 cfs flow range only after holding flow constant between 750 and 850 cfs for at least six (6) hours of daylight and one (1) overnight period.

Reach 2 (River Mile (RM) 4.5 to RM 9.7) and Reach 3 (RM 9.7 to RM 16.1) Ramping Rate Schedule

The following schedule as measured at USGS Streamflow Gage No. 12137800 applies to downramping when the flow is below 300 cfs. The schedule does not apply to actions (such as gravel flushing) which require manual operation of the sluice gate at the Diversion Dam.

Time of Year	**Day**	**Night**
January 1 to May 31	3 inches per hour	3 inches per hour
June 1 to September 15	3 inches per hour	1.5 inches per hour
September 16 to October 31	3 inches per hour	3 inches per

hour		
November 1 to December 31	6 inches per hour	6 inches per hour

For flow releases from Culmback Dam (including process flows, special purpose flows, and whitewater recreation flows) that cause the flow range at USGS Streamflow Gage No. 12137800 to be greater than 300 cfs but less than 1000 cfs, the Licensee shall attempt within the constraints of the Project's existing equipment to limit the downramping rate to no more than 0.5 feet per hour.

Downramping Frequency Limitations

The Licensee shall limit Jackson Hydroelectric Project Powerhouse downramping to no more than a total of 48 hours from January 1 through May 31. The Licensee shall limit Jackson Hydroelectric Project Powerhouse downramping to no more than 16 hours of the seasonally allotted 48 allowed in any consecutive 30-day period during this January 1 through May 31 period. The downramping frequency limitations apply when downramping is greater than one (1) inch per hour and river flows as measured at USGS Streamflow Gage No. 12138160 are less than 750 cfs. Ramping as a result of high flow events required by License Articles (process flows, whitewater recreation flows, special purpose flows) is not subject to the downramping frequency limitations.

Downramping Report

Within one (1) year of the completion of the side channel enhancement projects pursuant to A-LA 7, the Licensee shall file with the Commission a ramping rate report. The Licensee shall develop this report in consultation with the ARC. The report shall evaluate whether additional ramping rate restrictions are necessary to protect juvenile salmon from stranding.

Incident Report

If Project operations result in an exceedance of the above downramping rate schedules (section 3) or downramping rate restrictions (section 4), the Licensee shall notify the members of the ARC and the Commission no later than ten (10) business days after such incident.

A-LA 6: Large Woody Debris (LWD)

Within five (5) years of the Commission's approval of the Large Woody Debris Plan (LWD Plan), the Licensee shall install five (5) to eight (8) large

woody debris (LWD) structures in the lower Sultan River (River Mile (RM) 0 to RM 16) subject to gaining regulatory approval and necessary legal access. In addition, starting ten (10) years after License issuance through the remainder of the term of the License, the Licensee shall install up to four (4) additional LWD structures in the Sultan River at a schedule to be determined by the Aquatic Resource Committee (ARC), subject to gaining regulatory approval and necessary legal access. In addition, throughout the License term, the Licensee shall move woody debris accumulated in Spada Reservoir between Culmback Dam and the log boom to areas targeted for restoration decided by the ARC.

Up to five (5) of the initial eight (8) structures shall be main channel LWD structures designed to improve main channel habitat complexity. The Licensee shall design the main channel LWD structures to re-direct flow, carve and create habitat, add diversity, retain and sort sediment, provide salmonid rearing habitat, and/or provide a medium for use by macroinvertebrates.

Up to three (3) of the initial eight (8) structures shall be associated with side channels and designed to improve mainstem / side channel connectivity by re-directing flow into the side channel, as reasonably feasible and appropriate.

Every LWD structure installed pursuant to this License Article shall include a minimum of five (5) and up to thirty (30) structural pieces and where possible, shall be designed to collect additional wood over time. Additionally, each structural piece shall be between 24-inches to 36-inches in diameter (dbh) and approximately 35-feet to 40-feet in length with rootwads intact. The size and length of each structural piece shall be limited by the transportation capacity of moving structures to a staging area by truck. Further limitations shall be imposed for projects relying on the use of helicopter transport of structural pieces. The weight of each structural piece shall be limited by aerial transport capabilities by Chinook helicopter between the staging area and the project site. The structural pieces shall be one of the following species: fir, hemlock or cedar. Structural pieces greater than 36-inches in diameter (dbh) shall be considered subject to availability and the limitations previously described.

In selecting the specific location and design of an LWD structure, the Licensee shall consult with the ARC and consider the probability of structure retention and risk to property.

The Licensee shall use woody debris from Spada Reservoir that accumulates between Culmback Dam and the log boom where possible to support the LWD projects described herein and also to provide materials in support of the Side Channel Enhancement (SCE) projects. The Licensee shall consult with the ARC regarding movement and placement of materials downstream of Culmback

Dam.

To accomplish this, within one (1) year of issuance of the License, the Licensee shall file with the Commission, for approval, an LWD Plan. This LWD Plan shall document how the Licensee shall implement a program to install up to eight (8) LWD structures between RM 0 and RM 16 in the Sultan River within five (5) years of Commission approval of the LWD Plan and up to an additional four (4) LWD structures from ten (10) years after License issuance through the term of the License. The LWD Plan shall include provisions that describe: 1) the design and location of each LWD structure; 2) the LWD installation schedule; 3) the restrictions necessary to minimize adverse impacts to public safety and property; 4) the method and schedule for monitoring the effectiveness of the LWD structures; and 5) the method and schedule for moving woody debris accumulated in Spada Reservoir between Culmback Dam and the log boom to areas targeted for restoration decided by the ARC.

The Licensee shall develop the LWD Plan in consultation with the ARC. The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the LWD Plan to the Commission. When filing the LWD Plan with the Commission, the Licensee shall include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval, the Licensee shall implement the LWD Plan.

A-LA 7: Side Channel Projects

The Licensee shall enhance the salmonid habitat function of a minimum of 10,000 linear feet of side channel area to provide a minimum of three (3) acres of additional rearing habitat and other habitat functions. This habitat shall be located within the wetted geographic area defined by a flow of 4,100 cfs, within the Sultan River, measured downstream of the Powerhouse. This enhancement shall be achieved through projects that improve flow connectivity or other habitat modification projects. This enhancement shall be subject to obtaining regulatory approval and legal access to any property necessary to carry out the above enhancement.

As part of this commitment, the Licensee shall restore and maintain flow connectivity between the mainstem Sultan River and the five prominent side

channels at flows greater than 300 cfs (as measured at the USGS Streamflow Gage No. 12138160). These five prominent side channels are identified in the Preliminary License Proposal (December 2008) at Figure 5.3-12 as Side Channels 1, 2, 3, A, and B. At Side Channels 1, 2, 3, A and B, the Licensee shall excavate the inlets or use other means to redirect and maintain flow to ensure that flow connectivity and habitat value is achieved at flows greater than 300 cfs. The Licensee shall design the excavation or other means utilized in these side channels so that connectivity is self-maintaining. The Licensee shall also design the side channel enhancements to avoid adverse impacts to surrounding properties (including the City of Sultan's recreational properties). If property easements or regulatory approval cannot be obtained, the Licensee shall develop, in consultation with the Aquatic Resource Committee (ARC), other similar projects in the Sultan or Skykomish river systems to meet the linear foot and square foot requirements dictated by this License Article obligation.

The Licensee shall rely upon LiDAR, HEC_RAS modeling, existing studies and other available information to identify other side channels, swales, backwater and off channel habitats suitable for enhancement as salmonid rearing habitat within the Sultan River downstream of Culmback Dam.

As described in the LWD License Article, the Licensee shall use large woody debris collected at Culmback Dam to add structure and function to side channels.

Within one (1) year of issuance of the License, the Licensee shall file with the Commission, for approval, a Side Channel Enhancement Plan (SCE Plan). This SCE Plan shall document how the Licensee shall implement a program to enhance the salmonid rearing habitat function in a minimum of 10,000 linear feet of side channel area within the wetted geographic area defined by a flow of 4,100 cfs as measured at the USGS gaging station below the Powerhouse within the Sultan River downstream of Culmback Dam. The SCE Plan shall include provisions that describe: 1) the method and schedule for restoring and maintaining year-round flow connectivity between the mainstem Sultan River and Side Channels 1, 2, 3, A, and B; 2) the method and schedule for excavating or utilizing other means to redirect and maintain flow, Side Channels 1, 2, 3, A, and B; 3) the method and schedule for identifying, enhancing and maintaining other off channel habitat suitable for enhancement; 4) the use of large woody debris or other flow re-direction means to re-direct a portion of the mainstem flow into the side channels, 5) the use of large woody debris collected at Culmback Dam to add structure and function within the side channel; and 6) the method and schedule for monitoring (including reporting requirements) and maintaining side channel enhancements throughout the term of the License.

The Licensee shall develop the SCE Plan in consultation with the ARC. The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the SCE Plan to the Commission. When filing the SCE Plan with the Commission, the Licensee shall include documentation of consultation, copies of comments and recommendations, and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt an individual ARC member's recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval and obtaining any necessary regulatory approvals, the Licensee shall implement the SCE Plan.

A-LA 8: Process Flow Regime

The Licensee shall discharge water from the Project into the Sultan River to ensure that the magnitude, duration, timing and frequency of the process flow components specified within sections 1 through 5 of this License Article are achieved. However, unless otherwise provided by this License Article, the magnitude, duration, timing and frequency of the process flow components may be achieved through any combination of controlled (including whitewater boating releases pursuant to A-LA 4) and uncontrolled flow releases (i.e. spill) and accretion flow.

A-LA 8 Table 1. Process Flow Components Summary

Process Flow Component	Magnitude and Duration	Frequency
Component 1: Channel Maintenance Flow (measured at USGS Streamflow Gage No. 12138160)	Component Flow achieved when: (a) a target flow of at least 4100 cfs is maintained for twenty-four (24) hours; or (b) a target flow of at least 4100 cfs is achieved and the Licensee provides a maximum release flow at the time when flow drops below 4100 cfs for a total duration (including the target flow and maximum release) of twenty-four (24) consecutive hours.	Four (4) times every ten (10) years (but not less than once every four (4) years).
Component 2: Channel Forming (measured at USGS Streamflow Gage No. 12138160)	Component flow is achieved when: (a) a target flow of at least 6500 cfs is maintained for twenty-four (24) consecutive hours; or (b) a target flow of 6500 cfs is achieved and the Licensee provides a maximum release flow at the time when flow drops below 6500 cfs for a total duration (including the target flow and maximum release) of twenty-four (24) consecutive hours, or (c) the Licensee provides a maximum release flow for twenty-four (24) consecutive hours that is timed to achieve, to the extent feasible, a target flow of 6500 cfs.	One (1) time every ten (10) years.

Component 3.1: Reach 1 Flushing Flows (measured at USGS Streamflow Gage No. 12138160)	Component flow is achieved when 1500 cfs is maintained for six (6) consecutive hours. If the Spada Reservoir is below 1420 feet, component flow is achieved when a 1200 cfs instantaneous minimum flow is maintained for six (6) consecutive hours.	Two (2) times every year (with one occurring in September and one occurring between April 1 and May 31).
Component 3.2: Reach 2 Flushing Flows(measured immediately upstream of Powerhouse at RM 4.7)	Component flow achieved when: (a) a 500 cfs instantaneous minimum flow is maintained for six (6) consecutive hours; or (b) a 700 cfs instantaneous minimum flow is maintained for three (3) consecutive hours.	Two (2) times every year (with one occurring in September and one occurring between April 1 and May 31).
Component 3.3: Reach 3 Flushing Flows (measured immediately upstream of City's Diversion Dam at RM 9.8)	Component flow achieved when: (a) a 400 cfs instantaneous minimum flow is maintained for six (6) consecutive hours; or (b) a 600 cfs instantaneous minimum flow is maintained for three (3) consecutive hours.	Two (2) times every year (with one occurring in September and one occurring between April 1 and May 31).
Component 4.1: Reach 1 Upstream Migration Flow (measured at USGS Streamflow Gage No. 12138160)	Component flow achieved when a minimum flow between 800 and 1200 cfs as determined by the Aquatic Resource Committee (ARC) is maintained or exceeded for six (6) consecutive hours.	One (1) time per year (occurring in September).

Component 4.2: Reach 2 Upstream Migration Flow (measured immediately upstream of the Powerhouse at RM 4.7)	Component flow is achieved when a flow between 400 and 600 cfs instantaneous minimum flow, as determined by the ARC, is maintained for six (6) consecutive hours.	One (1) time per year (occurring in September).
Component 4.3: Reach 3 Upstream Migration Flow (measured immediately upstream of the City's Diversion Dam at RM 9.8)	Component flow achieved when a minimum flow between 300 and 500 cfs as determined by the ARC is maintained or exceeded for six (6) consecutive hours.	One (1) time per year (occurring in September) after completion of Diversion Dam volitional fish passage modification.
Component 5.1: Reach 1 Outmigration Flow (measured at USGS Streamflow Gage No. 12138160)	Component flow is achieved when between 800 and 1200 cfs minimum flow as determined by the ARC is maintained or exceeded for six (6) consecutive hours.	Two (2) times per year (one occurring in April and one occurring in May).
Component 5.2: Reach 2 Outmigration Flow (measured immediately upstream of the Powerhouse at RM 4.7)	Component flow is achieved when between 400 and 600 cfs minimum flow as determined by the ARC is maintained or exceeded for six (6) consecutive hours.	Two (2) times per year (one occurring in April and one occurring in May).
Component 5.3: Reach 3 Outmigration Flow (measured immediately upstream of the City's	Component flow is achieved when between 200 and 400 cfs minimum flow as determined by the ARC is maintained or exceeded for six (6) consecutive hours.	Two (2) times per year (one occurring in April and one occurring in May) after volitional fish passage and the

Diversion Dam at RM 9.8)		ARC determines need.

The controlled flow releases shall be consistent with the Licensee's obligation pursuant to other License Articles and agreements with the City of Everett pertaining to its municipal water supply needs. The Licensee, in consultation with the Aquatic Resources Committee (ARC), shall schedule the timing of the controlled flow releases for any process flow component to avoid exacerbation of any downstream flood damage, and take into account maintenance and real-time aquatic resource (including fish and macroinvertebrates) concerns.

During the course of a water year, if necessary, the Licensee, in consultation with the ARC, shall develop a drought controlled flow release schedule for process flow components when: (1) a drought event resulting in voluntary reductions in domestic water consumption (as described by the 2007 City of Everett's Drought Response Plan as a Stage 2 response to a drought event) is occurring; (2) the process flow components described in this LA require interim modification (including changes in timing or reductions in flow magnitude) to manage water supply during periods of weather-related shortages; and (3) the drought release schedule shall not undermine the purposes of this LA. The Licensee shall notify the Commission and shall implement the drought release schedule within seven (7) days of providing such notice, unless otherwise directed by the Commission.

With respect to the maintenance flows (section 1), the flushing (section 3), upstream migration (section 4), and outmigration (section 5) process flow components, for compliance purposes (to account for monitoring imprecision and release equipment variability and accretion flow variability), a component flow is achieved notwithstanding temporary fluctuations of up to ten (10) percent of the required flow levels for so long as the average over the process flow component duration is above the specified process flow component flow level.

Based upon A-LA 17 monitoring and the best available information, in year ten (10) of this License and every ten (10) years thereafter, the Licensee shall file a process flow effectiveness report with the Commission for its approval, after consultation with the ARC. The report will evaluate the effectiveness of each process flow component in achieving its designated objective.

Within ninety (90) days of issuance of the License, the Licensee shall file with the Commission for approval, a PF Plan. This PF Plan shall document how the Licensee shall implement a program for periodic controlled flow releases from the Powerhouse, the outlet pipe located adjacent to the City of Everett's Diversion Dam, and Culmback Dam. The PF Plan shall include provisions that describe: (1) the frequency, magnitude, duration, and timing of process flow components consistent with this License Article; (2) the ongoing involvement of the ARC in implementing this program; (3) the mechanism for timing controlled flow releases (including whitewater boating releases pursuant to A-LA 4) to coincide with natural rainfall events or uncontrolled flow releases to achieve the

flow frequency, magnitude, and duration for each of the process flow components; (4) the timing and other restrictions necessary to minimize impacts to aquatic resources, to not exacerbate downstream flood damage in the City of Sultan; (5) the method, locations, and schedule for monitoring and measuring process flow components; (6) the method and schedule for studying the necessity of flushing flow for supporting the geomorphic process goals; (7) the method and schedule for studying the necessity of upstream migration flow and outmigration flow for providing timely and effective upstream and downstream migration of anadromous fish; and (8) the method and schedule for monitoring the impacts of process flow upon aquatic resources.

The Licensee shall develop the PF Plan in consultation with the ARC. The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the PF Plan to the Commission. When filing the PF Plan with the Commission, the Licensee shall include documentation of consultation, copies of comments and recommendations, and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval, the Licensee shall implement the PF Plan.

The process flow regime specified by this License Article has the following components:

Channel Maintenance Flow: Four (4) times per every ten (10) years (but not less than once every four (4) years) for the term of the License, the Licensee shall discharge water from the Project if necessary to ensure that a channel maintenance flow is achieved. A channel maintenance flow is achieved when (a) a target flow of at least 4100 cfs instantaneous minimum flow is maintained for twenty-four (24) consecutive hours at USGS Streamflow Gage No. 12138160 or (b) a target flow of at least 4100 cfs is achieved and the Licensee provides a maximum release flow from the Powerhouse, the outlet pipe located adjacent to the City of Everett's Diversion Dam, and Culmback Dam (via the Howell Bunger and 42-inch slide valves) at the time when flow drops below 4100 cfs for a total duration (including the target flow and maximum release) of twenty-four (24) consecutive hours as measured at USGS Streamflow Gage No. 12138160.

Channel Forming Flow: Once (1) every ten (10) years for the term of the License, the Licensee shall discharge water from the Project if necessary to ensure that a channel-forming flow is achieved. A channel-forming flow is achieved when (a) a target flow of at least 6500 cfs instantaneous minimum flow is maintained for twenty-four (24) consecutive hours at USGS Streamflow Gage No. 12138160 or (b) a target flow of 6500 cfs is achieved and the Licensee provides a maximum release flow from the Powerhouse, the outlet pipe located adjacent to the City of Everett's Diversion Dam, and Culmback

Dam (via the Howell Bunger and 42-inch slide valves) for twenty-four (24) consecutive hours at the time when flow drops below 6500 cfs for a total duration (including the target flow and maximum release) of twenty-four (24) consecutive hours as measured at USGS Streamflow Gage No. 12138160, or (c) the Licensee provides a maximum release flow from the Powerhouse, the outlet pipe located adjacent to the City of Everett's Diversion Dam, and Culmback Dam (via the Howell Bunger and 42-inch slide valves) for twenty-four (24) consecutive hours that is timed to achieve, to the extent feasible, a target flow of 6500 cfs at USGS Streamflow Gage No. 12138160. This channel-forming flow obligation shall be in addition to the channel maintenance flow obligation required by section 1.

Flushing Flow

1.1. Reach 1 (River Mile (RM) 0.0 to RM 4.5) Flushing Flows: Two (2) times every year for the term of the License, the Licensee shall discharge water from the Powerhouse if necessary to ensure that a flushing flow is achieved. One (1) of the annual flushing flows shall occur in September and one (1) of the annual flushing flows shall occur between April 1 and May 31. A flushing flow is achieved when a 1500 cfs instantaneous minimum flow is maintained for six (6) consecutive hours at USGS Streamflow Gage No. 12138160. In the event that the Spada Reservoir is below 1420 feet at the time of a scheduled flushing flow, a flushing flow is achieved when a 1200 cfs instantaneous minimum flow is maintained for six (6) consecutive hours at USGS Streamflow Gage No. 12138160.

1.2. Reach 2 (RM 4.5 to RM 9.7) Flushing Flows: The Licensee shall discharge water from the outlet pipe located adjacent to the City of Everett's Diversion Dam if necessary to ensure that two (2) flushing flows are achieved. One (1) of the annual flushing flows shall occur in September and one (1) of the annual flushing flows shall occur between April 1 and May 31. A flushing flow is achieved when either (a) a 500 cfs instantaneous minimum flow is maintained for six (6) consecutive hours immediately upstream of the Powerhouse at RM 4.7 or (b) a 700 cfs instantaneous minimum flow is maintained for three (3) consecutive hours immediately upstream of the Powerhouse at RM 4.7.

1.3. Reach 3 (RM 9.7 to RM 16.1) Flushing Flows: The Licensee shall discharge water from Culmback Dam if necessary to ensure that two (2) flushing flows per year are achieved. One (1) of the annual flushing flows shall occur in September and one (1) of the annual flushing flows shall occur between April 1 and May 31. A flushing flow is achieved when either a 400 cfs instantaneous minimum flow is maintained for six (6) consecutive hours immediately upstream of the City of Everett's Diversion Dam at RM 9.8 or b) a 600 cfs instantaneous minimum flow is maintained for three (3) consecutive hours immediately upstream of the City of Everett's Diversion Dam at RM 9.8.

Upstream Migration Flow

1.4. Reach 1 Upstream Migration Flow: The Licensee shall discharge water from the Powerhouse if necessary to ensure that one (1) upstream migration flow per year is achieved in Reach 1. The upstream migration flow shall occur in September. An upstream migration flow is achieved when a minimum flow between 800 and 1200 cfs as determined by the ARC is maintained or exceeded for six (6) consecutive hours at USGS Streamflow Gage No. 12138160.

1.5. Reach 2 Upstream Migration Flow: The Licensee shall discharge water from the Project if necessary to ensure that one (1) upstream migration flow per year is achieved in Reach 2. The upstream migration flow shall occur in September. An upstream migration flow is achieved when a flow between 400 and 600 cfs instantaneous minimum flow, as determined by the ARC, is maintained for six (6) consecutive hours immediately upstream of the Powerhouse at RM 4.7.

1.6. Reach 3 Upstream Migration Flow: Upon the date that the Licensee completes the Diversion Dam's volitional fish passage modifications, the Licensee shall discharge water from Culmback Dam if necessary to ensure that one (1) upstream migration flow per year is achieved in Reach 3. An upstream migration flow is achieved when a flow of between 300 and 500 cfs minimum flow as determined by the ARC is maintained or exceeded for six (6) consecutive hours immediately upstream of the City of Everett's Diversion Dam at RM 9.8.

Outmigration Flow

5.1. Reach 1 Outmigration Flow: The Licensee shall discharge water from the Powerhouse if necessary to ensure that two (2) outmigration flows per year are achieved. One (1) of the annual outmigration flows shall occur in April and one (1) of the annual migration flows shall occur in May. An outmigration flow is achieved when between 800 and 1200 cfs minimum flow as determined by the ARC is maintained or exceeded for six (6) consecutive hours at USGS Streamflow Gage No. 12138160. The PF Plan shall address the proportion of the outmigration flow that must occur during nighttime hours to best protect juvenile salmonids from predation.

5.2. Reach 2 Outmigration Flow: The Licensee shall discharge water from the outlet pipe located adjacent to the City of Everett's Diversion Dam if necessary to ensure that two (2) outmigration flows per year are achieved. One (1) of the annual outmigration flows shall occur in April and one (1) of the annual migration flows shall occur in May. An outmigration flow is achieved when between 400 and 600 cfs minimum flow as determined by the ARC is maintained

or exceeded for six (6) consecutive hours immediately upstream of the Powerhouse at RM 4.7. The PF Plan shall address the proportion of the outmigration flow that must occur during nighttime hours to best protect juvenile salmonids from predation.

5.3. Reach 3 Outmigration Flow: Upon Commission approval after the ARC determines that an outmigration flow in Reach 3 is needed for timely and effective anadromous fish outmigration, the Licensee shall discharge water from Culmback Dam if necessary to ensure that two (2) outmigration flows per year are achieved. One (1) of the annual outmigration flows shall occur in April and one (1) of the annual migration flows shall occur in May. An outmigration flow is achieved when between 200 and 400 cfs minimum flow as determined by the ARC is maintained or exceeded for six (6) consecutive hours immediately upstream of the City of Everett's Diversion Dam at RM 9.8. The PF Plan shall address the proportion of the outmigration flow that must occur during nighttime hours to best protect juvenile salmonids from predation.

A-LA 9: Minimum Flows

The Licensee shall discharge water from the Project into the Sultan River, in accordance with the flow regime required by this License Article. The purposes of this License Article are to protect, mitigate, and enhance fish and wildlife resources, riparian vegetation, aesthetic resources, and water quality in the Sultan River.

During the course of a water year, if necessary, the Licensee in consultation with the Aquatic Resource Committee (ARC), shall develop a drought controlled flow release schedule for minimum flows when: (1) a drought event resulting in voluntary reductions in domestic water consumption (as described by the 2007 City of Everett's Drought Response Plan as a Stage 2 response to a drought event) is occurring; (2) the release schedule described in this License Article requires interim modification to manage water supply during periods of weather-related shortages; and (3) the drought release schedule shall not undermine the purposes of this License Article. The Licensee shall notify the Commission and shall implement the drought release schedule within seven (7) days of providing such notice, unless otherwise directed by the Commission.

Compliance with the minimum instream flow schedule outlined below shall be monitored at U.S. Geological Survey (USGS) Gaging Stations (12138160 and 12137800) for component releases for Reaches 1 and 2 and calibrated valve curves for Reach 3 Component releases. The Licensee shall commit to funding the operation or operating these two (2) gaging stations in the lower river downstream of Culmback Dam for the License term. For compliance purposes and to account for monitoring imprecision and

release equipment variability, the Licensee is allowed temporary fluctuations of up to five percent of the scheduled flow release as measured at USGS Streamflow Gage No. 12138160 for Reach 1 Component releases, USGS Streamflow Gage No. 12137800 for Reach 2 Component releases, and calibrated valve curves for Reach 3 Component releases.

The flow regime required by this Article has three components, described as follows:

Reach 1 (River Mile (RM 0 to RM 4.5) Component

1.1 Except as provided in section 1.2, the Licensee shall release water from the Powerhouse to maintain instantaneous minimum flows at USGS Streamflow Gage No. 12138160 at all times of 300 cfs.

1.2 If the Licensee determines in consultation with the ARC that a drought event resulting in advisory reductions in domestic water consumption (as described by the 2007 City of Everett's Drought Response Plan as a Stage 1 response to a drought event) is occurring, the Licensee shall release water from the Powerhouse to maintain instantaneous minimum flows at USGS Streamflow Gage No. 12138160 at all times in accordance with the following:

From September 15 through October 31:

Reservoir Level:	Instantaneous Minimum Instream Flow:
Above 1420 ft	300 cfs
Between 1420 ft and 1410 ft	275 cfs
Between 1410 ft and 1405 ft	250 cfs
Below 1405 ft	200 cfs

From November 1 through September 14:

Reservoir Level:	Instantaneous Minimum Instream Flow:
Above 1420 ft	300 cfs
Between 1420 ft and 1415 ft	275 cfs
Between 1415 ft and 1410 ft	250 cfs
Between 1410 ft and 1405 ft	225 cfs
Below 1405 ft	200 cfs

2. Reach 2 (RM 4.5 to RM 9.7) Component

The Licensee shall release water from the outlet pipe located adjacent to the City of Everett's Diversion Dam into the Sultan River to maintain instantaneous minimum

flows at USGS Streamflow Gage No. 12137800 in accordance with the following schedule:

Date:	Instantaneous Minimum Instream Flow:
November 1 – March 15	100 cfs
March 16 – June 15	140 cfs
June 16 – September 14	100 cfs

From September 15 through October 31:

Reservoir Level:	Instantaneous Minimum Instream Flow:
Above 1420 ft	200 cfs
Between 1420 ft and 1415 ft	200 cfs
Between 1415 ft and 1410 ft	175 cfs
Between 1410 ft and 1405 ft	175 cfs
Below 1405 ft	150 cfs

3. Reach 3 (RM 9.7 to RM 16.1) Component

Until 2020, the Licensee shall provide an annual water budget of 20,362 acre-feet for release from the Culmback Dam into the Sultan River.

Starting with the 2020 water budget (July 2020 – June 2021) and for the remaining term of the License, the Licensee shall provide an additional 3,469 acre-feet to the water budget for a total annual water budget of 23,831 acre-feet, unless the ARC decides to delay or postpone this increase to the water budget.

The Licensee shall release the annual water budget as instantaneous minimum flows with a release schedule developed prior to each water budget year (July 1 – June 30) in consultation with the ARC. No later than ninety (90) days prior to the beginning of each water budget year, the Licensee shall prepare and distribute to the ARC a preliminary Flow Report containing a recommended release schedule for the annual water budget for the upcoming water budget year. Following consultation with the ARC, the Licensee shall modify the Flow Report to document the final release schedule determined by the ARC and shall file the finalized Flow Report with the Commission for informational purposes by no later than fifteen (15) days prior to the beginning of each water budget year.

If, during the course of a water budget year, but not more than once every ninety (90) days unless exceptional circumstances exist, the ARC determines that the release schedule described in the Flow Report requires interim modification consistent with the purposes of this Article, the Licensee shall notify the Commission and implement the revised release schedule within seven (7) days of providing such notice, unless otherwise directed by the Commission. Additionally, during the first three (3) water budget years after License issuance, but not more than once every thirty (30) days, if the ARC

determines that additional interim modifications are necessary for the purposes of this Article, the Licensee shall notify the Commission and implement the revised schedule within seven (7) days of providing such notice unless otherwise directed by the Commission.

Prior to the 3,469 acre-foot water budget increase and the date that the Licensee completes the Diversion Dam's volitional fish passage modifications, as described in A-LA 13, in the event that the ARC is unable to reach consensus regarding the release of the water budget by fifteen (15) days prior to the beginning of the water budget year, the following flow regime shall be implemented beginning the first day of the water budget year:

Month:	Default Instantaneous Flow Release Schedule:
July	20 cfs
August	20 cfs
September	20 cfs
October	20 cfs
November	20 cfs
December	20 cfs
January	20 cfs
February	25 cfs
March	30 cfs
April 1- 15	45 cfs
April 16- 30	55 cfs
May 1-15	65 cfs
May 16-31	50 cfs
June	35 cfs

Prior to the 3,469 acre-foot water budget increase but after the date that the Licensee completes the Diversion Dam's volitional fish passage modifications, as described in A-LA 13, in the event that the ARC is unable to reach consensus regarding the release of the water budget by fifteen (15) days prior to the beginning of the water budget year, the following flow regime shall be implemented beginning the first day of the water budget year:

Month:	Default Instantaneous Flow Release Schedule:
July	30 cfs
August	35 cfs
September 1-15	45 cfs
September 16-30	55 cfs
October 1-15	65 cfs
October 16-31	50 cfs
November	20 cfs
December	20 cfs

January	20 cfs
February	20 cfs
March	20 cfs
April	20 cfs
May	20 cfs
June	25 cfs

After the 3,469 acre-foot water budget increase, in the event that the ARC is unable to reach consensus regarding the release of the water budget by fifteen (15) days prior to the beginning of the water budget year, the following flow regime shall be implemented beginning the first day of the water budget year:

Month:	Default Instantaneous Flow Release Schedule:
July	40 cfs
August	45 cfs
September 1-15	55 cfs
September 16-30	65 cfs
October 1-15	70 cfs
October 16-31	60 cfs
November	20 cfs
December	20 cfs
January	20 cfs
February	20 cfs
March	20 cfs
April	20 cfs
May	30 cfs
June	35 cfs

The Licensee shall discharge water to the Sultan River to achieve the scheduled instream flows specified in this License Article. Water releases exceeding the planned flows shall not be charged to the minimum flow water budget.

A-LA 10: Spada Lake Recreational Fishery

See Article 411.

A-LA 12: Fish Habitat Enhancement Plan

Within one (1) year of License issuance, the Licensee shall file with the Commission, for approval, a comprehensive Fish Habitat Enhancement Plan (FHE Plan) to enhance fish habitat in the Sultan River basin. The primary purpose of the FHE Plan is to guide the implementation of projects designed to enhance aquatic habitat in the Sultan

River basin.

The Licensee shall develop the FHE Plan in consultation with the Aquatic Resource Committee (ARC). The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the FHE Plan to the Commission. When filing the FHE Plan with the Commission, the Licensee shall include documentation of consultation, copies of comments and recommendations, and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval, the Licensee shall implement the FHE Plan.

The FHE Plan shall consist of the following actions:

1. Habitat Enhancement Account (HEA): The Licensee shall deposit $2.5 million into an interest-bearing account within thirty (30) days after issuance of the License. In addition, starting the tenth anniversary after issuance of the License and annually for the term of the License, the Licensee shall deposit $200,000 into this account. All funds are based on 2011 dollars and adjusted annually according to the U.S. Department of Labor, Bureau of Labor Statistics Consumer Price Index, All Urban Consumers, for Seattle-Tacoma-Bremerton (CPI-U). The Licensee shall use this account to fund projects developed pursuant to this License Article. The Licensee shall develop a proposed budget for each project. The Licensee shall use the funds provided within this section to implement only those projects specified and provided for in the budget. The Licensee shall not use the funds provided within this section for its administration or oversight of these projects.

2. Habitat Enhancement Projects: Throughout the term of the License, the Licensee shall, in consultation with the ARC, develop and implement, specific HEA-funded aquatic habitat enhancement and restoration projects within and adjacent to the Sultan River. Such projects shall include annual funding (up to $3,000 (2011 dollars)) for the National Resources Conservation Service hydrologic monitoring equipment (SNOTEL or other equipment), unless the ARC determines that such funding is no longer necessary. Such projects may include, but not be limited to: (a) instream structure enhancements; (b) side-channel habitat development; (c) removal, maintenance or construction of large woody debris; (d) removal of barriers to upstream migration; (e) gravel augmentation; (f) land purchases related to aquatic habitat enhancement; (g) purchase of additional water (on a willing-buyer, willing-seller basis) for process or special purpose flows; and (h) other projects that provide for adaptive management in the Sultan basin. However, such projects shall not

include projects which the Licensee would otherwise be required to implement pursuant to any other License Article.

3. Use of Funds: The Licensee, in consultation with the ARC, shall use funds from the HEA established in Paragraph (1) to implement the types of projects identified in this section. In addition, throughout the term of the License, if available funds remain within the Account, the Licensee shall implement other appropriate aquatic habitat enhancement and restoration projects developed by the ARC within the Snohomish River Basin; however, any measures identified in the FHE Plan for implementation in a location that is both (a) outside the Sultan River basin and (b) outside of the then-existing Project boundary, shall be limited to actions that do not result in an expansion of the Project boundary. In the event that a future landslide causes a barrier to upstream migration and the Licensee determines in consultation with the ARC that there is a Project nexus with the barrier, the Licensee will prioritize the use of funds from the HEA to study and, if necessary, modify such landslide to remove the barrier to upstream migration. However, the Licensee need not prioritize the use of the fund if the ARC determines that such prioritization of funds is not biologically warranted in light of the potential alternative uses of the fund and such alternative uses would mitigate for Project impacts. The availability of funds in this account shall not prevent the exercise of reserved authority by Ecology.

4. Threatened Species Take Minimization Measures: The Licensee shall implement measures to minimize the take of Puget Sound Chinook salmon, Puget Sound Steelhead, and bull trout associated with in-water work during development of any physical structures and facilities pursuant to other PM&Es, consistent with the agencies' incidental take statements [attached as Appendices __ and __ to this order]. The Licensee shall not use funds from the HEA to implement such measures.

5. FHE Plan Implementation Schedule: The Licensee shall include a schedule for implementing the FHE Plan, evaluating the success of the enhancement and restoration projects, and modifying the plan, if needed.

6. FHE Report: The Licensee shall file with the Commission, by June 30 of each year, an annual report fully describing its implementation of the FHE Plan during the previous calendar year and a list of planned projects for the current calendar year. The ARC shall have at least thirty (30) days to review and comment on the draft report prior to filing with the Commission. The Licensee shall provide copies of the annual report to the ARC.

A-LA 13: Diversion Dam Volitional Passage

1. Pursuant to the limitations and schedules prescribed below the Licensee shall provide for the construction, maintenance, and operation of safe, timely, and effective upstream and downstream volitional fish passage at the City of Everett's Diversion Dam through structural modifications to the Diversion Dam or sluice way. The Licensee's obligation to construct, maintain, and operate such fishways is subject to the U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS) determining, in consultation with the Aquatic Resource Committee (ARC), that spawning escapement of either Chinook salmon or steelhead trout within the Diversion Dam Index Area (DDIA) equals or exceeds in any one (1) year ten percent (10 %) of the combined total spawning escapement for either Chinook salmon or steelhead trout within the four (4) index areas of the Sultan River, downstream of the Diversion Dam ("passage trigger") and the Licensee obtaining any necessary regulatory approvals.

2. Upon the Service and NMFS determining, in consultation with the ARC, that the spawning escapement above the Diversion Dam exceeds six (6) anadromous redds in any one (1) year, the Licensee shall not reverse flow (divert) or authorize the reverse flow of water from the Sultan River into the Diversion Dam outlet pipe unless required for the City of Everett's water supply needs. If this water supply requirement is triggered, the Licensee shall in consultation with the ARC take appropriate measures to protect Endangered Species Act listed fish. Notwithstanding, in the event that the District installs and operates a fish screen at the outlet pipe, the District may resume reverse flow (divert) or may authorize the reverse flow of water from the Sultan River into the Diversion Dam outlet pipe. Such fish screen shall conform to the National Marine Fisheries Service (NMFS) 2008 Anadromous Salmonid Passage Facility Design Manual, prepared by the NMFS Northwest Region Hydro Division, dated February 8, 2008 (NMFS Design Manual).

3. Diversion Dam Volitional Passage Design Drawings

The Licensee's design for modifying the Diversion Dam to provide upstream and downstream volitional fish passage shall conform to the NMFS Design Manual, while continuing to meet the City of Everett's water supply requirements.

4. Schedule for Providing Diversion Dam Volitional Passage

4.1 Within twelve (12) months after license issuance, the Licensee shall file with the Commission the conceptual design drawings and cost estimates of the proposed Diversion Dam modifications required for achieving volitional fish passage, which may include modifications to the Dam's sluiceway or sluice gate

4.2 Within six (6) months after the fish passage trigger prescribed at 1.0 above occurs, the District will file with the Commission the final design for the Diversion Dam modifications and apply for all necessary permits. Prior to filing the final design with the Commission, the Licensee shall prepare detailed design drawings at the thirty percent (30%)(functional design), fifty percent (50%) and ninety percent (90%) completion stage and consult with the ARC at each stage.

4.3 The Licensee shall not begin construction of the Diversion Dam modifications until the Service and NMFS, in consultation with the ARC, and the Commission approves the final design and plan, and the Licensee has obtained all necessary permits.

4.4 The Licensee shall complete the Diversion Dam modifications no later than two (2) full construction seasons after the Commission approval of the final design and plan and obtaining all necessary permits. For purposes of this prescription for fishways, the construction season is defined as August 1 to August 31.

5. Diversion Dam Volitional Passage Plan

5.1 Within one (1) year after License issuance, the Licensee shall file for Commission approval, a Diversion Dam Volitional Passage Plan (DDVP Plan). The DDVP Plan shall include: (1) the conceptual design drawings and cost estimates of the Licensee's proposed Diversion Dam modifications for achieving upstream and downstream volitional fish passage; (2) the method and schedule for implementing the Diversion Dam proposed modifications in the event that the passage trigger prescribed at 1.0 above occurs; (3) the method and the schedule for monitoring annual spawning escapement within the Diversion Dam Index Area and above the Diversion Dam, as well as, annual spawning escapement within other existing index areas in the Sultan River; (4) the method and schedule for testing and verifying fish passage effectiveness at the Diversion Dam through the use of spawning surveys and/or visual digital recordings; and (5) the program annual monitoring and reporting and ARC consultation requirements.

5.2 The Licensee shall develop the DDVP Plan in consultation with the ARC. The District will allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the DDVP Plan to the Commission. When filing the DDVP Plan with the Commission, the Licensee will include documentation of consultation; copies of comments and recommendations; and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing will include the Licensee's reasons based upon Project-specific information. Upon Commission approval, the Licensee will implement the DDVP Plan.

A-LA 14: Reservoir Operations

Rule Curves for Reservoir Operations

The Licensee shall operate the Project consistent with the Spada Lake Reservoir Rule Curves ("Rule Curves") as shown in Figure 1. The purpose of the Rule Curves is to allow the Licensee to provide a balance of reliable municipal water supply, instream flows, incidental winter flood storage, higher lake levels for early summer recreation, and prevention or reduction of risk of spill following Chinook fall spawning and Steelhead spring spawning. The Rule Curves were developed based on the physical storage capacity of Spada Lake and the hydrology of the Sultan Basin. The Rule Curves divide Spada Lake into five states that shift throughout the water year (July through June). This operational water year is used to minimize the change in storage from year to year.

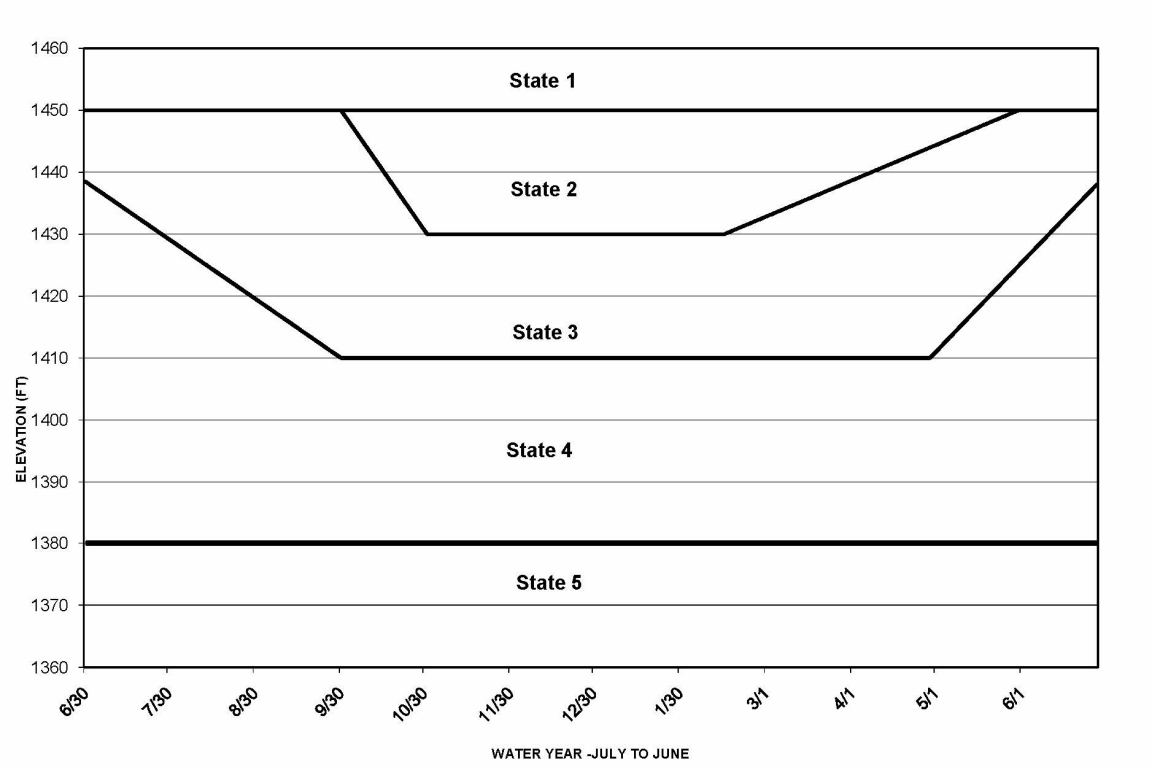

FIGURE 1. SPADA LAKE RESERVOIR OPERATIONAL RULE CURVES

State 1 – Zone of Spill. Above elevation 1450 feet msl, Spada Lake shall be in a state of spill. Therefore, the Licensee shall operate the Powerhouse to withdraw at least 1,300 cfs through the power tunnel.

State 2 – Zone of Potential Spill. The Licensee shall operate the Powerhouse to withdraw

at least 1,300 cfs through the power tunnel unless inflow forecasts show that there is minimal risk of spill.

State 3 – Zone of Discretionary Operation. The Licensee shall operate the Powerhouse consistent with the operation objectives described in section 2.

State 4 – Zone of Water Conservation. The Licensee shall operate the Powerhouse to satisfy the requirements of its water supply obligations to the City of Everett and the instream flow requirements of the Sultan River. The Licensee shall operate the Project to meet the Licensee's other License Article obligations (including minimum instream flows and process flows) and to conserve water unless inflow forecasts and snow pack measurements indicate higher power production is warranted.

State 5 – Zone of Tunnel Protection. Below elevation 1380 feet msl the Licensee shall operate to withdraw water through the Powerhouse only in so far as vortexing does not occur in the power tunnel. Vortexes could cause power tunnel collapse from the negative hydraulic pressures of spiral flow. The Licensee shall satisfy instream flow and water supply requirements at Culmback Dam, the Diversion Dam, and the Powerhouse by releasing water from the exit valves at the base of Culmback Dam. The exit valves are at elevation 1220 feet msl.

State 3 Operation Priorities and Reservoir Elevations Targets

1.1. State 3 Reservoir Elevation Targets. The Licensee shall attempt to maintain a minimum impoundment elevation in Spada Lake Reservoir above 1430 feet msl between July 1 and August 15. Until the temperature conditioning structure described in section 3.2 of A-LA 3 is installed and operational, the Licensee shall target to maintain a minimum impoundment elevation in Spada Lake Reservoir at or above 1420 feet msl from August 16 to September 15. After the temperature conditioning structure described in section 3.2 of A-LA 3 is installed and operational, the License shall attempt to maintain a minimum impoundment elevation in Spada Lake Reservoir above 1415 feet msl from August 16 to September 15.

These minimum impoundment surface elevations targets may be temporarily modified if required by operating emergencies beyond the control of the Licensee. If an impoundment water surface elevation target is so modified, the Licensee shall notify the Aquatic Resource Committee as soon as possible but no later than two (2) business days after each such incident. The Licensee shall document the modification in its annual operations report to the FERC.

1.2. State 3 Operation Objectives. During State 3, the Licensee shall manage Project operations: (1) to allow the Licensee to provide for the City of

Everett's water demands; (2) to meet the Licensee's other License Article obligations (including its minimum instream flow pursuant to A-LA 9 and temperature conditioning obligations pursuant to A-LA 3); (3) to meet its power production needs; (4) to provide for Spada Lake reservoir recreation; (5) to provide for the interests of dam safety; and (6) to reduce the risk of flooding in the City of Sultan.

A-LA 15: Adaptive Management Plan

Within 180 days of License issuance, the Licensee shall file with the Commission, for approval, an Adaptive Management Plan (AM Plan). This AM Plan shall document how the Licensee shall: (1) address water use issues, specifically from Spada Lake Reservoir, when refill, Project operations, flow releases and Spada Lake Reservoir water surface elevations may conflict; and (2) address the process for evaluating and adaptively managing within the constraints of the specific License Articles.

The Licensee shall develop the AM Plan in consultation with the Aquatic Resource Committee (ARC). The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment and make recommendations before submitting the AM Plan to the Commission. When filing the AM Plan with the Commission, the Licensee shall include documentation of consultation, copies of comments and recommendations, and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

Upon Commission approval, the Licensee shall implement the AM Plan.

A-LA 16: Steelhead Planting Program

Deleted. Removed from applicant's proposal.

A-LA 17: Fisheries and Habitat Monitoring Plan

Within one (1) year after License issuance, the Licensee shall file with the Commission, for approval, a Fisheries and Habitat Monitoring Plan (FHM Plan) for the Sultan River. The Licensee shall implement the FHM Plan throughout the term of the License, in consultation with Aquatic Resource Committee (ARC).

The Licensee shall develop the FHM Plan in consultation with the ARC. The Licensee shall allow a minimum of thirty (30) days for members of the ARC to comment

and make recommendations before submitting the FHM Plan to the Commission. When filing the FHM Plan with the Commission, the Licensee shall include documentation of consultation, copies of comments and recommendations, and specific descriptions of how comments and recommendations from the ARC are accommodated by the Licensee's plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons based upon Project-specific information.

The purpose of the FHM Plan is to inform the implementation of other aquatic License Articles. The FHM Plan shall include a schedule for the Licensee's: (1) implementation of the plan consistent with this License Article; (2) consultation with the ARC regarding the results of the monitoring and a schedule for providing preliminary monitoring data; and (3) filing of results, comments, and the Licensee's response to these comments with the Commission.

Implementation of the plan shall not commence until the Licensee is notified by the Commission that the filing is approved. Upon Commission approval, the Licensee shall implement the plan.

The Licensee shall file with the Commission, by June 30 of each year, an annual report fully describing the monitoring efforts of the previous calendar year. By December 1 of each year, the Licensee shall file with the Commission a notice describing the monitoring activities required under the plan for the following year. The ARC shall have at least thirty (30) days to review and comment on the draft report prior to filing with the Commission. The Licensee shall provide copies of the annual report to the ARC.

As provided below, the ARC may modify the monitoring program methods and frequencies of data collection and reporting requirements to more effectively meet the specific purpose of a monitoring activity.

The following guidelines shall be used in developing and implementing the FHM Plan: (a) monitoring and studies shall be relevant to the License, (b) monitoring and studies shall be chosen and conducted so that they provide useful information for Project management decisions or establishing compliance with License conditions, and (c) monitoring and studies shall be cost-effective in meeting the specific purpose of the monitoring activity.

For purposes of implementing the FHM Plan, each year is defined on a calendar year basis (i.e., January through December). Except as provided in other License Articles, this Plan covers monitoring and studies to be conducted by the Licensee during all years through the term of the License. Monitoring of A-LA 12 habitat projects shall be addressed within the Plan for such projects. Where years are specified, Year 1 is the first year after the Plan is approved.

The FHM Plan shall consist of monitoring the following:

Fish Habitat in the Sultan River

1.1. Riverine Habitat

1.1.1. Purpose

The purpose of the riverine fish habitat monitoring program is to characterize and quantify habitat types (including side channel, riparian, and flood plain) in the Sultan River to determine how habitat restoration efforts and Project operations affect fish habitat conditions over the life of the License. Because the majority of the restoration efforts are focused in the alluvial portion of Reach 1, the habitat monitoring program shall focus primarily on habitat changes in the Sultan River downstream of River Mile (RM) 2.7.

1.1.2. Method

The Licensee shall assess the quantity and quality of fish habitat in the lower Sultan River by employing standard Timber, Fish and Wildlife (TFW) Agreement *(Pleus et al 1999)* or comparable methods, consistent with the recent assessment of the Sultan River conducted under relicensing Study Plan 18. The Licensee shall assess habitat units, such as pools, riffles and glides, substrate composition, gradient, channel exposure, woody debris, bank stability, and riparian vegetation content. The Licensee shall use a statistically-valid approach consistent with the TFW methods in assessing both the quantity and quality of habitat, and in enabling detection of changes to habitat condition between sampling events. The Licensee shall also use digital photography to document conditions at a series of fixed permanent photo points. The Licensee shall conduct surveys during late summer to assess conditions under low flows and for consistency between surveys.

The river channel of interest is already divided into distinct process reaches based on channel morphology and habitat types consistent with existing baseline habitat information. Analysis and data summarization shall be performed consistent with these reach boundaries.

1.1.3. Frequency

The initial habitat survey as part of the relicensing studies (Study Plan 18) shall constitute the initial baseline for all subsequent surveys.

During Year 1 through Year 10, if there is a high flow event or other major event causing change, the Licensee shall perform a subsequent habitat survey. From Year 11 throughout the term of the License, the Licensee shall perform habitat surveys once every five (5) years (starting in Year 16) unless the frequency of

such surveys is modified by the ARC.

1.2. Water Temperature

1.2.1. Purpose
The purpose of water temperature monitoring is to document temperature regimes in the Sultan River. This data is needed to help analyze the biological information collected through separate monitoring efforts (i.e., spawning timing, emergence timing, juvenile size or growth rates, distribution, habitat utilization, and species interactions).

1.2.2. Method
The Licensee shall install thermographs to monitor water temperatures on an hourly basis in the Sultan River at the South Fork Sultan River, the base of Culmback Dam, upstream and downstream of the Diversion Dam, upstream and downstream of the Powerhouse, at the confluence with the Skykomish River, and in the Skykomish River immediately upstream and downstream of the confluence with the Sultan River.

1.2.3. Frequency
The Licensee shall deploy, operate and maintain thermographs at the above-listed locations in the Sultan River continuously throughout the term of the License, unless the frequency of monitoring or locations are modified by the ARC.

Fish Populations in the Sultan River

1.2. Spawner Abundance, Distribution, and Timing in the Sultan River

1.2.1. Purpose
The purpose of assessing spawner abundance, distribution, and timing is to evaluate trends in adult salmon and steelhead escapement and habitat utilization over the term of the License.

1.2.2. Method
The Licensee shall conduct surveys using standard methods employed in the region to assess spawner abundance, spawner distribution, spawning timing, and species composition.

Such surveys shall enumerate redds and/or fish (live and dead) depending on species and location within the river. Such surveys shall be conducted using one or more of the following techniques depending on species and location within the river: foot surveys, raft surveys, and snorkel surveys. Where possible and for data consistency and compatibility, these surveys shall use the same index areas and

procedures used under the current License and in place since 1991. It is expected that methods and procedures that work best to achieve the purpose shall be evaluated during the first several years of the License. Once the methods have been evaluated and the most appropriate ones selected, they shall be applied consistently over the term of the License, unless modified by the ARC.

The Licensee shall collect, compile, and report the following: (1) spawner abundance by species, production origin (hatchery versus wild), and location; (2) species distribution; and (3) spawning timing.

The Licensee shall include in the FHM Plan provisions for appropriate and reasonable analysis of data from the above surveys. The Licensee shall implement such provisions.

1.2.3. Frequency
The Licensee shall conduct assessments annually during the spawning seasons for each species throughout the term of the License.

1.3. Juvenile Production, Distribution, and Habitat Utilization in the Sultan River

1.3.1. Purpose
The purpose of assessing juvenile production, distribution, and habitat utilization in the Sultan River is to evaluate reproductive success and species behavior over the term of the License.

1.3.2. Method
The Licensee shall install and operate a juvenile trap in the lower Sultan River to assess natural salmonid production in the Sultan River.

The Licensee shall collect, compile, analyze and report the following juvenile trap data by species and life stages: numbers of fish caught, timing, fish population estimates, hatchery and wild composition, size distribution, and trap efficiency.

Under circumstances defined in the monitoring plan, the Licensee shall conduct supplemental assessments using snorkeling and/or backpack electrofishing surveys, subject to obtaining appropriate permits, to evaluate such things as rearing, fish distributions, relative abundance, habitat utilization, size, and life stage survival.

1.3.3. Frequency
The Licensee shall operate the juvenile trap to assess juvenile production annually in the Sultan River for the first six (6) years after License issuance and then two (2) out of every six (6) years thereafter for the term of the License.

The Licensee shall operate the trap during the period that juveniles are expected to emigrate from the Sultan River. During Years 1 and 2, the Licensee shall operate the trap beginning February 1 through June 30. Based upon the results obtained during Years 1 and 2, thresholds to reduce sampling days and periods shall be developed by the ARC for subsequent years. The goal is to have sampling sufficient to encompass at least 90 percent of the out-migration period.

The Licensee shall operate the trap between 30 and 40 percent of the hours in any given week and follow standard procedures employed by WDFW and the Tulalip Tribes, except that the trap shall not be operated during severe flow events. During Years 1 and 2, such operations shall include weekends. After such time, unless the sampling results indicate such operations are necessary, the trap shall not be operated on weekends. Traps shall be scheduled to fish for four (4) day and four (4) night periods per week. Each fishing period shall last a minimum of six (6) hours. This operation schedule may be adjusted by the ARC if an alternative sampling schedule produces acceptable data for assessing juvenile production. Also, during periods when few fish are emigrating, trapping frequency can be reduced to fewer days per week. Exact scheduling shall be determined by the ARC.

A-LA 18: Water Supply

Omitted (see Article 409)

C-LA 1: Historic Properties Management Plan

The Licensee shall implement the Historic Properties Management Plan (HPMP). The HPMP is attached as Appendix 6 to the Settlement Agreement.

R-LA 1: Recreation Resources Management Plan

The Licensee shall implement the Settlement Agreement Recreation Resource Management Plan (RRMP). The RRMP is attached as Appendix 5 to the Settlement Agreement.

T-LA 1: Terrestrial Resources Management Plan

The Licensee shall implement the Licensee's Terrestrial Resource Management Plan (TRMP). The TRMP is attached as Appendix E to the Project's Final License Application (FLA) (May 29, 2009).

T-LA 2: Noxious Weed Plan

The Licensee shall implement the Licensee's Noxious Weed Management Plan (NWMP). The NWMP is attached as Appendix D to the Project's Final License Application (FLA) (May 29, 2009).

T-LA 3: Marbled Murrelet Habitat Protection Plan

The Licensee shall implement the Marbled Murrelet Habitat Protection Plan (MMHPP). The MMHPP is attached as Appendix G to the Project's Final License Application (FLA) (May 29, 2009).

W-LA 1: Water Quality Protection Plan

See Appendix B, Washington Department of Ecology water quality certification condition 9.0.

Document Content(s)