

126 FERC ¶ 61,138
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Acting Chairman;
Sudeen G. Kelly, Marc Spitzer,
and Philip D. Moeller.

Public Utility District No. 1 of Chelan County, Washington Project No. 2145-060

ORDER ON OFFER OF SETTLEMENT AND ISSUING NEW LICENSE

(Issued February 19, 2009)

Introduction

1. On June 29, 2004, Public Utility District No. 1 of Chelan County, Washington, (Chelan PUD) filed an application for a new license, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ for the continued operation and maintenance of the Rocky Reach Hydroelectric Project No. 2145. The new license application was prepared pursuant to the Commission's alternative licensing process.² The project's installed capacity under this license is 865.76 megawatts (MW).³ The project is located on the mid-Columbia River in Chelan County, Washington,⁴ and occupies about 1,500 acres, of which about 164 acres are federal lands managed by the U.S. Department of the Interior's

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

² 18 C.F.R. § 4.34(i) (2008).

³ The installed capacity reported in the license application was 1,237.40 MW. In 1995, the Commission amended its annual charge regulations to define "authorized installed capacity." *Charges and Fees for Hydroelectric Projects*, Order No. 576, 60 Fed. Reg. 15,040 (Mar. 22, 1995), FERC Stats. & Regs. ¶ 31,016 (1995). On November 19, 2004, after the license application was filed, and pursuant to Order No. 576, the Commission staff issued an Order Amending License and Revising Annual Charges under Article 43(i), changing the installed capacity for the project from 1,237.40 MW to 865.76 MW. See 109 FERC ¶ 62,110 (2004).

⁴ Because the Columbia River is a navigable waterway of the United States, the project is required to be licensed pursuant to section 23(b)(1) of the FPA, 23 U.S.C. § 817(1) (2006). See *Public Utility District No. 1 of Chelan County*, 18 FPC 33 (1957).

Bureau of Land Management (BLM). As discussed below, we are issuing a new license for the project.

Background

2. An original license for the project was issued in 1957,⁵ and it expired on June 30, 2006. Since then, Chelan PUD has operated the project under annual licenses pending the disposition of its new license application.

3. On January 12, 2005, the Commission issued a notice accepting Chelan PUD's application to relicense the project and soliciting motions to intervene, comments, terms and conditions, prescriptions, and recommendations.⁶ Motions to intervene or notices of intervention were filed by the U.S. Department of the Interior (Interior); U.S. Forest Service; National Marine Fisheries Service (NMFS); Washington Department of Fish and Wildlife (Washington DFW); Entiat School District No. 127 (Entiat School); City of Entiat, Washington (City of Entiat); Alcoa, Inc.; American Rivers; Avista Corporation; Columbia River Inter-Tribal Fish Commission (CRITFC); the Confederated Tribes of the Umatilla Indian Reservation (Umatilla); and Washington Department of Ecology (Washington Ecology).⁷

4. Late motions to intervene were filed by the Confederated Tribes and Bands of the Yakama Nation (Yakama); Portland General Electric Company (PGE); and Puget Sound Energy, Inc. (Puget). The Commission Secretary granted the late-filed motions to intervene by notices issued April 4, 2005 (the Yakama and PGE) and June 23, 2005 (Puget).

5. Comments, and/or terms, conditions, prescriptions, and recommendations were filed by Washington DFW, Forest Service, NMFS, Washington Ecology, the Yakama, the Umatilla, and PGE. Chelan PUD filed reply comments on April 27, 2005, May 11, 2005, and July 15, 2005.

⁵ 18 FPC 33 (1957). The original license was granted for 50 years with an effective date of July 1, 1956.

⁶ This notice was published in the *Federal Register* on January 24, 2005. 70 Fed. Reg. 3370 (2005). The notice established a 60-day deadline for filing responses.

⁷ The motions were timely and unopposed, and were therefore automatically granted pursuant to Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. See 18 C.F.R. § 385.214(c)(1) (2008).

6. On August 31, 2005, Commission staff issued a draft environmental impact statement (EIS) for the project and solicited the filing of comments within 60 days. Comments were filed by Washington Ecology; Interior; Bonneville Power Administration (BPA); Chelan PUD; City of Entiat; Washington DFW; Forest Service; the Yakama; Public Utility District No. 1 of Douglas County (Douglas PUD); the Umatilla; Entiat School; Public Utility District No. 1 of Grant County (Grant PUD); Lee Tideman; Timothy James; Ellen Reynoldson; Jack Feil; William Walter; Blue Star Growers, Inc.; Wenatchee Sportsmen's Association; U.S. Environmental Protection Agency (EPA); Washington State Attorney General's Office; Thomas Feil; and Andy Dappen.⁸ Chelan PUD filed reply comments. Staff considered all of the comments received on the draft EIS in preparing the final EIS,⁹ which was issued on August 4, 2006.

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

8. On March 20, 2006, Chelan PUD submitted the Rocky Reach Comprehensive Settlement Agreement (Settlement Agreement) on behalf of itself and a number of entities. Signatories to the Settlement Agreement are Chelan PUD, U.S. Fish and Wildlife Service (FWS), U.S. National Park Service (National Park Service), BLM, Washington DFW, Washington Ecology, Washington State Parks and Recreation Commission (Washington State Parks), Confederated Tribes of the Colville Indian Reservation (Colville), the Yakama, City of Entiat, Entiat Coalition, and Alcoa Power Generating, Inc.¹⁰ The Settlement Agreement was publicly noticed for comments on March 30, 2006,¹¹ and was addressed in the EIS.

⁸ Commission staff also held a technical conference on October 19, 2005, to provide interested persons an opportunity to comment on the draft EIS.

⁹ Unless otherwise specified, EIS refers to the final EIS.

¹⁰ NMFS did not sign the Settlement Agreement because its regulatory obligations were addressed in the Rocky Reach Anadromous Fish Agreement and Habitat Conservation Plan (which is a condition of the current license and, as discussed in this order, is also included as a condition of this license), but stated that it supports the Settlement Agreement and urged the Commission to approve it. *See* letter from Keith Kirkendall, Chief, NMFS FERC and Water Diversions Branch, filed June 27, 2006.

¹¹ 71 Fed. Reg. 16,148 (2006).

Project Description

A. Project Area

9. The Columbia River is 1,200 miles long, of which 460 miles are in Canada and 740 miles are in the United States. It drains an area of 259,000 square miles, including a great part of Washington and Oregon, substantially all of Idaho, the western portion of Montana, and smaller areas in Wyoming and Utah. The Columbia River historically produced the world's largest runs of Chinook salmon and steelhead trout, major runs of coho and sockeye salmon, and small numbers of chum and pink salmon. However, the 1930s saw the beginning of construction of a series of major dams planned for the Columbia and Snake Rivers for the purposes of electric power,¹² flood control, and irrigation, which contributed to the decline of several of these fish species.

10. Proceeding downstream from the Canadian-U.S. border, the first two dams on the Columbia River are Grand Coulee and Chief Joseph (at river miles (RM) 597 and 544, respectively), both of which are federally owned and operated. The next five dams are all under Commission license: the 774-MW Wells Project No. 2149 (at RM 516); the Rocky Reach Project No. 2145 (at RM 474); the 623-MW Rock Island Project No. 943 (at RM 453); and the 1,893-MW Priest Rapids Project No. 2114, which includes two dams (at RM 415 and 397). These seven dams are collectively called the "mid-Columbia dams."

11. Downstream of the mid-Columbia dams, the Columbia River is joined by the Snake and Walla Walla Rivers, and turns west toward the ocean. On this stretch of the river, which is called the main stem, there are four federal dams (upstream to downstream): McNary, John Day, The Dalles, and Bonneville.

12. In the project area, there are more than 41 species of fish, including 15 coldwater species, 18 coolwater species, and 8 warmwater species. These species are either native to the project area, introduced, or stocked.

B. Project Facilities

13. The project consists of an 8,235-acre reservoir¹³ and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the river. The dam consists of a non-overflow west forebay wall section; a powerhouse containing 11 vertical shaft integrated Kaplan

¹² The Columbia River and its tributaries produce one-third of the hydroelectric power in the United States.

¹³ The Rocky Reach reservoir extends 43 miles upstream to the tailrace of the Wells Dam.

turbine/generator units; a non-overflow center dam section; a gated spillway section; and a non-overflow east abutment section. There is an upstream fish passage facility consisting of a fish ladder located behind the forebay wall with 3 entrances (near turbine/generator unit no. 1, at the center dam, and between spillway bays 8 and 9); a downstream fish passage facility consisting of a surface collection system (adjacent to the forebay wall and units 1, 2, and 3), intake screens (at units 1 and 2), and a bypass conduit (up to 9 feet in diameter routed along the downstream side of the powerhouse and spillway, through a fish collection facility, and to an outfall point about 1,700 feet downstream of the dam and 450 feet from the east bank); fish rearing facilities on Turtle Rock Island and near the dam's left abutment, both upstream and downstream of the dam; and an 800-kW small turbine/generator¹⁴ (generating from attraction flows provided for the fish passage facility) at the entrance to the fish ladder between spillway bays 8 and 9. There are also five 230-kilovolt (kV) transmission lines, connecting the powerhouse with the switchyard located 1,600 feet away on the east bank, and seven project recreation facilities. A more detailed description of the project facilities is contained in Ordering Paragraph (B)(2).

C. Project Boundary

14. The existing project boundary, consisting of lands necessary for the safe operation and maintenance of the project and other purposes, such as recreation, shoreline buffer, and protection of environmental resources, encompasses about 1,500 acres.

15. The project boundary, which extends for about 43 miles along the Columbia River, encloses the reservoir and the tailrace below the Rocky Reach Dam. It is defined by contour lines on each side of the reservoir beginning at elevation 707 feet NGVD¹⁵ and increases laterally with distance upstream of the dam to take into account water levels at high flows. At a few locations, the project boundary expands an average of 300 feet beyond the contour lines to enclose recreational sites. All project facilities including the dam, the powerhouse, the reservoir, the fish passage facility, and the seven project recreation facilities, are located within the project boundary. The transmission line right-of-way boundary for the project ranges from 100 feet to 500 feet in width. Also within the boundary is a parcel of land (almost 22 acres) along the shore upstream of the

¹⁴ This unit was authorized per Commission order dated October 27, 2003, but has yet to be installed per letter from Chelan PUD, dated April 14, 2006. 105 FERC ¶ 61,132 (2003).

¹⁵ All elevations in this document are referenced to the National Geodetic Vertical Datum of 1929. To convert to the newer U.S. Coast and Geodetic Survey datum commonly used on the Columbia River, subtract 1.78 feet.

reservoir, which will be used for a hatchery or future recreation.¹⁶

16. There are 164.04 acres of land within the boundary that are federal lands under the jurisdiction of BLM.¹⁷ The license application proposes no change to the project boundary.

D. Project Recreation Facilities

17. There are seven project recreation facilities: (1) the 38-acre Rocky Reach Visitor Center and Park; (2) the 65-acre Lincoln Rock State Park; (3) the 5-acre Orondo Park; (4) the 40-acre Entiat Park; (5) the 140-acre Daroga State Park; (6) the 53-acre Chelan Falls/Powerhouse Park; and (7) the 56-acre Beebe Bridge Park. The project recreation facilities are located within the project boundary and not on federal lands. Common amenities to the recreation facilities include day-use facilities (such as picnic areas), parking areas, restrooms, and barrier-free facilities. All of the recreation facilities, except for the Rocky Reach Visitor Center and Park, have a swimming beach, boat launches, and docks. The Rocky Reach Visitor Center and Park has a formal garden, a visitor center, a museum, interpretive facilities, and trails. Campsites are located at Lincoln Rock State Park, Orondo Park, Entiat Park, Daroga State Park, and Beebe Bridge Park. Lincoln Rock State Park, Daroga State Park, Chelan Falls/Powerhouse Park, and Beebe Bridge Park also provide trails.

18. Chelan PUD developed and owns six of the seven recreation facilities, excluding Orondo Park, which is owned in part by Chelan PUD and the Port of Douglas County. Chelan PUD operates and maintains four of the seven recreation facilities: Rocky Reach Visitor Center and Park; Orondo Park; Chelan Falls/Powerhouse Park; and Beebe Bridge Park. Lincoln Rock State Park and Daroga State Park are operated and maintained by Washington State Parks pursuant to an agreement with Chelan PUD, and Entiat Park is operated and maintained by the City of Entiat (also pursuant to an agreement with Chelan PUD). Chelan PUD proposes to improve the recreation facilities, as discussed later in this order.

E. Current Project Operation

19. The project is an integral part of the seven-dam Mid-Columbia River Hydroelectric System. Each of the seven dams is operated in accordance with the terms

¹⁶ See Order Amending License, 118 FERC ¶ 62,116 (2007).

¹⁷ See *Public Utility District No. 1 of Chelan County, Washington*, 41 FERC ¶ 62,008 (1987).

of the Mid-Columbia Hourly Coordination Agreement (HCA),¹⁸ which seeks to coordinate operations for all of the mid-Columbia projects for the best use of flows for generation and to meet fishery and other environmental resource needs.

20. Each day, the participants of the HCA provide the coordinator with an estimated schedule of desired generation from their project(s). Federal operators at the upstream Chief Joseph and Grand Coulee developments provide the coordinator with an estimate of water expected to be discharged from these two dams. The coordinator then, based on information (i.e., anticipated flows, reservoir levels, and load) provided by the HCA participants and upstream federal operators, determines an estimated operation schedule for the following day.

21. The project is also operated according to the provisions of the Pacific Northwest Coordination Agreement, which coordinates generation and storage projects in the Columbia River system for the purpose of achieving the most efficient use of water to meet the electrical loads of the region's utilities. Through the agreement's annual regulation process, the maximum firm power that can be expected from the region's system is calculated. The agreement then provides for the allocation to the parties of water on a monthly basis, optimized as if all the projects in the Columbia River system were operated by a single owner. The agreement's goals are, in order of priority: (1) meeting nonpower requirements such as flood control or environmental measures; (2) ensuring that parties to the agreement can produce their firm capabilities; (3) refilling the reservoirs to full at the end of the current water year; and (4) producing as much non-firm power as possible. Because the project has limited storage available, the project must pass in real-time most of the water it receives from the much larger Grand Coulee Dam and can only alter flows on an hourly basis.

22. The Hanford Reach Agreement, filed April 19, 2004, by Grant PUD and signed by Chelan PUD, Douglas PUD, BPA, NMFS, Interior, Washington DFW, and the Colville, also includes coordination of project operations among the seven mid-Columbia River hydroelectric projects, including the Rocky Reach Project, to protect and enhance fall Chinook salmon in the Hanford Reach.

23. Chelan PUD operates the project reservoir with a normal maximum headwater elevation of 707 feet NGVD. Project operation, including decisions to start, stop, and adjust the output of the 11 generating units as necessary to follow the operation schedule

¹⁸ The HCA was originally signed for a one-year experimental period from July 1, 1972, to June 30, 1973. The agreement was extended numerous times, and the most recent renewal extends the term of the HCA to November 1, 2017. *See* EIS, section 2.1.2.

provided by the coordinator, is completely automated and backed up with around-the-clock, on-duty plant operators who monitor operations and can override computer control if needed.

24. During a normal water year, the project operates at a plant factor of 55 percent. During high water years, the project operates at a higher plant factor and more often spills flows in excess of plant capacity. When operating at a higher plant factor, the project is able to operate at or near full load for longer periods without drafting the storage from the reservoir. Under lower water supply conditions, the number of hours that the plant can sustain operations at or near peak load diminishes.

25. The Commission amended the existing license on June 21, 2004, to include the Anadromous Fish Agreement and Habitat Conservation Plan (HCP) for the Rocky Reach Project.¹⁹ The HCP is a programmatic approach developed by Chelan PUD and the fisheries agencies and tribes for reducing and eliminating the effects of the Rocky Reach Project on salmon and steelhead. In orders approving the HCP, the Commission stated that requiring Chelan PUD to implement the HCP “will serve the public interest by putting into place a long-term program to aid in the recovery of the endangered species and help to prevent other salmonids from becoming listed.”²⁰ As part of the HCP implementation, Chelan PUD filed an annual report on April 11, 2008, indicating their compliance with the HCP. This report showed that Chelan PUD has achieved the HCP’s survival standards for coho and steelhead; tested survival of juvenile Chinook and sockeye salmon; monitored and modified the operation of the juvenile fish bypass; implemented predator control programs; provided hatchery releases of spring and summer Chinook salmon, sockeye salmon, and steelhead; and funded implementation of various projects to improve salmon and steelhead habitat.

26. Chelan PUD is not proposing any change to the project’s operation, installed or dependable capacity, or its average annual generation. However, its proposal includes a number of environmental measures, pursuant to the Settlement Agreement described below.

Settlement Agreement

27. The Settlement Agreement addresses the signatories’ environmental, recreational, and cultural resources concerns while preserving power production at the project. The Agreement has 21 sections and includes proposed license articles and a Comprehensive Plan, which contains detailed requirements for nine management plans proposed to be

¹⁹ 107 FERC ¶ 61,280 and 107 FERC ¶ 61,281 (2004).

²⁰ 107 FERC ¶ 61,281 P 1.

included as conditions of this license.

28. In the Shoreline Erosion Management Plan, Chelan PUD proposes to perform erosion control work at four demonstration sites to educate the public about erosion control techniques. Under the plan, Chelan PUD proposes to conduct an inventory of shoreline erosion and to monitor the effectiveness of repairs.

29. In the Water Quality Management Plan, Chelan PUD proposes meeting total dissolved gas (TDG) criteria, monitoring and modeling of water temperature criteria, continuing project operation consistent with existing agreements, monitoring water quality in macrophyte beds, monitoring and controlling aquatic invasive species, and implementing spill prevention.

30. In the White Sturgeon Management Plan, Chelan PUD proposes stocking and monitoring of juvenile white sturgeon to increase the population size in the Rocky Reach reservoir. The plan includes preparation of a brood stock collection plan; implementation of a white sturgeon supplementation program by releasing up to 6,500 yearling white sturgeon into the reservoir each year for three years; determination of a long-term source of fish to be used for continuing the supplementation program; conducting monitoring; conducting tracking surveys of juvenile white sturgeon to determine emigration rates from the reservoir; compiling information on other white sturgeon supplementation programs in the region; and tracking reproductively viable adult white sturgeon for the purpose of identifying potential spawning locations and evaluating spawning activity and habitat utilization.

31. In the Bull Trout Management Plan, Chelan PUD proposes continuing to provide upstream passage for adult bull trout through the existing upstream fishway and downstream passage of adult and sub-adult bull trout through the existing downstream bypass; continuing counting bull trout in the upstream fishway; conducting an adult bull trout telemetry program to continue monitoring upstream and downstream passage; identifying and implementing modifications to the upstream fishway, downstream bypass, or operations to reduce identified impacts on bull trout passage; considering woody debris collection and hauling for tributary enhancements; funding collection of bull trout tissue samples and genetic analysis; and participating in information exchanges with other entities conducting bull trout research and regional efforts to explore methods to monitor upstream and downstream movement of sub-adult bull trout.

32. In the Pacific Lamprey Management Plan, Chelan PUD proposes continuing to provide upstream and downstream passage for Pacific lamprey through the project's upstream fishway and downstream bypass, in accordance with the operation criteria for anadromous salmonids and compatible bull trout migration guidelines; conducting upstream fishway passage counts of adult Pacific lamprey; completing and updating a literature review for the effectiveness of lamprey passage measures implemented at other

hydroelectric projects in the Columbia and Snake Rivers; investigating and implementing upstream fishway modifications to provide Pacific lamprey passage; implementing a monitoring program to evaluate fishway modifications; developing a plan to implement measures to address ongoing project effects on downstream adult passage, if any effects are identified through the monitoring program; conducting monitoring every 10 years to confirm the success of any modifications once adult passage success has been achieved; monitoring juvenile Pacific lamprey impingement and implementing measures to address any ongoing project impacts; measuring the type and magnitude of any ongoing project impacts on the downstream passage of juvenile lamprey; determining juvenile Pacific lamprey presence/absence and relative abundance in the reservoir; and identifying and implementing measures to address unavoidable impacts to achieve no net impact.

33. In the Resident Fish Management Plan, Chelan PUD proposes continuing to fund a fish rearing program conducted by Washington DFW to produce approximately 30,000 pounds of rainbow trout or other fish species annually during the term of the new license and any subsequent annual licenses; making available an amount not to exceed \$50,000 for resident fish enhancement measures during the first 10 years of the new license and an amount not to exceed \$62,000 after year 10 of the new license; making available an amount not to exceed \$60,000 to fund introduction of a new species in the reservoir to enhance recreational fishing; and conducting resident fish monitoring in the reservoir, with initial focus on predatory fish to monitor any changes in abundance or species composition in the resident fish populations in the reservoir.

34. In the Wildlife Management Plan, Chelan PUD proposes funding for: (1) restoration, maintenance, and improvement of the Chelan and Rocky Reach Wildlife Areas; (2) habitat restoration on Washington DFW lands; (3) habitat restoration on BLM lands; (4) habitat restoration on Forest Service lands; (5) an integrated noxious weed control program; (6) noxious weed control, specifically to protect rare, threatened and endangered botanical species; (7) rare, threatened and endangered botanical species monitoring; and (8) a conservation easement for rare, threatened and endangered botanical species protection. Also, the plan calls for providing a riparian conservation easement on Chelan PUD Sun Cove property and conducting wildlife surveys.

35. In the Historic Properties and Cultural Resources Management Plan, Chelan PUD proposes surveying and protecting areas of potential effects.

36. In the Recreation Resources Management Plan, Chelan PUD proposes continuing operation and maintenance of Rocky Reach Visitor Center and Park, Entiat Park, Chelan Falls/Powerhouse Park, Beebe Bridge Park, Daroga State Park and Lincoln Rock State Park; renovating and enhancing Lincoln Rock State Park and Daroga State Park; developing a one mile paved trail from Lincoln Rock State Park to a fish by-pass viewing station approximately 300 feet downstream of Rocky Reach Dam; designing and constructing an irrigation system throughout Orondo Park; revitalizing Entiat Park;

convening annual meetings with the community of Entiat; completing an update of the Recreation Use Assessment and Recreation Needs Forecast and Analysis in year 23 of the new license; and developing and implementing a recreation resources monitoring and evaluation program.

37. Finally, Chelan PUD also proposes continued implementation of the HCP, discussed above.

38. In general, the Commission looks with favor on settlements in licensing cases. When parties are able to reach settlements, it can save time and money, avoid the need for protracted litigation, promote the development of positive relationships among entities who may be working together during the course of a license term, and give the Commission, as it acts on license and exemption applications, a clear sense as to the parties' views on the issues presented in each settled case.²¹ At the same time, the Commission cannot automatically accept all settlements, or all provisions of settlements. Section 10(a)(1) of the FPA requires that the Commission determine that any licensed project is "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 (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes referred to in section 4(e)."²²

39. In light of the foregoing, and as discussed in detail below, this license includes the Shoreline Erosion, Water Quality, White Sturgeon, Bull Trout, Pacific Lamprey, Resident Fish, and Historic Properties and Cultural Resources Management Plans. This license also includes, with certain modifications, the Wildlife and Recreation Resources Management Plans. Also, this license requires continued implementation of the HCP.

Tribal Interests

40. The Yakama, Umatilla, and Colville are federally recognized tribes with a noted interest in this proceeding. The Yakama and Umatilla entered into treaties with the

²¹ See *Settlements in Hydropower Licensing Proceedings under Part I of the Federal Power Act*, 116 FERC ¶ 61,270, at P 2-12 (2006).

²² 16 U.S.C. § 803(a)(1) (2006).

United States, and the Colville Indian Reservation was created by executive order.²³ While the project is not located on tribal land, the treaties provide for fishing by tribal members at usual and customary places, which include the project area.

41. The Commission recognizes the unique relationship between the United States and Indian tribes as defined by treaties, statutes, and judicial decisions. We carry out our responsibilities towards Indian tribes in the context of the FPA and other statutes that establish Commission responsibilities. We recognize the cultural and economic significance to the tribes of the aquatic species and habitat involved in this proceeding, and carry out our responsibilities under the FPA with those considerations in mind.

Water Quality Certification

42. Under section 401(a)(1) of the Clean Water Act (CWA),²⁴ 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.²⁵

43. On June 29, 2004, Chelan PUD applied to Washington Ecology for a certification for the project. On June 13, 2005, Chelan PUD withdrew and refiled its application. On March 17, 2006, Washington Ecology issued a certification, which contains the conditions that are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph (D).²⁶

²³ See, respectively, the Treaty with the Yakama, Treaty of June 9, 1855, at Fort Stevens, 12 Stat. 951; Treaty between the Cayuse, Umatilla, and Walla Walla, Acting in Confederation, etc., Treaty of June 9, 1855, at Camp Stevens, 12 Stat. 945; and the Executive Order of July 2, 1872.

²⁴ 33 U.S.C. § 1341(a)(1) (2006).

²⁵ 33 U.S.C. at § 1341(d) (2006).

²⁶ The plans and conditions included in the certification are generally the same as the recommendations made by Commission staff in the final EIS. Some components of the plans and conditions included in the certification were not recommended by Commission staff because they were not project-related; were unnecessary; or their costs, feasibility, or effectiveness could not be determined. These measures include requiring Chelan PUD to: (1) participate in regional bull trout monitoring efforts; (2) increase the
(continued...)

44. Specifically, the certification requires that the project continue to operate pursuant to: (1) the Pacific Northwest Coordination Agreement and the HCA;²⁷ (2) the Hanford Reach Fall Chinook Protection Program Agreement;²⁸ and (3) the HCP. The certification also requires Chelan PUD to develop and implement the four Settlement Agreement fish plans: (1) the White Sturgeon Management Plan; (2) the Bull Trout Management Plan; (3) the Pacific Lamprey Management Plan; and (4) the Resident Fish Management Plan.²⁹ Finally, the certification requires that Chelan PUD implement the Settlement Agreement's Water Quality Management Plan.

45. The certification states that any future changes to applicable state water quality laws shall apply to the project to the fullest extent permitted by law. It reserves to Washington Ecology the right to modify schedules and deadlines provided under the certification, to require additional monitoring and studies, to take various actions to enforce the terms of the certification, and to condition or deny future proposed changes to the project or project operations that might significantly and adversely affect compliance with any applicable water quality standard.

46. Pursuant to the certification, Chelan PUD is required to prepare and implement an Aquatic Invasive Species Monitoring and Control Plan and a Quality Assurance Project Plan. Article 401(a) requires Chelan PUD to file its plans with the Commission for approval prior to implementing them. Other certification conditions contemplate unspecified long-term changes to Commission-approved plans, project facilities, or

white sturgeon population to levels commensurate with available habitat and levels that would support harvest; (3) fund the annual rearing and planting of resident fish in non-project waterbodies in Chelan and Douglas counties; and (4) investigate the introduction of a new fish species in project waters for recreational fishing. For similar reasons, the EIS did not recommend adopting a number of measures with respect to Pacific lamprey, including requirements to: (1) implement measures to achieve adult and juvenile lamprey passage rates similar to the best passage rates found at other hydroelectric projects on the mainstem Columbia and Snake rivers; (2) conduct juvenile lamprey habitat assessments in the project area; and (3) conduct studies of Pacific lamprey distribution, population status, and juvenile out-migration timing. However, because these measures are required by the water quality certification, they are required by the license. *See* EIS at 239-43 for a complete discussion of the measures not recommended by staff.

²⁷ Certification at section 5.2(1).

²⁸ Certification at sections 5.3(1) and (2).

²⁹ *Id.* at section 5.3(1).

project operations, as directed by Washington Ecology. Article 401(b) requires Chelan PUD to obtain Commission approval for such changes prior to implementing them.³⁰

Coastal Zone Management Act

47. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),³¹ the Commission may not issue a license for a project within or affecting a state's coastal zone unless the state's CZMA agency concurs with the license applicant's certification that the project is consistent 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.

48. Washington Ecology manages the state's approved Coastal Zone Management Program. Washington's coastal zone encompasses all of the state's marine waters and their associated wetlands, including, at a minimum, all upland area 200 feet landward from the ordinary high water mark and the area within the 15 coastal counties.

49. Under the Washington State Coastal Zone Management program, the Rocky Reach Project is neither within the coastal zone nor within a geographic area in which Washington Ecology would review licenses for consistency with the CZMA. Therefore, no consistency certification is required.

Section 4(E) Of The FPA

50. Section 4(e) of the FPA³² provides that the Commission may issue a license for a project located on a federal reservation³³ only if it finds that the license will not interfere or be inconsistent with the purpose for which the reservation was created or acquired. In

³⁰ In general, we do not include license conditions pre-approving as yet unidentified environmental measures. Doing so hinders our abilities to meet our FPA responsibilities for ensuring that the measures are supported by substantial evidence and are in the public interest to implement as part of a licensed hydroelectric project. We typically include such conditions in our licenses only when required to do so pursuant to applicable law, as is the case here. Article 401(b) allows us to consider whether any future measures required by the certification conditions would affect project or public safety or our ability to continue to administer the terms of the license.

³¹ 16 U.S.C. § 1456(3)(A) (2006).

³² 16 U.S.C. § 797(e) (2006).

³³ Reservations are defined in section 3(2) of the FPA, 16 U.S.C. § 796(2) (2006).

addition, section 4(e) requires that any license for which we make this finding must include conditions prescribed by the Secretary under whose supervision the reservation falls.

51. Federal lands within the project boundary include 164.04 acres of land managed by Interior's BLM. Interior submitted conditions pursuant to section 4(e), prior to the Settlement Agreement,³⁴ but Interior, a signatory to the Settlement Agreement, withdrew them shortly after the Settlement Agreement was filed.³⁵

52. Although the project does not occupy any Forest Service lands, the Forest Service also submitted a reservation of authority purportedly pursuant to section 4(e) to issue terms and conditions consistent with any settlement agreement that might be filed, and stated its intention to file final terms and conditions within 90 days following issuance of the EIS.³⁶ The Forest Service asserted that its condition is necessary for the protection of the Wenatchee National Forest, which is a federal reservation located near the project. It did not file any final 4(e) conditions. Because the project does not occupy any national forest lands, the Forest Service has no section 4(e) authority,³⁷ and we therefore will not include a reservation of the Forest Service's section 4(e) authority.

Threatened And Endangered Species

53. Section 7(a)(2) of the Endangered Species Act (ESA) of 1973,³⁸ 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.

³⁴ Interior Comments, Recommendations, Terms and Conditions, and Prescriptions (Interior terms and conditions), filed March 14, 2005, at 3-5.

³⁵ Letter from Preston A. Sleeper, Office of Environmental Policy and Compliance to Commission Secretary Magalie L. Salas, filed May 24, 2006, at 1.

³⁶ Letter from Linda Goodman, Regional Forester, to Commission Secretary Magalie L. Salas, filed March 8, 2005.

³⁷ See *Escondido Mutual Water Co. v. LaJolla Band of Mission Indians*, 466 U.S. 765 (1984).

³⁸ 16 U.S.C. § 1536(a) (2006).

A. Wildlife and Botanical

54. The following federally listed wildlife and botanical species may occur in the project area: pygmy rabbit, showy stickseed, Wenatchee Mountains checker-mallow (endangered); and Canada lynx, gray wolf, grizzly bear, northern spotted owl, and Ute ladies'-tresses (threatened).

55. Based on its analysis in the draft EIS, staff concluded that relicensing the project as recommended by staff would have no effect on the gray wolf, Canada lynx, northern spotted owl, grizzly bear, pygmy rabbit, showy stickseed, or Wenatchee Mountains checker-mallow; and, with a requirement in the license to develop and implement a Ute ladies'-tresses Management Plan,³⁹ would not be likely to adversely affect the Ute ladies'-tresses.⁴⁰ By letter dated September 7, 2005, Commission staff requested FWS' concurrence with its determination. On December 5, 2008, the FWS concurred with staff's determination for the Ute ladies'-tresses.⁴¹

B. Fish

56. The Upper Columbia River (UCR) spring-run Chinook salmon and the UCR steelhead are federally listed as endangered and occur in the project area, as does designated critical habitat of these species; the bull trout, listed as threatened, and its designated critical habitat also occur in the project area. In the EIS, staff addressed the project's effects on these species and their critical habitat.

1. HCP

57. As explained above, in June 2004 the Commission amended the Rocky Reach Project license to include the provisions of the HCP, noting that the HCP will aid "in the

³⁹ Article 404 of the license requires monitoring and protection measures for known populations of federally threatened Ute ladies'-tresses.

⁴⁰ Staff also concluded that relicensing the project would not be likely to adversely affect the bald eagle. The bald eagle was subsequently removed from the threatened and endangered species list, effective August 8, 2007 [72 Fed. Reg. 37,346 (July 9, 2007)]; thus, it is not subject to ESA consultation. Nonetheless, the FWS concurred with staff's determination in a December 5, 2008 letter.

⁴¹ The FWS also stated that while it does not have statutory authority to concur with no-effect determinations, it had no reason to disagree with staff's conclusions for gray wolf, Canada lynx, northern spotted owl, grizzly bear, pygmy rabbit, showy stickseed, or Wenatchee Mountains checker-mallow.

recovery of endangered species and help to prevent additional listing of mid-Columbia salmonids.” In that amendment proceeding, the Commission consulted with NMFS and FWS pursuant to ESA, and the agencies each issued a biological opinion (BO). NMFS’ BO concluded that implementation of the HCP is not likely to jeopardize the continued existence of UCR spring-run Chinook salmon or UCR steelhead or their critical habitat;⁴² and FWS’ BO concluded that implementation of the HCP is not likely to jeopardize the continued existence or critical habitat of bull trout.

2. Consultation with NMFS and FWS

58. Based on its analysis in the EIS, staff concluded that there was no need to reinitiate ESA consultation with NMFS for the UCR spring-run Chinook salmon and UCR steelhead or their critical habitat or with FWS for the Columbia River distinct population segment of bull trout and its critical habitat because: (1) the actions and measures recommended to be included in the new license were essentially the same as those considered under the BOs prepared in the amendment proceeding for the HCP; (2) staff’s recommendations incorporate the incidental take terms and conditions of those earlier BOs; (3) there is no information to indicate that the amount or extent of take authorized by the earlier BOs had been exceeded; and (4) there was no information to indicate that there were any effects not already considered under the earlier BOs. Thus, staff concluded that NMFS’ and FWS’ findings with respect to the HCP were still valid. Commission staff requested concurrence with staff’s conclusions by letters dated September 7, 2005.

59. By letters filed November 2, 2005, and July 7, 2006, FWS and NMFS, respectively, stated that they did not concur with Commission staff’s determinations and requested that the Commission initiate formal consultation.

60. On July 9, 2007, NMFS issued a BO that concludes that issuing a new license for the project, as recommended by Commission staff, is not likely to jeopardize the continued existence of UCR spring-run Chinook salmon and UCR steelhead, and is not likely to destroy or adversely modify designated critical habitat of these species. As part of its BO, NMFS included an incidental take statement that includes 14 reasonable and prudent measures and terms and conditions to minimize incidental take of UCR spring-run Chinook salmon and UCR steelhead. The incidental take statement requires the continued implementation of the HCP, and includes various administrative measures, such as providing NMFS with access to records and facilities, and requiring the licensee

⁴² See NMFS March 8, 2004 filing, incorporating its earlier biological opinion filed on September 26, 2003, into its biological opinion for the Commission’s consultation on the HCP.

to report observations of injuries or mortalities of listed species. Six of these terms and conditions apply to the installation of the small turbine in the attraction water conduit of the adult fishway. The measures, terms, and conditions are set forth in Appendix E of this order and incorporated into the license by Ordering Paragraph (H).

61. On December 8, 2008, FWS filed a BO that concludes that issuing a new license for the project, as recommended by Commission staff, is not likely to jeopardize the continued existence of bull trout or destroy or adversely modify designated critical habitat. As part of its BO, FWS included an incidental take statement with 5 reasonable and prudent measures to minimize incidental take of bull trout along with 14 terms and conditions to implement measures and three reporting requirements. Chelan PUD must (1) provide year-round upstream passage for bull trout at Rocky Reach, Dryden, and Tumwater Dams; (2) implement the Water Quality Management Plan and evaluate shoreline erosion in the project area; (3) minimize injury or death of bull trout at Dryden and Tumwater Dams; (4) operate the Rocky Reach hatchery facilities in a manner to meet the terms of the National Pollution Discharge Elimination System permit; (5) implement various fish handling methods to minimize the effects of implementing the Bull Trout Management Plan; (6) minimize the effects of implementing the White Sturgeon Management Plan by reducing any potential for indirect effects on bull trout; (7) conduct video monitoring in the Rocky Reach fishway for bull trout; (8) conduct genetic analysis of bull trout collected at Rocky Reach, Dryden, and Tumwater Dams; (9) monitor the amount and extent of bull trout take associated with passage routes; (10) document all occurrences of bull trout during implementation of the aquatic management plans required by this license; and (11) participate in information exchanges with other entities conducting bull trout research. The reasonable and prudent measures and accompanying terms and conditions and reporting requirements are set forth in Appendix D of the license and incorporated into the license through Ordering Paragraph (G).

62. As noted, three conditions in the FWS BO require Chelan PUD to implement measures for bull trout at Chelan PUD's fish ladders at Dryden and Tumwater Dams.⁴³ Chelan PUD must operate Dryden and Tumwater Dams' fishways to allow year-round upstream passage of bull trout, except for during routine maintenance, to reduce impacts such as delay, temperature stress, and handling associated with operation of the trapping facilities. Chelan PUD must implement measures to minimize the injury or death of bull trout at Tumwater and Dryden Dams' fishways and traps when collecting fish for project

⁴³ Reasonable and Prudent measure 5 and term and conditions 4, 5, and 11 in Appendix D. Dryden Dam and Tumwater Dam are located at river miles 17.6 and 32, respectively of the Wenatchee River. The Wenatchee River is a tributary of the Columbia River, with the confluence occurring approximately 7.5 miles downstream of Rocky Reach Dam. These two dams are owned and operated by Chelan PUD.

programs, and during use and holding of fish in the trap and holding tanks. In addition, Chelan PUD must collect and fund the analysis of genetic samples of bull trout over 70 mm handled as part of all ordinary Rocky Reach Project operations to trap or sample fish at Tumwater and Dryden Dams.

63. Dryden and Tumwater Dams and fish ladders are some distance away from, and not part of, the Rocky Reach Project. Chelan PUD uses the fish ladders and traps at these dams to collect broodstock for its salmon and steelhead hatchery program, which is required pursuant to the HCP and used for the Rock Island project.⁴⁴

64. This is the only connection between these fish ladders and trapping facilities and the Rocky Reach Project, and they serve no other purpose related to the Rocky Reach Project. However, because ongoing activities at these facilities are required by this license as mandated by FWS' incidental take statement, we will require, through Ordering Paragraph (B)(2) and Article 204, that the fish ladders and trapping facilities at Dryden and Tumwater Dams be made project facilities (and thus brought within the project boundary as project works).

65. A condition of the incidental take statement requires Chelan PUD to operate the Rocky Reach Hatchery Supplementation facilities in a manner to meet the terms of the National Pollution Discharge Elimination System (NPDES) permit. This condition is included in Appendix D of this license; however, the Commission has no jurisdiction over NPDES permits administered under the Clean Water Act. In the State of Washington, administration and enforcement of NPDES permits is the responsibility of Washington Ecology.

66. FWS also provided four conservation recommendations in the incidental take statement. FWS recommends that Chelan PUD: (1) implement unspecified recovery actions and restoration opportunities identified in FWS' draft bull trout recovery plan;⁴⁵ (2) install, in coordination with Grant County Public Utility District, a fixed radio-telemetry station in the lower Yakima River; (3) coordinate with, and contribute to, bull trout monitoring efforts in the Columbia River Basin; and (4) design and implement an environmental education plan for bull trout. Conservation recommendations 1 and 3 are general and too broad in scope. Moreover, none of the conservation recommendations have a clear relationship to the project or its effects. For these reasons, and because implementation of the Bull Trout Management Plan and other measures required by this

⁴⁴ See pages 98-100 of the U.S. Fish and Wildlife Service's Biological Opinion filed on December 8, 2008.

⁴⁵ FWS. 2002. Bull trout (*Salvelinus confluentus*) draft recovery plan. Portland, Oregon. 137 pp.

license will improve passage conditions, improve water quality and habitat, and increase available information describing bull trout populations affected by the project, inclusion of the conservation recommendations in this license is not warranted.

Essential Fish Habitat

67. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Act),⁴⁶ 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 Act, NMFS is required to provide EFH conservation recommendations for actions that would adversely affect EFH.⁴⁷ Under section 305(b)(4)(B) of the Act, 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.⁴⁸

68. The Pacific Fisheries Management Council has designated EFH for three species of Pacific salmon: Chinook, coho, and Puget Sound pink salmon.⁴⁹ NMFS included an analysis of the effects of the project on EFH in its BO and concluded that the proposed action would continue to adversely affect EFH for Chinook salmon and coho salmon, and recommended that the terms and conditions of the incidental take statement included in the BO be adopted as EFH conservation measures. These terms and conditions are set forth in Appendix E of this order and incorporated into the license through Ordering Paragraph (H).

⁴⁶ 16 U.S.C. § 1855(b)(2) (2006).

⁴⁷ 16 U.S.C. § 1855(b)(4)(A) (2006).

⁴⁸ *Id.* § 1855(b)(4)(B) (2006). 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.

⁴⁹ *See* Pacific Fishery Management Council. 1999. Amendment 14 to the Pacific salmon plan. Appendix A: Description and identification of essential fish habitat, adverse impacts and recommended conservation measures of salmon. Portland, Oregon.

Section 18 Fishway Prescriptions

69. Section 18 of the FPA⁵⁰ 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 of the Interior, as appropriate. In this instance, both FWS and NMFS filed fishway prescriptions for salmon and steelhead, and FWS filed prescriptions for bull trout and Pacific Lamprey.

70. NMFS filed a preliminary fishway prescription for salmon and steelhead on March 9, 2005. Because NMFS did not modify or file a final prescription, we will treat the preliminary prescription as final. NMFS' fishway prescription directs Chelan PUD to continue to carry out its obligations under the HCP. The NMFS prescription is incorporated into the license by Ordering Paragraph (F).

71. FWS filed its final fishway prescription for salmon, steelhead, bull trout, and Pacific lamprey on May 24, 2006.⁵¹ For salmon and steelhead, FWS prescribes that Chelan PUD carry out its obligations as set forth in the HCP. For bull trout, Chelan PUD must implement the Settlement Agreement's Bull Trout Management Plan. For Pacific lamprey, Chelan PUD must implement the Settlement Agreement's Pacific Lamprey Management Plan.⁵²

72. NMFS and FWS both requested that the Commission reserve their authority to prescribe fishways or modifications to fishways in the future. Consistent with Commission policy, Article 408 retains authority to the Commission to require Chelan PUD to construct, operate, and maintain fishways that may be prescribed by NMFS or FWS.

73. These prescriptions are set forth in Appendices B and C of this order and incorporated into the license by Ordering Paragraphs (E) and (F).

⁵⁰16 U.S.C. § 811 (2006).

⁵¹ FWS filed a preliminary prescription for salmon and steelhead on March 14, 2005, and later withdrew it. On June 2, 2005, the FWS filed amended fishway prescriptions for salmon, steelhead, bull trout, and Pacific lamprey.

⁵² As noted above (*see* P 44), Commission staff did not recommend adopting certain aspects of the Bull Trout and Pacific Lamprey Management Plans. However, because these measures are included in FWS' prescription, they are required by this license.

74. Certain conditions of the prescriptions contemplate unspecified long-term changes to Commission-approved plans, project facilities, or project operations, as directed by FWS. Article 401(b) requires Chelan PUD to obtain Commission approval for such changes prior to implementing them.⁵³

National Historic Preservation Act

75. Under section 106 of the National Historic Preservation Act (NHPA),⁵⁴ and its implementing regulations,⁵⁵ 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 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.

76. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) with the Washington SHPO on April 22, 2006, and invited Chelan PUD, BLM, Wenatchee National Forest, Bureau of Indian Affairs, the Colville, and the Yakama to concur with the stipulations of the PA. Chelan PUD, BLM, and Wenatchee National Forest signed the PA. The PA requires Chelan PUD to implement the associated Historic Properties Management Plan (HPMP) 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 405 requires Chelan PUD to implement the PA and associated HPMP.

Recommendations Of Federal And State Fish And Wildlife Agencies Pursuant To Section 10(J) Of The Fpa

A. Recommendations Within the Scope of Section 10(j) of the FPA

77. Section 10(j) of the FPA⁵⁶ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife

⁵³ See note 38, *supra*.

⁵⁴ 16 U.S.C. § 470 (2006).

⁵⁵ 36 C.F.R. Part 800 (2008).

⁵⁶ 16 U.S.C. § 803(j)(1) (2006).

agencies submitted pursuant to the Fish and Wildlife Coordination Act,⁵⁷ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

78. In response to the January 12, 2005 public notice that the project was ready for environmental analysis, NMFS filed 3 recommendations under section 10(j) of the FPA, FWS filed 13 recommendations, and Washington DFW filed 30 recommendations.⁵⁸

79. Subsequently, on May 24, 2006, Washington DFW modified its recommendations made under section 10(j) of the FPA by replacing all 30 recommendations with recommendations to adopt 8 of the proposed license articles filed as part of the Settlement Agreement.

80. Out of the three recommendations filed by NMFS, staff determined two were within the scope of section 10(j); and out of the thirteen recommendations filed by FWS, eight were within the scope of section 10(j).⁵⁹ Out of the eight modified recommendations filed by Washington DFW, staff determined that seven were within the scope of section 10(j). The recommendations outside the scope of section 10(j) are discussed in the next section.

81. This license includes conditions consistent with all the recommendations that are within the scope of section 10(j). These include two recommendations made by NMFS and FWS to implement the tributary conservation plan and the hatchery compensation plan, which are included in the HCP and a recommendation by Washington DFW to implement the entire HCP including measures related to fish passage and survival.⁶⁰ In addition, the license includes three recommendations made by FWS and Washington DFW to implement: (1) a Bull Trout Management Plan; (2) a Pacific Lamprey Management Plan; and (3) a White Sturgeon Management Plan. The license also

⁵⁷ *Id.* § 661 (2006).

⁵⁸ NMFS filed recommendations on March 9, 2005; Washington DFW filed recommendations on March 9, 2005; and FWS filed recommendations on March 14, 2005 and June 1, 2005.

⁵⁹ FWS' recommendation and Washington DFW's modified recommendation to protect and monitor Ute ladies'-tress, a threatened plant, was incorrectly classified in the EIS as within the scope of section 10(j). Plants are not included within the scope of section 10(j) unless they are being protected to provide fish and wildlife habitat.

⁶⁰ Components of the HCP related to fish passage and survival were prescribed by NMFS and FWS under section 18 of the FPA.

includes a Water Quality Management Plan and white sturgeon augmentation and supplementation hatchery program⁶¹ recommended by FWS and an aquatic invasive species plan and Resident Fish Management Plan recommended by Washington DFW.

82. Except for the provisions that would provide funding to the Washington DFW⁶² to implement wildlife habitat improvement measures on the Chelan and Rocky Reach Wildlife Areas,⁶³ this license also includes conditions consistent with FWS and Washington DFW recommendations to implement the Wildlife Habitat Management Plan (Article 403). The plan includes provisions to restore, rehabilitate, and maintain habitats important to mule deer winter survival, to protect riparian habitats in Sun Cove, to control noxious weeds, and to conduct annual wildlife surveys. Commission staff found the benefits to mule deer and other wildlife from implementing the types of measures defined in the management plan on project lands and within the wildlife management areas outweigh their costs.⁶⁴ However, Commission staff also recommended that the plan be revised to specifically define the actions that would be undertaken to ensure that the habitat improvements maintain a nexus to the project. Article 403 requires Chelan PUD to file for Commission approval a Wildlife Habitat Management Plan that describes in detail the habitat improvement projects that will be implemented over the first five years of the license and to update the plan every five years thereafter. The updated plan shall also include a report on the implemented measures, and detailed plans for the next five years. Priority should be given to habitat improvement projects within and immediately adjacent to the project because these are the resources most directly affected by the project.⁶⁵ Where the measures require annual or regular maintenance and oversight to ensure their success, Article 403 requires the lands to be brought into the project boundary.

⁶¹ The objectives and strategies of the white sturgeon augmentation and supplementation hatchery program recommended by FWS are encompassed by the White Sturgeon Management Plan required by Ordering Paragraph (D) of this license.

⁶² Providing funds to agencies to implement measures is not a specific fish and wildlife measure and is not subject to section 10(j) of the FPA.

⁶³ The Chelan and Rocky Reach Wildlife Areas include: (1) Chelan PUD lands within the project boundaries; (2) state lands within the Swanee, Entiat, and Chelan Butte Wildlife Management Areas (Chelan Wildlife Area); and public (Forest Service, BLM, and FWS) lands in Chelan and Douglas Counties within approximately a 6-mile wide corridor of the Rocky Reach reservoir (Rocky Reach Wildlife Area).

⁶⁴ See EIS at 151-156 and 245-47.

⁶⁵ *Id.*

83. With respect to protecting the riparian habitats at Sun Cove, the Settlement Agreement (Chapter 7) provides that Chelan PUD enter into a contract with a conservation organization, whereby the organization will acquire from Chelan PUD a conservation easement to protect in perpetuity the riparian habitat on Chelan PUD property at Sun Cove. Commission staff found that the riparian habitats are valuable to wildlife and potentially vulnerable to development.⁶⁶ Article 403 requires Chelan PUD to establish a 50-foot-wide by 3,500-foot-long riparian buffer zone at Sun Cove, bring it into the project boundary, and protect it from development. While Chelan PUD is free to enter into an agreement with conservation groups to manage the lands in question, Chelan PUD is ultimately responsible for managing the lands and must retain its property rights in them.⁶⁷

B. Recommendations Not Within the Scope of Section 10(j) As Considered Under Section 10(a)(1) of the FPA

84. NMFS, FWS, and Washington DFW made seven recommendations that are not within the scope of section 10(j) because they are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Instead, we consider these recommendations under the broad public interest standard of FPA section 10(a)(1). As noted above, the agency funding component of FWS and Washington DFW recommendations for implementing Chelan PUD's Rocky Reach Wildlife Habitat Management Plan are considered under section 10(a)(1).

85. NMFS and FWS recommend that the license term not extend beyond the term of the HCP (year 2054). For the reasons stated in the section entitled "License Term" we have adopted this recommendation through Ordering Paragraph (A).

86. FWS recommends that Chelan PUD implement all practicable measures to meet applicable water quality standards required pursuant to section 401 of the CWA.⁶⁸ Ordering Paragraph (D) of this license requires Chelan PUD to implement the conditions included in Washington Ecology's water quality certification.

87. FWS recommends that the license require Chelan PUD to create a forum for federal and state resource agencies and tribes to coordinate the implementation of the HCP with the environmental measures for fish species not addressed by the HCP.

⁶⁶ *See id.* at 157-158 and 247.

⁶⁷ *See New England Power Co.*, 79 FERC ¶ 61,006 (1997), *order on reh'g*, 82 FERC ¶ 61,177 (1998); *Niagara Mohawk Power Corp.*, 76 FERC ¶ 61,152 (1996).

⁶⁸ 33 U.S.C. § 1341(a)(1) (2006).

Ordering Paragraph (D) of this license requires Chelan PUD to implement the conditions included in Washington Ecology's water quality certification. The certification requires creation of a Rocky Reach Fish Forum⁶⁹ that would be responsible for implementation of the bull trout, white sturgeon, Pacific lamprey, and resident fish management plans, including any necessary coordination with implementation of the HCP.⁷⁰

88. FWS and Washington DFW recommended that Chelan PUD implement its management plan to protect and monitor four populations of the Ute ladies'-tresses, which are located on lands along the reservoir hydraulically connected to the project reservoir, subject to reservoir fluctuations, and potentially threatened by invasive plants. One of the four populations occurs on lands outside of Chelan PUD's control at a location known as Howard Flats.⁷¹ Commission staff agreed with this recommendation because weed control would protect the existing populations from competition with invasive weeds and monitoring would provide information to help determine the species habitat requirements and the influences of water fluctuations on those requirements. Staff also agreed with Chelan PUD's proposal to acquire a conservation easement to protect this population. Thus, the licensee must bring this area into the project boundary. Article 404 requires the licensee to implement its proposed plan and to file a report with the Commission if any new populations are discovered or if modifications to the management plan are needed based on monitoring results.

89. FWS also recommended that the Commission retain, through a specific ESA reopener, authority to ensure compliance with the requirements of the ESA. This is not necessary because the Commission's standard reservation of authority (Form L-5, Article 15) can be used to reopen the license to address ESA issues.⁷²

90. FWS and Washington DFW recommend (and the Settlement Agreement's Wildlife Management Plan proposes) that Chelan PUD provide funds to Washington DFW for the agency's wildlife habitat efforts. The Forest Service and BLM also recommended pursuant to section 10(a) of the FPA that Chelan PUD provide funding to their respective agencies to coordinate wildlife management activities on state and federal lands. As discussed previously, this license requires the development and implementation of a Wildlife Habitat Management Plan that would improve wildlife

⁶⁹ See Settlement Agreement section 15.

⁷⁰ Certification at section 5.3.

⁷¹ Howard Flats is located about 3.5 miles north of Beebe Bridge on the western shore of the reservoir.

⁷² See *Avista Corporation*, 93 FERC ¶ 61,116, at 61,330-31 (2000).

habitat conditions; however, we are not requiring the licensee to annually fund Washington DFW, Forest Service, or BLM to complete the habitat improvement measures. Rather, the Commission requires the license to implement specific measures that directly benefit fish and wildlife resources.⁷³ In addition, these proposed funding measures go beyond funding habitat improvements and are unrelated to project effects or purposes. This license does not include these recommendations.

91. Washington DFW also recommends that the license include the Recreation Resources Management Plan included in the Settlement Agreement. For the reasons discussed below, we are modifying and adopting the Settlement Agreement's Recreation Resources Management Plan. Article 406 requires a revised plan to be filed for Commission approval.

Other Measures Considered Under Section 10(A)(1) Of The Fpa

92. Section 10(a)(1) of the FPA⁷⁴ 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.

93. The Umatilla recommend a series of measures intended to protect the fishery. Because, as discussed herein, the license contains extensive fish protection measures that should provide adequate fish protection and because certain of the Umatilla recommended measures would not be effective, we are not adopting these recommendations, as explained in detail below.

A. Measures for Salmon and Steelhead

94. This license includes measures specified in the HCP that will improve the survival of migrating juvenile and adult salmon and steelhead in the project area, restore and increase salmon and steelhead habitat in the mid-Columbia region, and supplement juvenile salmon and steelhead abundance via stocking of hatchery-reared fish. The combined goal of the measures in the HCP is to mitigate for adverse effects on salmon and steelhead from the operation and maintenance of the project. Measures recommended by entities that did not sign the HCP are discussed below.

⁷³ See *Portland General Electric Co.*, 117 FERC ¶ 61,112, at P 83 (2006).

⁷⁴ 16 U.S.C. § 803(a)(1) (2006).

95. The Umatilla, which are not signatories to the HCP, recommend that the licensee be required to adopt and achieve a 91.5 percent passage survival standard that includes both direct and indirect juvenile salmon downstream mortality through the reservoir, dam, and tailrace.⁷⁵ We are not adopting this standard because tailrace mortality cannot be accurately measured at each dam and it is not evident that this standard would provide any greater benefit to salmon and steelhead than the standard included in the HCP.

96. The Umatilla recommend that the licensee achieve various passage efficiency⁷⁶ standards in addition to achieving the survival standards that it recommends. While the measures implemented through this license may increase passage efficiencies, we conclude that there is no biological basis for the standards recommended by the Umatilla or any certainty that they are achievable short of shutting down the project turbines.⁷⁷

97. The Umatilla recommend that the licensee be required to achieve adult salmon and steelhead upstream passage survival rates of 97 to 98 percent by 2013. Measurement of adult passage survival through the project is not currently feasible.⁷⁸ Existing available technologies to estimate adult passage survival require tracking adult salmon and steelhead from dam to dam (e.g., Rocky Reach Dam to the upstream Wells Dam); however, this technique cannot distinguish project-related mortality from natural mortality or other factors that would cause fish to disappear between the dams, such as spawning within the reservoir, migration into tributaries, and harvest. Because it is not currently possible to accurately measure adult project passage survival, we are not adopting this standard.

98. The Umatilla recommend that Chelan PUD test all individual project turbines to identify peak efficiency ranges and operate the project turbines at near-peak efficiency to maximize downstream fish passage survival. Under the HCP, Chelan PUD regularly monitors turbine passage survival and efficiency of the downstream passage facility. Based on these monitoring data, Chelan PUD operates the project turbines to maximize fish passage survival through the project turbines and to maximize the collection

⁷⁵ EIS at 112. The HCP includes a 93 percent survival standard that includes direct and indirect juvenile salmon downstream passage mortality through each dam and reservoir, but not the tailrace.

⁷⁶ Passage efficiency is measured as the proportion of fish that pass a dam via non-turbine routes.

⁷⁷ EIS at 112.

⁷⁸ *Id.* at 108-09.

efficiency of the downstream fish passage facility.⁷⁹ We conclude that operating the turbines based on actual direct measurements of survival and passage efficiencies would be more effective than operating the turbines based on the theoretical relationship between turbine efficiency and survival; therefore, we are not adopting the recommendation to conduct this testing.

99. The Umatilla recommend that Chelan PUD fund improved state-of-the-art facilities at any hatcheries that provide salmon and steelhead as mitigation for project effects. To the extent that Chelan PUD can achieve the stocking requirements using existing facilities,⁸⁰ we find no need to order additional upgrades to any of the hatcheries that would be used for rearing juvenile salmon and steelhead.⁸¹

100. The Umatilla recommend that Chelan PUD contribute funding to regional evaluations of salmon stocks, including life-cycle analyses, genetic assessments, stock productivity analyses, and carrying capacity analyses. While these studies would address species affected by the project, they are primarily related to regional salmon and steelhead management and would have little benefit in regard to identifying and mitigating project effects. Therefore, we are not adopting this recommendation.

101. The Umatilla state that, historically, summer Chinook salmon outmigrated as sub-yearlings; therefore, they recommend that summer Chinook salmon hatchery releases under the HCP should be sub-yearling fish rather than the yearling fish that are currently released. The HCP includes mechanisms for monitoring the success of the hatchery programs and making adjustments when necessary. Therefore, if releases of yearling summer Chinook salmon are unsuccessful, the program can be adjusted, including switching to releases of sub-yearling fish, to achieve the hatchery goal. Because there is no information in our record that indicates that the current ongoing hatchery program for summer Chinook salmon is unsuccessful, we do not adopt this recommendation.

102. The Umatilla recommend that Chelan PUD develop a detailed operations plan to address the effects of project operations on all native fish species and water quality. Umatilla recommends that the plan address turbine operations; spillgate inspections; bypass system operations and inspections; and fishway operations, inspections, and modifications. Development of such a plan will consolidate all fisheries- and water quality-related operational protocols and inspection procedures into a single document,

⁷⁹ *Id.* at 112.

⁸⁰ *Id.* at 114.

⁸¹ *Id.* at 114.

which will simplify future reviews and updating.⁸² In a letter filed on April 17, 2005, Chelan PUD indicated that as part of the HCP, it annually produces a fish passage plan in consultation with federal and state agencies and the tribes. However, the fish passage plan developed under the HCP only describes operational measures employed to address salmon and steelhead passage and does not address other operations that could affect aquatic resources and it does not address operational measures for other native fish species or water quality. Therefore, to consolidate the descriptions of project operations implemented for aquatic resources and to expedite future environmental and compliance reviews, Article 402 requires Chelan PUD to develop an operations plan to address all operations that could affect fish species and water quality for Commission approval in consultation with the fisheries agencies and tribes, including Umatilla.

B. Measures for White Sturgeon

103. The Umatilla recommend that Chelan PUD conduct studies and monitoring of the white sturgeon population in the project reservoir to determine changes in the white sturgeon population and the success of the proposed white sturgeon measures required by this license. The White Sturgeon Management Plan included in the Settlement Agreement and required by the project's water quality certificate includes studies and monitoring intended to determine the condition of the existing and future white sturgeon populations in Rocky Reach reservoir. We conclude that the Umatilla's recommendation for studies and monitoring is adequately addressed by the measures included in the White Sturgeon Management Plan.

104. The Umatilla also recommend that Chelan PUD construct a white sturgeon hatchery facility within 5 to 15 years of license issuance. The required White Sturgeon Management Plan indicates that selection of a long-term source of fish for stocking would occur by year seven of any new license. Under this plan, selection of a long-term source could be done through construction of a white sturgeon hatchery facility or other more cost-effective sources (such as purchasing from existing hatcheries or converting existing hatcheries for white sturgeon production). We conclude it is premature to direct Chelan PUD to construct a dedicated white sturgeon hatchery facility, and it would be more appropriate and cost-effective to proceed as proposed in the White Sturgeon Management Plan.

C. Passage Standards for Pacific Lamprey

105. The Umatilla recommend that Chelan PUD pursue actions to achieve 80 percent dam passage effectiveness for adult lamprey by 2013 and 97 percent dam passage

⁸² EIS at 244.

effectiveness by 2030. The Umatilla have provided no basis or justification for these standards.

106. In evaluating these standards, staff concluded that there is no information in the record to indicate that these passage levels are biologically necessary or even ultimately achievable.⁸³ As part of the Pacific Lamprey Management Plan included in the project's water quality certification, Chelan PUD will design and implement fishway modifications that are intended to improve upstream passage of adult lamprey. Additionally, the certification requires Chelan PUD to develop adult lamprey passage criteria that consider passage success at other Columbia River hydroelectric projects. At this time, passage requirements for adult lamprey are not fully understood, and there are no widely accepted upstream passage standards for adult lamprey. For these reasons, we conclude that the Umatilla's recommendation is premature, and we therefore decline to adopt this recommendation.

107. Additionally, the Umatilla recommend that Chelan PUD be required to meet downstream passage standards that are currently being developed by regional fisheries managers for juvenile lamprey. The Umatilla provide no evidence to indicate that current conditions for juvenile lamprey passage are inadequate and did not provide any additional specifications (i.e., parameters or quantification) regarding these standards. Because these standards are currently in development, we are unable to evaluate the cost and benefit of them, and we are not including them in this license.

D. Flood Control

108. Article 34 of the original license, based on the recommendation of the U.S. Army Corps of Engineers (Corps),⁸⁴ requires Chelan PUD to provide storage space to compensate approximately for valley storage, or basin storage, that may be expected to be lost during the ensuing flood season in an amount up to 500,000 acre-feet. In addition, Chelan PUD must meet certain conditions such as reservoir drawdown and release timing, as determined by the Corps.⁸⁵ The Corps recommends that we include this condition in the new license.

109. The Corps states that this storage is intended for very large floods, and that although extensive upstream storage development has reduced the frequency of such

⁸³ *Id.* at 131 and 241.

⁸⁴ 18 FPC 33 at 37.

⁸⁵ *Id.*

floods, they could still occur. We agree and Article 301 carries over the requirements of original Article 34.

E. Project Recreation

110. Chelan PUD proposes to enhance seven project recreation facilities as described in its Recreation Plan dated February 3, 2006, and in Chapter 9 of the Settlement Agreement. The most significant measures⁸⁶ include provisions for: (1) construction of a 1-mile-long, non-motorized trail from Lincoln Rock State Park to the fish bypass viewing station located approximately 300 feet downstream from Rocky Reach Dam; (2) construction of an approximate 4,340-foot-long, non-motorized trail (Entiatqua Trail); (3) improvements to the day-use and campground areas at Lincoln Rock State Park and Entiat Park; and (4) improvement to the boat launch and enhancement of the shoreline area at Daroga State Park.

111. In the EIS,⁸⁷ staff concluded that the proposed recreation measures would improve recreation opportunities and address recreation needs identified by the Washington State Comprehensive Outdoor Recreation Plan. However, certain aspects of the Recreation Plan have not been finalized, and others we decline to adopt as proposed.⁸⁸ Accordingly, Article 406 requires Chelan PUD to develop a final Recreation Resources Management Plan for the seven project recreation facilities and the trails described in the preceding paragraph. Article 406 also requires Chelan PUD to operate and maintain, or provide for the operation and maintenance of, all existing and new project recreation facilities.

112. The Forest Service recommended, pursuant to section 10(a) of the FPA, that Chelan PUD: (1) address development, funding, and implementation of a comprehensive information and education program; (2) address appropriate types and levels of information available to the public about the recreation facilities and opportunities at or near the project; and (3) implement the Recreation Resource Management Plan proposed in the June 30, 2004 Preliminary Draft Environmental Assessment, which includes a provision for a recreation enhancement fund.

⁸⁶ Some of these measures include funding provisions, which are addressed below.

⁸⁷ *Id.* at 194-197.

⁸⁸ For example, Appendix C of the Recreation Resources Management Plan contemplates the development of a system of interpretative trails with interpretive signs that present information about the natural and cultural history of the area.

113. In the EIS,⁸⁹ staff noted that the Forest Service did not provide any information to support its recommendations. With regard to item Nos. 1 and 2 above, staff already assessed the information, education, and interpretive components of Chelan PUD's Recreation Plan and of its HPMP. In the EIS,⁹⁰ staff concluded that the components contained in the plans would adequately address these needs at the project. Article 406 requires Chelan PUD to file a revised Recreation Plan that includes provisions for interpretive trails and signage. Article 405 requires Chelan PUD to implement its HPMP, which includes a cultural resources interpretive plan and education program. These requirements address the Forest Service's concerns on these issues.

114. With regard to item No. 3, most of the components of the Recreation Resource Management Plan proposed in the 2004 Preliminary Draft Environmental Assessment are part of a revised Recreation Plan required by Article 406; a primary provision that is not included is the recreation enhancement fund. In response to Commission staff advice during a 2005 technical conference, Chelan PUD and the signatories to the Settlement Agreement (the Forest Service is not a signatory to the Settlement Agreement) removed the recreation enhancement fund from the Settlement Agreement. As noted, rather than requiring the licensee to pay monies, we require that the licensee implement appropriate measures. The funding provisions are discussed below.

1. Monitoring Recreation Use

115. To provide for a more comprehensive assessment of recreational use and needs, as well as analyze the effects of project recreational use on wildlife and associated habitat, Chelan PUD proposes to update its 1999/2000 Recreation Use Assessment (Recreation Use) and its 2001 Recreation Needs Forecast and Analysis (Recreation Needs), and with the collected information, develop a Recreation Use, Needs Forecast and Analysis Report. This report, to be developed in year 23 of a new license, would provide a more thorough review of the level of recreational use and needs, as well as analyze effects on wildlife and associated habitat, within the project boundary. Article 407 requires Chelan PUD to update the Recreation Use and the Recreation Needs, and develop a Recreation Use, Needs Forecast, and Analysis Report. Based upon the findings contained in the report, Article 407 requires Chelan PUD to revise its Recreation Plan, accordingly.

2. Funds

116. Under the Settlement Agreement's Recreation Plan, Chelan PUD would provide funds to: (1) the City of Entiat for upgrades to its wastewater treatment plant at a cost of

⁸⁹ EIS at 199.

⁹⁰ *Id.* at 250.

\$1.3 million and for other upgrades at the park; and (2) Washington State Parks for developing a 1-mile-long, non-motorized trail on land owned by Chelan PUD, from Lincoln Rock State Park to a fish by-pass viewing station located approximately 300 feet downstream from Rocky Reach Dam at a cost of \$500,000. Chelan PUD proposes to upgrade an irrigation system in Orondo Park, not to exceed \$25,000, and upon completion of the system, the Port of Douglas County would own, operate, and maintain it. Chelan PUD also proposes to provide renovations and enhancements at Lincoln Rock State Park and Daroga State Park, as outlined in the Recreation Plan, or spend \$6 million, whichever comes first.

117. The proposed measure for the City of Entiat wastewater treatment plant is unrelated to project effects or purposes. The wastewater treatment plant serves the City of Entiat and its surrounding area. Therefore, we do not include it in this license.

118. The remaining measures are related to project purposes. However, the Commission is concerned with protecting resources and having specific enforceable provisions towards that end rather than requiring a licensee to provide funding.⁹¹ We conclude that the remaining measures would directly benefit the recreation resources at the project. Therefore, Article 406 requires the licensee to implement these measures, with no cap on their costs.

3. Entiat Park

119. Chelan PUD proposes to lease 9.32 acres of Chelan PUD-owned shoreline to the City of Entiat with an option to purchase such land in 2012. However, Entiat Park is a project recreation facility, and while Chelan PUD may enter into an agreement with the City of Entiat for the City to operate the park, operation and maintenance of the park is ultimately the licensee's responsibility. It is our policy that licensees own in fee recreation lands.⁹² Therefore, Chelan PUD may not sell the property to the city.

4. Trails

120. In its Recreation Plan, Chelan PUD proposes to develop a 1-mile-long non-motorized trail from Lincoln Rock State Park (a project recreation facility) south to a fish bypass viewing station 300 feet downstream of Rocky Reach Dam. Separately, and outside the project boundary, Washington State Parks, in cooperation with the Federal Highway Administration and the Washington State Department of Transportation, proposes to develop a 5.1-mile-long non-motorized recreational/interpretive trail (Rocky

⁹¹ See *Portland General*, 117 FERC ¶ 61,112 at P 83.

⁹² See 18 C.F.R. § 2.7 (2008).

Reach Trail), located outside the existing project boundary, that would extend from Odabashian Bridge (3 miles south of the Rocky Reach reservoir) to Lincoln Rock State Park.⁹³ Currently, there is no specific time frame for developing the Rocky Reach Trail. Mr. Jack Feil states the proposed Rocky Reach Trail would pass through an orchard owned by him and that the plans to construct the trail are illegal until zoning approval is secured. Mr. Feil adds that he opposes the Recreation Plan to the extent that it includes any funding for the proposed trail, apparently including any portion located on Chelan PUD's property, and generally objects to the level of funding for recreation proposed by Chelan PUD.

121. In response to Mr. Feil, Chelan PUD explains that there is a misunderstanding regarding the Rocky Reach Trail and the proposed 1-mile-long trail. The 1-mile-long trail would be located within the existing project boundary, on Chelan PUD land, and part of Lincoln Rock State Park, which is owned by Chelan PUD.⁹⁴

122. In addition to the proposed 1-mile-long trail, the proposed Recreation Plan provides for the development of an approximate 0.82-mile-long non-motorized trail (Entiatqua Trail) to be located along the Rocky Reach Project reservoir. The EIS concluded, and we agree, that the Entiatqua Trail and the 1-mile-long trail would enhance the recreation resources at the project.⁹⁵ Article 406 includes these measures.

Pacific Northwest Electric Power Planning And Conservation Act

123. In 1980, Congress enacted the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act).⁹⁶ This act created the Northwest Power Planning Council (now known as the Northwest Power and Conservation Council) and directed it to develop a Columbia River Basin Fish and Wildlife Program (Program). The Program is to protect, mitigate, and enhance fish and wildlife resources affected by the development and operation of hydroelectric projects on the Columbia River and its tributaries, while ensuring the Pacific Northwest has adequate, efficient, economical, and reliable power supply.⁹⁷ Section 4(h)(11)(A) of the Northwest Power Act⁹⁸ provides that

⁹³ See Recreation Plan, section 4.3.

⁹⁴ See Chelan PUD's response to agencies/intervenors' comments on draft EIS at 25.

⁹⁵ EIS at 250.

⁹⁶ 16 U.S.C. § 839(b) (2006) *et seq.*

⁹⁷ 16 U.S.C. § 839(b)(h)(5) (2006).

federal agencies operating or regulating hydroelectric projects within the Columbia River Basin shall exercise their responsibilities to provide equitable treatment for fish and wildlife resources with other purposes for which the river system is utilized and shall take the Council's Program into account "at each relevant stage of decision-making processes to the fullest extent practicable."

124. To mitigate harm to fish and wildlife resources, the Council has adopted specific provisions to be considered in the licensing or relicensing of non-federal hydropower projects (Appendix B of the Program). The license among other things, includes erosion control measures (Article 302); salmon and steelhead conservation measures (sections 5.1(17), 5.2, and 5.3 of Appendix A; Article 10 of Appendix B; and section 9.8 of Appendix E); enhancement of area resident fisheries (sections 5.1(17) and 5.3 of Appendix A); and wildlife habitat improvements (Articles 401 and 403). As part of the Program, the Council has designated over 40,000 miles of river in the Pacific Northwest region as not being suitable for hydroelectric development (protected area). The project is not located within such a protected area. Further, Article 409 reserves to the Commission the authority to require future alterations in project structures and operations to take into account, to the fullest extent practicable, the applicable provisions of the Program.

Administrative Provisions

A. Project Boundary and Exhibit G Maps

125. In February 7, 2007, subsequent to the filing of Chelan PUD's license application, Commission staff issued an order approving the licensee's request to modify the project boundary by removing 40.35 acres from the project and adding 21.87 acres upstream to be used for future recreation or fish hatchery purposes.⁹⁹ The February 2007 Order required Chelan PUD to file revised Exhibit G (project boundary) drawings affected by the changes. On October 18, 2007, Chelan PUD filed a letter explaining that the revised maps would require a change in formatting, resulting in sheet numbering that would not match that of the Exhibit G drawings in the license application. Accordingly, Chelan PUD stated its intention to refile the entire set of Exhibit G maps to replace those in the license application. Article 203 requires Chelan PUD to file these maps within 90 days of the effective date of the license. On January 30, 2009, Chelan PUD filed its revised Exhibit G maps, thus satisfying the filing deadline of Article 203. This filing is being reviewed by Commission staff.

⁹⁸ 16 U.S.C § 839(h)(11)(A) (2006).

⁹⁹ See Order Amending License, 118 FERC ¶ 62,116 (2007).

126. Because there are federal lands within the project boundary, any changes to Exhibit G maps that affect these lands will need to be reflected in the refiling of the entire set of Exhibit G maps. If there are changes to federal land acreage, Article 201, Annual Charges, must be amended accordingly.

B. Annual Charges

127. The Commission collects annual charges from licensees for administration of the FPA and for the use, occupancy, and enjoyment of federal lands. Article 201 provides for the collection of funds for administration of the FPA and for recompensing the United States for the use of its lands.

C. Headwater Benefits

128. Some projects directly benefited from headwater improvements that were constructed by other licensees, by the United States, or by permittees. Article 205 requires Chelan PUD to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

D. Review of Final Plans and Specifications

129. Article 302 requires Chelan PUD to provide the Commission's Division of Dam Safety and Inspections Portland Regional Office (D2SI-PRO) with final contract drawings and specifications – together with a supporting design report consistent with the Commission's engineering guidelines. Article 303 requires Chelan PUD to provide the Commission's D2SI-PRO with cofferdam construction drawings. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised drawings of project features as-built. Article 304 provides for the filing of these drawings.

E. Use and Occupancy

130. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 410 allows Chelan PUD to grant permission, without prior Commission approval, for the use and occupancy of project lands other than federal 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.

State And Federal Comprehensive Plans

131. Section 10(a)(2)(A) of the FPA¹⁰⁰ requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.¹⁰¹ Under section 10(a)(2)(A), federal and state agencies filed 70 comprehensive plans that address various resources in Washington State. Of these, the staff identified and reviewed 38 comprehensive plans that are relevant to this project.¹⁰² No conflicts were found.

Applicant's Plans And Capabilities

132. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,¹⁰³ we have evaluated Chelan PUD's record as a licensee with respect to the following: (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 service; (7) cost-effectiveness of plans; and (8) actions affecting the public.

A. Conservation Efforts

133. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electric consumption efficiency programs in the case of license applicants engaged primarily in the generation or sale of electric power, like Chelan PUD. Chelan PUD, through its Energy Services Department, has provided many residential, commercial, and industrial services and programs to its customers including: energy analyses, energy loans, training and education, energy audits, and replacement programs.¹⁰⁴ Through these programs, Chelan PUD is making satisfactory efforts to conserve electricity and has made a satisfactory good faith effort to comply with section 10(a)(2)(C).

¹⁰⁰ 16 U.S.C. § 803(a)(2)(A) (2006).

¹⁰¹ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2008).

¹⁰² The list of applicable comprehensive plans can be found in section 5.3 of the EIS.

¹⁰³ 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2006).

¹⁰⁴ Application, Exhibit H11.1.

B. Compliance History and Ability to Comply with New License

134. Based on a review of Chelan PUD's compliance with the terms and conditions of the existing license, we find that Chelan PUD's overall record of making timely filings and complying with its license is satisfactory. Therefore, we believe that Chelan PUD can satisfy the conditions of a new license.

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

135. We have reviewed operation, maintenance, and management of the project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines. We conclude that the dam and other project works are safe, and we have no reason to believe that Chelan PUD cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

136. We have reviewed Chelan PUD's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Chelan PUD has been operating the project in an efficient manner within the constraints of the existing license and is likely to continue to do so under a new license.

E. Need for Power

137. The Project is located in the Northwest Power Pool Area (NWPP) of the Western Electric Coordinating Council region of the North American Electric Reliability Council. The peak demand and annual energy requirements for the NWPP are projected to grow at an average annual compound rate of 1.1 percent and 1.5 percent respectively, over the ten-year planning period from 2004-2013. If a new license is issued to Chelan PUD, continued operation of the project should provide an annual net energy production in excess of six million megawatt-hours of electric energy. This capacity and energy would help Chelan PUD to maintain sufficient capacity to meet its residential, agricultural, commercial, and industrial loads, and to assist other utilities in the region to meet their needs. We conclude that the project's power, low cost, displacement of nonrenewable fossil-fueled generation, and contribution to the region's diversified generation mix will help meet a need for power in the region.

F. Transmission Services

138. The project has five sets of 230-kV transmission lines that convey power for about 1,600 feet from the powerhouse (on the west bank of the river) to the switchyard on the east bank. From the switchyard, power is directly delivered to the transmission grid. Chelan PUD proposes no changes that would affect its own or other transmission services in the region. The project and its transmission lines are important elements in meeting a

part of the regional need for power and in displacing some of the fossil-fueled electric power generation the regional utilities now use.

G. Cost-Effectiveness of Plans

139. Chelan PUD is not proposing any capacity expansion at the project. Based on the available flow, we would not expect any additional capacity to be cost-effective at this site. As discussed in this order, Chelan PUD is proposing several measures and plans for the enhancement of fish and wildlife, recreation, and cultural resources at the project. Based on Chelan PUD's record as an existing licensee, we conclude that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

140. Chelan PUD provided extensive opportunity for public involvement in the development of its application for a new license for the project. During the previous license period, Chelan PUD provided facilities to enhance public use of project lands and water, and operated the project with consideration for the protection of downstream as well as upstream uses of the mid-Columbia River.

Project Economics

141. 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.*,¹⁰⁵ 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. In making its decision, the Commission considers the project power benefits both with the applicant's proposed mitigation and enhancement measures and with the Commission's modifications and additions to the applicant's proposal.

142. In applying this analysis to the Rocky Reach Project, we have considered two options: Chelan PUD's proposal and the project as licensed herein. As proposed by Chelan PUD, the levelized annual cost of operating the project is \$97.3 million or \$16.14/megawatt-hour (MWh). The proposed project would generate an estimated

¹⁰⁵ See 72 FERC ¶ 61,027 (1995).

average of 6,030,900 MWh of energy annually. When we multiply our estimated average generation by the alternative power cost of \$39.27/MWh,¹⁰⁶ we get a total value of the project's power of \$236.9 million. To determine whether the proposed project is currently economically beneficial, we subtract the project's cost from the value of the project's power.¹⁰⁷ Therefore, in the first year of continued operation, the project would cost \$139.6 million or \$23.14/MWh, less than the likely alternative cost of power.

143. As licensed herein with the mandatory conditions and staff measures, the levelized annual cost of operating the project would be about \$97.2 million or \$16.11/MWh. Based on the same estimated average of 6,030,900 MWh as licensed, the project would produce power valued at \$236.9 million when multiplied by the \$39.27/MWh value of the project's power. Therefore, the project power would cost \$139.7 million, or \$23.2/MWh, less than the likely cost of alternative power.

Comprehensive Development

144. Sections 4(e) and 10(a)(1) of the FPA¹⁰⁸ 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. Accordingly, 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.

145. The EIS for the project contains background information, analysis of effects, and support for related license articles. The project will be safe if operated and maintained in accordance with the requirements of this license.

146. Based on our independent review and evaluation of the project, recommendations from the resource agencies and other entities, and the no-action alternative, as documented in the EIS, we have selected the proposed Rocky Reach Project, with the

¹⁰⁶ Based on BPA's new resource energy rate of \$34.40/MWh and capacity rate of \$24/kW-year.

¹⁰⁷ Details of staff's economic analysis for the project as licensed herein and for various alternatives are contained in section 4 of the EIS.

¹⁰⁸ 16 U.S.C. §§ 797(e) and 803(a)(1) (2006).

staff-recommended measures along with mandatory conditions, and find that it is best adapted to a comprehensive plan for improving or developing the Columbia River.

147. We select this alternative because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the 865.76 MW of electric energy generated from a renewable resource may offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

License Term

148. Section 15(e) of the FPA¹⁰⁹ 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. Our general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.¹¹⁰

149. On October 14, 2008, Chelan PUD filed comments urging the Commission to provide for a 50-year license term.¹¹¹ Chelan PUD contends that the 50-year term is justified in light of what it considers extensive environmental protection, mitigation, and enhancement measures proposed in the Settlement Agreement and adopted in this license. Also, Chelan PUD states that the 50-year license term would be consistent with the Settlement Agreement and the Commission's practice of adopting without modification the license term component of comprehensive settlements.

150. Contrary to Chelan PUD's contentions, this license requires only a moderate amount of protection, mitigation, and enhancement measures. Chelan PUD points to the extensive provisions of the HCP in support of a 50-year term. However, the provisions of the HCP are provisions of the current license. When determining appropriate license

¹⁰⁹ 16 U.S.C. § 808(e) (2006).

¹¹⁰ See *Consumers Power Company*, 68 FERC ¶ 61,077, at 61,383-84 (1994).

¹¹¹ On October 24 and December 2, 2008, respectively, Douglas PUD (licensee of the Wells Project No. 2149, located immediately upstream of the Rocky Reach Project), and Puget Sound Energy, Inc. (Puget), a purchaser of power from Chelan PUD, Douglas PUD, and Grant PUD, also filed letters in support of Chelan PUD's request for a 50-year license term.

terms, the Commission evaluates new measures to be included in the license, and does not consider requirements carried over from the prior license.¹¹²

151. As to Chelan PUD's contention that our policy is to adopt without modification license term components of settlements, while the Commission looks with great favor on settlements in licensing projects, the Commission does not automatically accept all settlements, or all provisions of settlements – especially when the Commission determines that the settlement provisions are inconsistent with established Commission policy. In any event, we note that the signatories to the Settlement Agreement, rather than actually supporting a 50-year term, instead state that they will not oppose Chelan PUD's request for such a term.¹¹³

152. When deciding on a license term, it is also the Commission's policy to coordinate to the maximum extent possible the license expiration dates of projects in a river basin, in order that subsequent relicensing proceedings can also be coordinated.¹¹⁴ As noted above, there are three nearby licensed projects in the mid-Columbia River Basin: (1) Priest Rapids Project No. 2114; (2) Rock Island Project No. 943; and (3) Wells Project No. 2149.

153. The Priest Rapids license order was issued for a term of 44 years on April 17, 2008. We chose a 44-year term for Priest Rapids to coincide with the expiration dates of the HCP. The licensee for the Wells Project is in the process of preparing its relicensing application, which is due to be filed by June 2010. Both Chelan PUD and the licensee for the Wells project are parties to HCP that will terminate in 2052. Accordingly, we find that choosing a license term to coincide with the expiration of the HCP is not only consistent with the moderate amount of mitigation and enhancement measures included in this license, but will also allow coordination among the Columbia River Basin projects.¹¹⁵

¹¹² See *Ford Motor Company*, 110 FERC ¶ 61,236 (2005).

¹¹³ Settlement Agreement section 5.

¹¹⁴ See 18 C.F.R. § 2.23 (2008) (“In issuing both new and original licenses, the Commission will coordinate the expiration dates of the licenses to the maximum extent possible, to maximize future consideration of cumulative impacts at the same time in contemporaneous proceedings at relicensing.”).

¹¹⁵ We reject Chelan PUD's argument that coordinating the Rocky Reach and Priest Rapids projects would overwhelm key agencies involved in the licensing process. Any administrative burden associated with relicensing multiple projects within the mid-

154. In consideration of the moderate amount of environmental measures required by the license, as well as to coordinate the timing of the salmon and steelhead program as set forth in the HCP, and to ensure coordination with other projects in the basin to the extent possible, we will issue Chelan PUD a 43-year license.

The Commission orders:

(A) This license is issued to Public Utility District No. 2 of Chelan County (licensee) for a period of 43 years, effective the first day of the month in which the license is issued, to operate and maintain the Rocky Reach Project No. 2145. 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:

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

(2) Project works including: (a) a 130-foot-high and 2,847-foot-long concrete-gravity integrated dam consisting of: (i) a 549-foot-long forebay wall deck; (ii) a 1,088-foot-long powerhouse section with 11 turbine/generator units and a service bay; (iii) a 350-foot-long center dam section; (iv) a 740-foot-long spillway section with 12 spillway openings controlled by 58-foot-high radial gates; and (v) a 120-foot-long east abutment section; (b) a juvenile fish bypass system with three entrances (the powerhouse service bay, the center of the dam, and between spillway openings 8 and 9), surface collection system, and bypass conduit to provide downstream passage; (c) three hydraulic turbine-driven pumps with a total capacity of 3,500 cfs to provide attraction water for the fishway passages; (d) an 800-kW small turbine generator in the existing attraction water drop structure that provides supplemental flow to the adult fishway spillway entrance; (e) 11 vertical shaft integrated Kaplan turbine/generator units with a total installed capacity of 865.76 MW; (f) a reservoir, extending about 43 miles to the tailrace of the Wells Dam, with: (i) a surface area of about 8,235 acres; (ii) gross storage capacity of 387,500 acre-feet; and (iii) a normal maximum headwater elevation of 707 feet¹¹⁶; (g) fish rearing

Columbia River Basin at the same time would be outweighed by the benefits of such coordination.

¹¹⁶ All elevations in this document are referenced to the National Geodetic Vertical Datum of 1929. To convert to the newer U.S. Coast and Geodetic Survey datum commonly used on the Columbia River, subtract 1.78 feet.

facilities on Turtle Rock Island and near the dam's left abutment; (h) five 230-kilovolt (kV) transmission lines conveying power from the powerhouse to the switchyard about 1,600 feet away near the dam's left abutment; (i) seven project recreation facilities (Rocky Reach Visitor Center and Park, Lincoln Rock State Park, Orondo Park, Entiat Park, Daroga State Park, Chelan Falls/Powerhouse Park, and Beebe Bridge Park); (j) Dryden and Tumwater Dams' fish ladders and trapping facilities; and (k) appurtenant facilities.

Exhibit A: The following sections of Exhibit A filed on June 30, 2004:

Section A2.0, pages A-4 through A-15, entitled "Detailed Description."

Exhibit F: The following sections of Exhibit F filed on December 27, 2004, and Sheet 5 filed on March 14, 2007:

| <u>Exhibit F Drawings</u> | <u>FERC No. 2145-</u> | <u>Description</u> |
|---------------------------|-----------------------|---|
| Sheet 1 | 1001 | General Plan of Development |
| Sheet 2 | 1002 | Powerhouse Cross Section Units 1-7 |
| Sheet 3 | 1003 | Powerhouse Cross Section Units 8-11 |
| Sheet 4 | 1004 | Spillway and Forebay Wall Section |
| Sheet 5 | 1005 | Plan and Sections Cutoff at Eastbank Abutment |
| Sheet 6 | 1006 | General Plan with Juvenile Fish Bypass System |
| Sheet 7 | 1007 | Main Fishway Attraction Water Turbine Site Plan and Plan View |
| Sheet 8 | 1008 | Main Fishway Attraction Water Turbine Longitudinal Section |

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, all portable property that may be employed in connection with the

project, and all water, riparian, or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibit A (section A2.0, pages A-4 through A-15, and F) described above are approved and made part of the license. The Exhibit G drawings filed as part of the application for license do not conform to Commission regulations and are not approved.

(D) This license is subject to the conditions issued by the Washington Department of Ecology on March 17, 2006, under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1431(a)(1) (2006), as those conditions are set forth in Appendix A to this order.

(E) This license is subject to the conditions filed March 14, 2005, supplemented June 1, 2005, and modified May 24, 2006, by the Secretary of the U.S. Department of the Interior under section 18 of the FPA, 16 U.S.C. § 811 (2006), as those conditions are set forth in Appendix B to this order.

(F) This license is subject to the condition submitted March 9, 2005, by the Secretary of the U.S. Department of Commerce under section 18 of the FPA, 16 U.S.C. § 811 (2006), as set forth in Appendix C to this order.

(G) This license is subject to the conditions of the incidental take statement submitted December 8, 2008, by the U.S. Department of Interior, Fish and Wildlife Service, as those conditions are set forth in Appendix D to this order.

(H) This license is subject to the conditions of the incidental take statement submitted July 9, 2007, by the U.S. Department of Commerce, National Marine Fisheries Service, as those conditions are set forth in Appendix E to this order.

(I) This license is subject to the articles set forth in Form L-5 (1975), "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States," 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 this license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purpose of:

(a) reimbursing the United States for the Commission's administrative costs, pursuant to Part I of the Federal Power Act. The authorized installed capacity for that purpose is 865.76 megawatts.

(b) recompensing the United States for the use, occupancy, and enjoyment of 160.04 acres of its land (other than for transmission line right-of-way); and

(c) recompensing the United States for the use, occupancy, and enjoyment of 4.0 acres of lands for transmission line right-of-way.

Article 202. Exhibit 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) Four 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 7-3/4") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-2145-1001 through P-2145-####) 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-1001), 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 along with form FERC-587 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. The remaining set of aperture cards (Exhibit G only) and a copy of Form FERC-587 shall be filed with the Bureau of Land Management office at the following address:

State Director
Bureau of Land Management
Lands and Minerals Adjudication Section (OR 936.1)
P.O. Box 2965
Portland, OR 97208-2965
ATTN: FERC Withdrawal Recordation

(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 segregated from other project exhibits, and identified as (CEII) material under 18 C.F.R. § 388.113(c) (2008). 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-2145-####, F-1001, Project 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. Revised Exhibit G Drawings. Within 90 days of the issuance date of the license, the licensee shall file, for Commission approval, revised Exhibit G drawings enclosing within the project boundary all principal project works and all project lands necessary for operation and maintenance of the project. The Exhibit G drawings must comply with sections 4.39 and 4.51 of the Commission’s regulations. Exhibit G shall also clarify the amount of federal lands and lands for transmission line right-of-way occupied by the project.

Article 204. Exhibit F and G Drawings for Dryden and Tumwater Dams fish ladders and trapping facilities. Within 90 days of the issuance date of the license, the licensee shall file, for Commission approval, two separate sets of Exhibit F drawings showing all principal project works at the Dryden and Tumwater Dams’ fish ladders and trapping facilities 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 segregated from other project exhibits, and identified as (CEII) material under 18 C.F.R. § 388.113(c) (2008). 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-2145-#####, F-1001, Project 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

Within 90 days of the issuance date of the license, the licensee shall file revised Exhibit G drawings enclosing within the project boundary all principal project works at the Dryden and Tumwater Dams’ fish ladders and trapping facilities. The Exhibit G drawings must comply with sections 4.39 and 4.51 of the Commission’s regulations.

Article 205. 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 extension 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.

Article 301. Flood Control. Each year before May 15, the U.S. Army Corps of Engineers shall advise the licensee of the storage space to be provided in Rocky Reach reservoir to compensate approximately for valley storage that may be expected to be lost during the ensuing flood season. The licensee shall provide this storage space in accordance with the following general procedures:

(a) The amount of storage space provided shall be based on a rule curve to be developed by the U.S. Army Corps of Engineers, providing for graduated storage ranging from zero acre-feet for a forecasted peak flood of 500,000 second-feet on the Columbia River at The Dalles, Oregon, to approximately 120,000 acre-feet for a forecasted peak of approximately 1,100,000 second-feet at The Dalles;

(b) The storage space provided for lost valley storage in Rocky Reach reservoir shall not exceed that available with forebay level between elevations 703 and 710 feet;

(c) The storage space in Rocky Reach reservoir to compensate for lost valley storage, based on flood forecasting by the U.S. Army Corps of Engineers, shall, if possible, be first provided from drawdown space between elevations 707 feet, and 703 feet.

(d) Drawdown of the Rocky Reach reservoir to provide this replacement storage will be ordered by the U.S. Army Corps of Engineers not more than two weeks before the predicted date on which the flow at The Dalles is forecasted to exceed 500,000 second-feet. The minimum forebay elevation as directed by the U.S. Army Corps of Engineers shall be maintained until refill is directed by it. The licensee shall drawdown from elevation 710 to elevation 707 feet as directed by the U.S. Army Corps of Engineers after peak flood flows have been experienced at The Dalles.

(e) Detail reservoir operating procedures for utilization of this replacement storage will be prepared by the U.S. Army Corps of Engineers.

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of construction, the licensee shall submit one copy of its plans and specifications and a supporting design document to the 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). The submittal to the D2SI-PRO Regional Engineer must also include as part of 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-PRO Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. *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 Inspection's (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 304. *As Built Drawings.* Within 90 days of completion of construction of the facilities directed by any article of this license (trashracks, fish passage, recreation facilities, etc.), 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 401. *Commission Approval and Filing of Amendments.*

(a) Requirement to File Plans for Commission Approval

Two conditions of this license found in Washington Department of Ecology's (Washington Ecology) water quality certification (Appendix A) require the licensee to prepare and implement plans without prior Commission approval. Each such plan shall be submitted to the Commission for approval prior to implementation. These plans are listed below.

| No. | Certification Condition Number | Plan Name | Due Date |
|-----|--------------------------------|--|---|
| 1 | 5.6(2) | Aquatic Invasive Species Monitoring and Control Plan | Within 1 year of license issuance |
| 2 | 5.7(1) & (2) | Quality Assurance Project Plan | Within 1 year of license issuance and annually thereafter |

The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee

shall implement the plan or changes in project operations or facilities, including any changes required by the Commission.

(b) Requirement to File Amendment Applications

Certain water quality certification conditions in Appendix A, FWS' fishway prescriptions in Appendix B, and terms and conditions to the incidental take statement for bull trout (Appendix D) contemplate changes in the requirements of this license. 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.

| Certification Condition Number | FWS Prescription Number | FWS Term & Condition Number | Action |
|--|-------------------------|-----------------------------|---|
| 5.3(1) & (4) | | | Modification of the Habitat Conservation Plan or the bull trout, Pacific lamprey, white sturgeon, or resident fish management plans |
| 5.2(3), 5.3(6), 5.4(1)(e)(1), 5.4(3), 5.4(5) | Article 4(d) | 12 and 14 | Modification of project operations or facilities |
| | Article 4(b)(1) | | Implementation of a plan to reduce incidental take of bull trout |
| | Article 5(a)(4) - (6) | | Implementation of measures to improve upstream and downstream passage of adult Pacific lamprey |
| | Article 5(a)(7) | | Implementation of measures to achieve no net impact for Pacific lamprey |
| | Article 5(b)(2) | | Implementation of measures to improve downstream passage of juvenile Pacific lamprey |

Article 402. Operations Plan. Within six months of the issuance date of the license and by February 15 each year thereafter, the licensee shall file for Commission approval an operations plan.

The plan shall include, but not be limited to, the following: (a) descriptions of fisheries- and water quality-related operating criteria for the project turbines, the downstream fish passage facility, fishways, spillways, and sluiceways; (b) descriptions of fisheries- and water-quality-related protocols for startup, in-season operation, shutdown, and inspection of the project turbines, the downstream passage facility, fishways (including fish salvage), spillways, and sluiceways; and (c) an annual schedule for operation and inspection of these facilities.

The licensee shall prepare the plan after consultation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Environmental Quality, the Confederated Tribes of the Umatilla Reservation, the Confederated Tribes of the Colville Indian Reservation, and the Confederated Tribes and Bands of the Yakama Nation. The licensee shall include with the plan, copies of comments and recommendations on the completed plan after it has been prepared and provided to the above entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission.

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 403. Wildlife Habitat Management Plan. Within one year of the issuance date of the license, the licensee shall file, for Commission approval, a Wildlife Habitat Management Plan to protect and enhance wildlife habitats in a corridor along the project reservoir on the following lands: (1) Chelan PUD lands within the project boundaries; (2) state lands within the Swanee, Entiat, and Chelan Butte Wildlife Management Areas (Chelan Wildlife Area); and public (Forest Service, BLM, and FWS) lands in Chelan and Douglas Counties within approximately a 6-mile-wide corridor of the Rocky Reach reservoir (Rocky Reach Wildlife Area). The plan shall be updated and filed, for Commission approval, at a minimum, every five years thereafter.

Wildlife Habitat Improvements

The plan shall include: (1) a detailed description of the habitat improvement measures that will be implemented over the first five years of the license, including the methods to be used; (2) a detailed description of the location where the improvements will occur, including maps and drawings; (3) a description of any annual or periodic maintenance and monitoring needed to ensure the success of the measures; and (4) a detailed implementation schedule. Priority should be given to habitat improvement projects that occur within and immediately adjacent to the project boundary. Where such

habitat improvements require annual or periodic maintenance to ensure their success, the lands subject to these habitat improvements shall be brought into the project boundary and shown on the exhibit drawings filed pursuant to Article 203. The plan shall also address noxious weed management and control in the wildlife area and on project lands.

Sun Cove Riparian Buffer Zone

The plan shall include the establishment and maintenance of a 50-foot-wide by 3,500-foot-long riparian buffer zone owned by the licensee, located near Sun Cove on the east bank of the reservoir between approximately river mile 491.6 and 492.1. The buffer zone shall be considered part of the Rocky Reach Wildlife Area and subject to the provisions of the plan. The riparian zone shall be managed to preserve its relatively natural conditions, except for two 100-foot-long access corridors along the river to provide public access to the river. The access corridors shall be defined after consultation and in agreement with Washington Department of Fish and Wildlife (Washington DFW). These lands and access corridors shall be brought into the project boundary and shown on the exhibit drawings filed pursuant to Article 203.

Wildlife Surveys

The plan shall also contain a provision and a schedule for the licensee to conduct annual winter bald eagle surveys and Canada goose nesting surveys on the project reservoir, and report the results to the Washington DFW. The annual wildlife surveys shall be conducted in coordination with the Washington DFW and may be altered upon agreement with the Washington DFW.

Reporting and Consultation

The plan shall include provisions for filing with the updated plan, a summary of the habitat improvement measures implemented during the previous five years, as well as the measures proposed for the next five years.

Development and implementation of the plan shall be coordinated with the development and implementation of the Recreation Resources Management Plan (Article 408) to ensure that public access controls and site rehabilitation measures are addressed and consistent with project and adjoining public land management goals and objectives.

The plan shall be developed after consultation with the U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, U.S. Forest Service, Washington DFW, Washington Department of Natural Resources, and Washington Recreation and Conservation Office. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared

and provided to the above entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the 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 plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. Ute Ladies'-Tresses Management Plan. The licensee shall implement the following measures to protect four known populations (Chelan Flats, Howard Flats, Gallagher Flats, and the population on U.S. Bureau of Land Management lands) of the federally threatened Ute ladies'-tresses at the Rocky Reach Project: (1) control noxious weeds in accordance with the integrated noxious weed program described in Public Utility District No. 1 of Chelan County's June 11, 2004, "Ute Ladies'-tresses (*Spiranthes diluvialis*) Along Rocky Reach Reservoir Management Plan" filed on March 20, 2006; (2) annually monitor existing populations to track numbers of blooming plants and their distribution and document their distribution with detailed site maps, Global Positioning System coordinates, photos, and physical markers; (3) every five years conduct a survey of suitable habitats along the project reservoir to identify the establishment of any new populations; and (4) acquire through conservation easement, fee-title, or other instrument sufficient rights to implement the above measures and protect the population located at Howard Flats for the term of the license. Such rights shall be acquired within three years of license issuance. Upon acquisition of such rights, all lands covered under the agreement shall be brought into the project boundary (to the extent that these lands are not already within the project boundary) and shown on revised exhibit drawings. The revised Exhibit G drawings shall be filed within 90 days of acquiring the lands in accordance with Article 203.

By December 31 of each year following the issuance of the license, the licensee shall file an annual report with the U.S. Fish and Wildlife Service (FWS), U.S. Bureau of Land Management (BLM), Washington Department of Fish and Wildlife (Washington DFW), and Washington Natural Heritage Program documenting the results of the annual monitoring efforts and noxious weed control measures and, as applicable, the 5-year Ute ladies'-tresses plant surveys.

The licensee shall notify the Commission, the FWS, BLM, and Washington DFW in writing within 10 days of discovering any new populations of Ute ladies'-tresses along the project reservoir. The notification shall identify the location of the new population. Within 90 days of such a discovery, the licensee shall file a report with the Commission describing the population size, any identified threats to the newly discovered population,

and any recommendations for modifying the Ute Ladies'-tresses Management Plan to include additional protection measures or to modify the monitoring and survey efforts to address the new population. The report shall be prepared after consultation with FWS, BLM, and Washington DFW.

The licensee shall include with the report documentation of consultation, copies of recommendations on the completed report and any proposed changes to the management plan after they have been prepared and provided to the above entities, and specific descriptions of how the entities' comments are accommodated by the report. The licensee shall allow a minimum of 30 days for the entities 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 the above plan. The licensee shall implement the above plan, including any changes required by the Commission.

Article 405. Programmatic Agreement. 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 a License Issuing to Public Utility District No. 1 of Chelan County for the Continued Operation of the Rocky Reach Hydroelectric Project in Chelan County, Washington (FERC No. 2145-060)," executed on April 22, 2006, 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 406. Rocky Reach Recreation Resources Management Plan. Within one year of the issuance date of the license, the licensee shall file for Commission approval, a revised Rocky Reach Recreation Resources Management Plan. The plan shall include, but not be limited to, the following:

(1) a description of the seven project recreation facilities: Rocky Reach Visitor Center and Park, Lincoln Rock State Park, Orondo Park, Entiat Park, Daroga State Park, Chelan Falls/Powerhouse Park, and Beebe Bridge Park;

(2) at Lincoln Rock State Park: (a) development of a group campground, (b) improvements to the day-use area, and (c) a new interpretive trail with signage;

(3) construction of a 1-mile-long non-motorized trail from Lincoln Rock State Park to the fish bypass viewing station located approximately 300 feet downstream from the Rocky Reach Dam. Trail amenities shall include signage, and a bench;

(4) at Daroga State Park: (a) enhancement of the shoreline (e.g., revegetation with native species and improvement to the boat launch), (b) improvement of the vault toilets, and (c) a new interpretive trail with signage;

(5) at Entiat Park: (a) improvement of the day-use area, (b) improvement of the campground area, and (c) construction of an approximate 4,340-foot-long non-motorized trail (Entiatqua Trail) to provide additional public access to project lands and waters. Trail amenities shall include a viewpoint, signage, and a bench; and

(6) at Orondo Park: design and upgrade the irrigation system.

The plan shall include: (1) design drawings of the new recreation measures, (2) a description of soil erosion and sediment control measures to be used where ground-disturbing activities are proposed, (3) a discussion of how the needs of the disabled were considered in the planning and design of the recreation facilities, (4) a provision for trash clean-up and removal, (5) a cost for each facility, and (6) an implementation schedule.

The licensee shall develop the plan after consultation with the Washington Department of Fish and Wildlife, Washington State Parks and Recreation Commission, National Park Service, U.S. Bureau of Land Management, and the City of Entiat, Washington. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the above entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the 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 licensee shall develop the plan in coordination with the Wildlife Habitat Management Plan required under Article 403, so that recreation enhancements do not conflict with wildlife and associated habitat at the project.

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

Operation and Maintenance of Project Recreation Facilities

The licensee shall operate and maintain or arrange for the operation and maintenance of the project's recreation facilities.

Article 407. Recreation Use Assessment and Recreation Needs Analysis Report. No later than year 23 after the issuance date of the license, the licensee shall update the 1999/2000 Recreation Use Assessment (Recreation Use) and update the 2001 Recreation Needs Forecast and Analysis (Recreation Needs). These updates shall consider the analysis required by the Licensed Hydropower Development Recreation Report (FERC Form 80).

The licensee shall update the Recreation Use and the Recreation Needs after consultation with the Washington Department of Fish and Wildlife, Washington State Parks and Recreation Commission, National Park Service, Bureau of Land Management, and the City of Entiat, Washington.

Within 90 days of completion of updating the Recreation Use and the Recreation Needs, the licensee shall, after consultation with the above entities, develop a Recreation Use Assessment and Recreation Needs Analysis Report to assess recreational use and needs at the project. The report shall include, but not be limited to, the following: (1) a review of existing recreation resources, (2) an analysis of recreational use at the project recreation facilities and demand for additional recreation amenities, (3) an analysis of recreation site capacity for potential recreation development, (4) an analysis of the effects of project recreational use on wildlife and associated habitat, (5) a review of agency current recreation and/or land use management plans relevant to the project; and (6) a discussion of the need for any changes to the Recreation Plan. The report shall also contain the updated Recreation Use and the updated Recreation Needs.

The licensee shall include with the report documentation of consultation, copies of comments and recommendations on the completed report after it has been prepared and provided to the above entities, and specific descriptions of how the entities' comments are accommodated by the report. The licensee shall allow a minimum of 30 days for the entities 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. Based upon the findings contained in the report, the licensee shall revise the Rocky Reach Recreation Resources Management Plan required by Article 406 and file it for Commission approval.

Article 408. Reservation of Authority to Prescribe Fishways. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of such fishways as may be

prescribed by the Secretary of Commerce or of the Interior pursuant to section 18 of the Federal Power Act.

Article 409. *Columbia River Basin Fish and Wildlife.* The Commission reserves the authority to order, upon its own motion or upon the recommendation of federal or state fish and wildlife agencies, affected Indian Tribes, or the Northwest Power and Conservation Council, alterations of project structures and operations to take into account to the fullest extent practicable the regional fish and wildlife program developed and amended pursuant to the Pacific Northwest Electric Power Planning and Conservation Act.

Article 410. *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 occupancy, 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 during the prior calendar year, the licensee shall so inform the Commission in writing no later than January 31 of each year.

(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; and (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.

(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.

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

(K) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act. 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, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this license.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

FORM L-5
(October 1975)

Federal Energy Regulatory Commission
Terms and Conditions of License for Constructed Major Project Affecting
Navigable Waters and 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 nonpower 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 United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and 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 Secretary of the Army may prescribe in the interest of navigation, and 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 Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other 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. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. Timber on lands of the United States 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 27. 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 28. 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 29. 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 30. 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 31. 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 32. 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 33. 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 34. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 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 and opportunity for hearing.

Article 35. 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 36. 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 37. 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

Washington Department of Ecology Section 401 Water Quality Certification Issued March 17, 2006

Terms and Conditions

5.0 WATER QUALITY CERTIFICATION CONDITIONS

In view of the foregoing and in accordance with Section 401 of the Clean Water Act (33 USC 1341), RCW 90.48.260 and WAC Chapter 173-201A, Ecology finds reasonable assurance that the proposed FERC license will attain compliance with state and federal water quality standards and other appropriate requirements of state law *provided* the following conditions are met. Accordingly, though this Order issued and enforceable under RCW 90.48, Ecology grants Section 401 water quality certification to Chelan PUD for the Rocky Reach Hydroelectric Project (FERC 2145) subject to the following conditions. This order shall hereafter be referred to as the "Certification."

5.1 GENERAL REQUIREMENTS

- 1) The Project shall comply with all water quality standards (currently codified in WAC 173-201A), ground water standards (currently codified in WAC 173-200), and sediment quality standards (currently codified in WAC 173-204) and other appropriate requirements of state law that are related to compliance with such standards. The conditions below set forth Adaptive Management processes and measures to achieve full compliance with standards and constitute a water quality attainment plan under WAC 173-201A-510(5).
- 2) In the event of changes in or amendments to the state water quality, ground water, 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 Federal Clean Water Act, such provisions, standards, criteria or requirements shall apply to the Project and any attendant agreements, orders, or permits, to the fullest extent permitted by law.
- 3) Discharge of any solid or liquid waste to the waters of the State of Washington without prior approval from Ecology is prohibited.
- 4) Chelan PUD shall implement the measures identified in the Rocky Reach Settlement Agreement, Attachment B, Sections 4 of Chapters 2 [Water Quality Management Plan], 3 [White Sturgeon Management Plan], 4 [Bull Trout Management Plan], 5 [Pacific Lamprey Management Plan], and 6 [Resident Fish Management Plan], of the

Comprehensive Plan, except as may be subsequently modified in accordance the Settlement Agreement or Ecology's Reservation of Authority within this Certification.

5) Chelan PUD shall consult with Ecology before it undertakes any change to the Project or Project operations that might significantly and adversely affect compliance with any applicable water quality standard (including designated uses) or other appropriate requirement of state law. If, following such consultation, Ecology determines that such change would violate state water quality standards or other appropriate requirements of state law, Ecology reserves the right to condition or deny such change, in accordance with the dispute resolution process provided in the Settlement Agreement and applicable federal and state law.

6) This Certification does not exempt compliance with other statutes and codes administered by federal, state and local agencies.

7) As a signatory to the Settlement Agreement, Ecology will administer and enforce this Certification in compliance with the Settlement Agreement, unless the Settlement Agreement is terminated or Ecology ceases to be a party to it. However, if a conflict or inconsistency exists or arises between this Certification and the Settlement Agreement or any part thereof that is incorporated in this Certification, the terms of this Certification shall govern.

8) Ecology retains the right to modify schedules and deadlines provided under this Certification or provisions of the Comprehensive Plan that it incorporates.

9) Ecology retains the right to require additional monitoring, studies, or measures if it determines that there is a likelihood or probability that violations of water quality standards or other appropriate requirements of state law have or may occur, or insufficient information exists to make such a determination.

10) Ecology reserves the right to amend this Certification if it determines that the provisions hereof no longer provide reasonable assurance that the proposed FERC license will comply with water quality standards or other appropriate requirements of state law. Any such amended certification shall take effect immediately upon issuance, unless otherwise provided in the amended certification, and may be appealed to the Pollution Control Hearings Board (PCHB) under RCW 43.21B.

11) Ecology reserves the right to issue administrative 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 Certification.

12) The conditions of this Certification should not be construed to prevent or prohibit Chelan PUD 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.

13) If five or more years elapse between the date this Certification is issued and issuance of the New License for the Project, this Certification shall have deemed to be expired and denied at such time and Chelan PUD shall send Ecology an updated 401 application that reflects then current conditions, regulations and technologies. This provision should not be construed to otherwise limit the reserved authority of Ecology to withdraw, amend or correct the Certification before or after the issuance of the New License.

14) Copies of this Certification and associated permits, licenses, approvals and other documents shall be kept on site and made readily available for reference by Chelan PUD, its contractors and consultants, and by Ecology.

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

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

17) This Certification refers to and incorporates the HCP and various sections of the Comprehensive Plan, including the WQMP, the Bull Trout Management Plan, the Sturgeon Management Plan, the Lamprey Management Plan, and the Resident Fish Management Plan, which in turn refer or incorporate other documents, such as the Preliminary Draft Environmental Assessment. Ecology has conducted a sufficient review of the facts to execute and support the Settlement Agreement consistent with its statutory obligations. However, Ecology does not necessarily approve of all the statements or analyses (including without limitation interpretations of data, studies, and law) contained in the Comprehensive Plan and documents referenced therein. As stated in the definition of "Adaptive Management" in the Settlement Agreement, if goals and objectives have not been achieved, previously considered measures may be re-evaluated.

18) The provisions of this Certification that incorporate any provisions of the Settlement Agreement shall continue to apply even if the Settlement Agreement ceases to exist, Ecology withdraws from it, or if FERC fails to fully incorporate any provisions of the Settlement Agreement in the Project license. The requirement for dispute resolution referred to herein shall be eliminated if the Settlement Agreement ceases to exist or Ecology ceases to be a party to it. If the RRFF ceases to exist for whatever reason,

Ecology reserves the right to designate replacement entities to serve, with Chelan PUD, in that capacity.

19) If Chelan PUD is unable, as a matter of federal law, to perform a requirement under this certification without obtaining FERC approval, Chelan PUD shall not be considered in violation of such requirement to the extent that FERC does not provide such approval, provided that Chelan PUD diligently seeks such approval and so notifies Ecology.

20) This Certification shall be construed to require Chelan PUD to mitigate or remedy a water quality violation or problem only to the extent that there is substantial evidence that the Project causes (or contributes to) such violation or problem (RCW 90.48.422(3)).

21) The reservations contained in this Certification do not preclude or limit any right of Chelan PUD to contest the validity of any such reservation in connection with any order or any other action taken by Ecology pursuant to such reservation.

5.2 FLOW

1) Chelan PUD shall continue to coordinate operations under the Pacific Northwest Coordination Agreement and the Mid-Columbia Hourly Coordination Agreement (Hourly Coordination Agreement) insofar as such agreements contribute to the protection of water quality (including, but limited to, the generation of TDG) and existing and designated use. Chelan PUD shall also abide by any successors to such agreements to which it is a party. If either of these agreements is terminated and not replaced with a successor agreement to which Chelan PUD is a party, Project operations shall, to the extent reasonable and feasible and within Chelan PUD's control, continue to provide an equivalent (or higher, if Chelan PUD chooses to do so) level of protection of water quality and existing and/or designated uses as they provided under such agreements.

2) Subject to paragraph 3 below, Chelan PUD shall continue to operate under the Hanford Reach Agreement to cooperate with other utilities in managing flow and flow fluctuations (e.g., ramping rates) to address fish resource impacts within and downstream of the Project area, including the Hanford Reach. Chelan PUD shall also abide by any successors to such agreements to which it is a party. If such agreement is modified or terminated and not replaced with a successor agreement to which Chelan PUD is a party, Project operations shall, to the extent reasonable and feasible and within Chelan PUD's control, continue to provide an equivalent (or higher level, if Chelan PUD chooses to do so) of protection of water quality and existing and/or designated uses as it provides under such agreement.

3) If the best available science shows that flow fluctuations allowed under the existing Hanford Reach Agreement, or as exist if such agreement is terminated, are causing significant harm to fall Chinook in the Hanford Reach, and the Project contributes to such

flow fluctuations, then the Chelan PUD shall to the extent reasonable and feasible and consistent with the Biological Objectives adaptively manage Project operations to address its contribution. This requirement shall not take effect until 2014, concurrent with the re-opener period contained in the Hanford Reach Agreement.

5.3 FISH USE

1) **Implementation.** Chelan PUD shall implement the actions identified in the HCP and the Comprehensive Plan, Chapters 3, 4, 5 and 6 (HCP and each of the Fish Management Plans) as exist or may be modified. Under the HCP, measures may be modified based on consensus of the HCP Coordinating Committee. Under the Settlement Agreement, modification of the Fish Management Plans is based on consensus of the Rocky Reach Fish Forum (RRFF). Unless modified, implementation of the Fish Management Plans shall occur on the timeframes and using the Adaptive Management process set forth in the Settlement Agreement. The RRFF roles, functions and procedures are described in the Settlement Agreement.

2) **Biological Objectives.** The Biological Objectives for fish within and passing through the Project's area are identified in the HCP and each of four Fish Management Plans, identified above. The Biological Objectives are summarized in Appendix C of this Certification. The descriptions of terms and timeframes within the HCP and Fish Management Plans govern, in the event that there are any inconsistencies with the table in Appendix C. The Fish Management Plan objectives are subject to modification through the RRFF. Chelan PUD shall undertake all reasonable and feasible actions to achieve these Biological Objectives through the Adaptive Management process implemented through the RRFF. If the RRFF ceases to exist or if the RRFF is unable to reach consensus following the completion of dispute resolution under the Settlement Agreement as to modification of a Biological Objective, Ecology reserves the right in consultation with fish agencies and Chelan PUD, to modify the Biological Objective insofar as necessary for the protection of existing and/or designated uses.

3) **Status Reports.** By no later than February 1 of every five years, starting with Year Five (5) of the effective date of the New License, Chelan PUD shall develop, in consultation with the RRFF, and provide to Ecology and other members of the RRFF, a draft Biological Objectives Status Report that (1) summarizes the results of monitoring and evaluation program, and evaluates the need for modification of the program, (2) describes the degree to which the Biological Objectives have been achieved, and the prospects for achieving those objectives in the next reporting period, (3) reviews management options (both operational and structural) taken to meet those Biological Objectives, and (4) recommends any new or modified implementation, monitoring and/or evaluation measures that are needed to meet the Biological Objectives, to the extent reasonable and feasible. Such recommendations shall contain a schedule for timely implementation. Chelan PUD shall consult with the RRFF prior to issuing the final

report. If a RRFF member is not in agreement with the draft report or recommendations and has an alternative evaluation or recommendation, Chelan PUD shall include in the final report a discussion of that alternative or recommendation, and Chelan PUD's reasons for not incorporating the alternative recommendations and/or evaluations. Chelan PUD shall provide a final report to the RRFF and any member of the interested public no later than March 30th of each year for which a report is due.

4) **Implementation of New Measures.** If consensus is achieved within the RRFF as to new or modified measures needed to achieve Biological Objectives and the schedule of implementation thereof, the recommendations shall become part of the Fish Management Plan and implemented in accordance with the schedule. Such new and modified measures are deemed to be part of this Certification if consensus is achieved by the RRFF.

5) **Resolution of Disagreements.** If, after completing the dispute resolution process provided in the Settlement Agreement, the RRFF does not reach consensus as to new or modified measures needed to achieve the Biological Objectives, Ecology reserves the right to make a final determination of measures, including monitoring and evaluation measures, to be implemented as necessary for the protection of existing and/or designated uses. Under the terms of the dispute resolution process, Ecology is not required to complete dispute resolution if it determines that expeditious action is required to maintain and protect water quality, including existing, designated, and beneficial uses. During the pendency of the dispute resolution process, the minimum level of new or modified measures that the fish management agencies, Ecology, and Chelan PUD can agree upon shall be implemented in a timely manner.

6) **Protection of Species.** Ecology expects that the Fish Management Plans provide, and will continue to provide, adequate protection of fish species and habitat, including existing and designated uses. In the event that any of these plans, as determined by Ecology, fail, or begin to fail, to adequately protect existing and designated uses, Ecology reserves the right, in compliance with the dispute resolution process under the Settlement Agreement, to require such changes in operation or physical structures as it determines necessary to protect these uses.

7) **Evaluation of Compliance with Biological Objectives.** No later than ten (10) years after the effective date of the New License, Chelan PUD shall, in consultation with HCP parties and the RRFF, provide Ecology with the information necessary to make a determination on whether the Biological Objectives have been achieved. Ecology will consult with the RRFF prior to making a determination whether and to what extent the Biological Objectives have been met.

8) **Biological Objective Not Met.** Following the issuance of the final Biological Objectives Status Report in Year Ten (10), if Ecology, after consulting with the RRFF,

concludes that a Biological Objective has not been met, Chelan PUD shall continue to implement the Adaptive Management process described in this section until the Biological Objective has been attained or is modified pursuant to the Adaptive Management process in the Settlement Agreement or to Ecology's reserved authority.

9) **Maintenance of Biological Objectives.** Once a Biological Objective (or the alternative as described under 8 above) are met, the actions needed to maintain attainment of the Biological Objective must be continued through the term of the New License. Monitoring shall be continued and the results posted annually on Chelan PUD's website or equivalent. Chelan PUD shall provide special notification to all members of the RRF (including Ecology) no later than six (6) months after any of the Biological Objectives ceases to be met. Monitoring to determine attainment of Biological Objectives shall continue throughout the life of the New License, including any subsequent annual licenses.

5.4 TOTAL DISSOLVED GAS

1) **Water Quality Management Plan:** Chelan PUD shall begin implementation of Section 4 of the Water Quality Management Plan (WQMP) immediately upon the effective date of the New License Measures include the following:

- a) **Monitor TDG Compliance.** Maintain two fixed monitoring stations at Rocky Reach Dam to monitor TDG levels annually from April through August, one in the forebay and one in the tailrace, for the term of the New License and any subsequent annual licenses or until such monitoring is no longer required by Ecology. The monitoring point for TDG in the tailrace shall be moved to a location at or near the Juvenile Bypass System outfall as soon as practicable, but no later than Year 2 of the New License. If it is not feasible to conduct TDG monitoring at this site, an alternate location may be developed provided that if such alternate location is not representative of levels of TDG from spillway flows in the tailrace, measurements at the alternate location shall be indexed to the actual TDG levels in the tailrace below the spillway. Outside of the "fish spill" season, Chelan PUD may use spill volume as a surrogate for TDG levels. However, Ecology retains the option to require TDG monitoring during spills outside the fish spill season, including monitoring in expectation that a discharge will occur that exceeds hydraulic capacity (e. g., based on snow depths and predicted weather conditions).
- b) **TDG Abatement Measures.** Manage spill toward meeting water quality criteria for TDG during all flows below 7Q10 levels, but only to the extent consistent with meeting the passage and survival standards set forth in the HCP and Fish Management Plans, as follows:

- (1) Minimize voluntary spill.
 - (2) During fish passage, manage voluntary spill levels in real time in an effort to continue meeting TDG numeric criteria, using the Operational Plan for TDG.
 - (3) Minimize spill, to the extent practicable, by scheduling maintenance based on predicted flows.
 - (4) Avoid spill by continuing to participate in the Hourly Coordination Agreement, or any successor agreement to which Chelan PUD is a party, to the extent it reduces TDG.
 - (5) Maximize powerhouse discharge as appropriate up to 212 kcfs.
 - (6) Implement alternative spillway operations, using any of gates 2 through 12, to determine, in consultation with the RRFF and HCP Coordinating Committee, whether TDG levels can be reduced without adverse effects on fish passage. If effective, implement to reduce TDG.
- c) Gas Bubble Trauma Study. Chelan PUD shall prepare and implement a study of Gas Bubble Trauma (GBT). Such study may be included as part of the biological study for the GAP. The proposed study plan (including scope) and study results should be closely coordinated with the RRFF and the HCP Coordinating Committee, subject to Ecology approval. The final study plan and final study report will be peer-reviewed by recognized experts.
- d) Determination of Compliance. In Year 5 of the effective date of the New License, Chelan PUD shall prepare a report summarizing the results of all TDG studies performed to date, and describing whether compliance with the numeric criteria has been attained. If Ecology concludes, upon reviewing such report and other applicable information, that the Project complies with the applicable TDG numeric criteria, Ecology, in consultation with Chelan PUD, will determine which measures will be continued for the term of the New License to maintain such compliance. If Ecology concludes that compliance with the TDG numeric criteria has not been attained, Chelan PUD shall prepare a report that evaluates what measures (operational and structural) may be reasonable and feasible to implement to further reduce TDG production at the Project. Probable and possible impacts to fish species from such TDG abatement methods shall be included in the report. Chelan PUD shall also submit a report to Ecology summarizing GBT monitoring and other relevant information regarding the effects of TDG produced by the Project on aquatic life. Chelan PUD shall submit these reports to Ecology, members of the RRFF, and members of the HCP Coordinating Committee.

- e) Actions if TDG Numeric Criteria Not Achieved. If compliance with numeric TDG criteria has not been achieved within five years of the effective date of the New License, Ecology will proceed as described below. Such determination shall be based on an analysis of the water quality standard for TDG from the perspective of attainability and biological necessity, as provided in subsections (1) and (2) below:

(1) Aquatic Life Adversely Affected. Upon receipt of the section d) reports, Ecology will determine, based on the monitoring data and analysis provided by Chelan PUD, as may be supplemented by the RRFF and/or the HCP Coordinating Committee, whether aquatic life has been adversely affected, or insufficient information exists to conclude that it has not been adversely affected, by TDG resulting from the Project. If Ecology determines an effect has occurred or insufficient information exists, it shall then further determine, in consultation with Chelan PUD and the RRFF, whether additional seasonable and feasible measures exist to further reduce TDG without significant adverse impact to fish species, and, if so, Chelan PUD shall begin implementation, which may include structural modifications. Ecology retains the right to make the final determination with respect to measures it requires to be implemented to reduce TDG subject to FERC approval, when needed. Nothing limits either Ecology's or Chelan PUD's option to evaluate new, additional or previously evaluated alternatives to abate TDG. Ecology may also require Chelan PUD to perform additional engineering studies of TDG abatement structures or operations. Notice should be given to all parties potentially affected by this decision. If structural modifications are necessary and found reasonable and feasible, Chelan PUD shall provide design, construction and final assessment reports to Ecology in a timely manner as determined by Ecology. If it appears to Ecology, based on the information before it, that no reasonable and feasible TDG abatement measures may exist, Ecology will follow the procedures set forth in subsection (g) below in processing a related rule petition that Chelan PUD may file. If the Corps of Engineers requires a 404 permit, Ecology retains its option to issue a separate water quality certification for construction.

(2) Aquatic Life Not Adversely Affected. If Ecology determines, under subsection (1), that aquatic life has not been adversely affected by TDG resulting from ongoing Project operations, Chelan PUD shall consult with Ecology and the RRFF to determine if any additional reasonable and feasible measures may exist to meet the TDG standards. If Chelan PUD concludes that no other additional reasonable and feasible measures exist to reduce TDG, Chelan PUD may petition Ecology to modify the standards as described below

- f) Chelan PUD may petition Ecology for a rule change to the TDG standard after Year 10 or sooner, if Chelan PUD believes that it can demonstrate it has done everything reasonable and feasible to attain the TDG numeric criteria at that time.

In evaluating whether all reasonable and feasible measures have been done as part of reviewing such petition, Ecology will, among other relevant factors, consider information regarding biological impacts of TDG caused by the Project and the extent to which the Project has achieved the Biological Objectives. However, to be granted, any petition for a rule change must satisfy any additional legal requirements that are applicable.

- g) If, in conformance with the above, Chelan PUD petitions Ecology to modify the standards to eliminate any non-compliance with such standards, and files a timely and scientifically robust petition, Ecology will provide a schedule for the evaluation and completion of action on such rulemaking petition. Such schedule shall provide target dates for Ecology's determination of whether to grant or deny the petition, and, if granted, for submission of proposed rule change to EPA. While such petition is pending before Ecology and EPA, no non-compliance orders or penalties for TDG violations shall be issued against Chelan PUD, as long as Chelan PUD continues to operate in accordance with the GAP and this Certification.

2) **Definition of Fish Spill.** For purposes of compliance, the "fish spill" season, found in Ecology regulations (currently codified as WAC 173-201A-060(4)(b)) shall be designated to occur from April 1 through August 31; and "non-fish spill" season shall be designated to occur from September 1 to March 31, unless otherwise specified in writing by Ecology following consultation with the RRF and the HCP Coordinating Committee. Should spill for fish cease to be required by the fish agencies, the regulatory exemption for elevated levels of TDG occurring during fish spill shall no longer be applicable.

3) **Gas Abatement Plan (GAP).** The GAP (required by WAC 173-201A-060(4)(b), 1997, and WAC 173-201A-510(5)(b)(iii), 2003) shall be revised annually, to reflect any of the above changes, and new or improved information and technologies, and submitted to Ecology for review and approval, by April 1 of the year of implementation. The GAP shall be accompanied by an up-to-date operations plan, a fishery management plan, a physical monitoring plan and a biological monitoring plan (e.g., for GBT). The GAP shall include a copy of the "Fish Passage Plan" (or its alternate, as describe above) for the coming year. Beginning in Year 10 and every 10 years thereafter, the GAP update shall include a review of reasonable and feasible gas abatement options to incrementally reduce TDG caused by the Project, in light of new information and technology. If any reasonable and feasible measures are identified, an implementation plan shall be included in the GAP. In determining whether options to reduce TDG levels are reasonable and feasible, Ecology will consider data and analyses presented by Chelan PUD, the RRF and affected tribes regarding biological impacts of TDG at the Project.

4) **Annual Reports.** Chelan PUD shall perform the following for the term of the New License or until no longer required by Ecology, whichever occurs sooner. To monitor

compliance with the TDG numeric criteria, Chelan PUD shall report the results of the TDG monitoring, including forebay monitoring data reported by the Rock Island Project, the use of any gas abatement measures, and spill levels to Ecology annually. Chelan PUD will also report the biological effects of GBT Presentation of TDG monitoring results in the annual monitoring report should include the following:

- a) Flow over the preceding year (cfs over time)
 - b) Spill over the preceding year (cfs and duration)
 - c) Reasons for spill (*e.g.*, for fish, turbine down time)
 - d) TDG levels during spill (hourly)
 - e) Summary of exceedances and what was done to correct the exceedances
 - f) Results of the fish passage efficiency (FPE) studies and survival per the HCP
 - g) Analysis of monitoring data for confirmation or refinement of the regression equations in the WQMF (Table 2-7, Rocky Reach TDG Compliance Table) used to predict compliance with TDG numeric criteria
 - h) Results of all monitoring and studies performed for TDG control and abatement shall be provided to Ecology in a format acceptable to Ecology.
- 5) Operational and structural changes (*e.g.*, those identified in the Biological Opinion for the Project) that may affect TDG must be subject to review and approval by Ecology during the design and development phase to assure that such changes incorporate consideration of TDG abatement, when appropriate.
- 6) Chelan PUD shall continue operations as described above under 1 through 5, unless modified by a rule change or an amendment to this Certification.
- 7) **Total Maximum Daily Load (TMDL)**. This Certification, along with the WQMF and the updated GAPS, is intended to serve as the Rocky Reach Project's portion of the Detailed Implementation Plan (DIP) for the Mid-Columbia River and Lake Roosevelt TDG TMDL.

5.5 TEMPERATURE

- 1) **Water Quality Management Plan (WQMP)**. Chelan PUD shall implement Section 4 of the WQMP. This includes the following:

- a) Chelan PUD shall monitor hourly water temperatures in the forebay and tailrace annually from April through October for the term of the New License and any subsequent annual licenses or until such monitoring is no longer required by Ecology, whichever occurs sooner. Chelan PUD shall monitor water temperatures in the juvenile bypass system and upstream fishway for one year, unless Ecology determines, in consultation with the RRFF, that additional monitoring is required. Chelan PUD shall also compile hourly water temperature data from the Wells dam tailrace for the term of the New License or any subsequent annual licenses or until such data collection is no longer required by Ecology, whichever occurs sooner. All monitoring shall be performed in accordance with a QAPP, prepared as described in Section 5.7 of this Certification.
- b) Chelan PUD will collect or compile meteorological and water temperature data, including hourly water temperature data from the Wells dam tailrace, for at least the first five (5) years of New License. Such data shall be of sufficient quality to meet technical peer review group standards for running the CE-QUAL-W2 model.
- c) Using the data collected in the first five years of the New License, Chelan PUD shall run the CE-QUAL-W2 model to evaluate the Project compliance with numeric temperature criteria. Chelan PUD shall evaluate, as feasible, the causes of any modeled exceedances. Chelan PUD shall provide a report to Ecology summarizing the results of the ten years of monitoring and modeling (first five years of the new FERC license plus five previous years). The input data, modeling, and results shall be subject to a peer review and review by Ecology. Chelan PUD shall provide the results to Ecology in Year 6 of the New License.
- d) If Ecology concludes that the Project is in compliance with numeric temperature criteria, the aforementioned monitoring and/or analysis requirements may be reduced or eliminated by Ecology. Chelan PUD shall evaluate, as feasible, the causes of any modeled exceedances and include this analysis in the report to Ecology. If Ecology, in consultation with the technical peer review group, concludes that the analysis is deficient with respect to data input or inappropriate modeling assumptions or procedures and this deficiency is judged to potentially result in significant inaccuracy, Ecology reserves the right to request revision and re-running of the model based on revised data, assumptions or procedures.
- e) If the Project is out of compliance with the numeric temperature criteria, Chelan PUD shall submit documentation to identify how it intends to come into compliance. However, in lieu of submitting such documentation, Chelan PUD may, upon a showing to Ecology that no reasonable and feasible improvements exist, request a change to water quality standards as appropriate and consistent with legal requirements in evaluating whether all reasonable and feasible measures have been taken. Ecology will consider, among other relevant factors, information

regarding biological impacts of temperature non-compliance caused by the Project and the extent to which the Project has achieved the Biological Objectives.

- f) If, in conformance with the above, Chelan PUD petitions Ecology to modify the standards to eliminate any non-compliance with such standards, and files a timely and scientifically robust petition, Ecology will provide a schedule for the evaluation and completion of action on such rulemaking petition. Such schedule shall provide target dates for Ecology's determination of whether to grant or deny the petition, and, if granted, for submission of proposed rule change to EPA. While such petition is pending before Ecology and EPA, no non-compliance orders or penalties for temperature violations shall be issued against Chelan PUD, as long as Chelan PUD continues to operate in accordance with this Certification.
- g) Chelan PUD shall maintain the calibrated CE-QUAL-W2 model and data used for the 10-year analysis and make the data and model available to EPA, Ecology, affected tribes and other entities involved in the TMDL implementation program. Chelan PUD will participate and cooperate with the parties implementing the TMDL.
- h) Chelan PUD, as part of its participation in tributary restoration planning and implementation under the HCP, will help identify opportunities to improve water temperature in the tributaries.

2) **Temperature TMDL.** Ecology anticipates that EPA will issue a temperature TMDL for the Columbia River at some future date. If provisions of the temperature TMDL are more protective of temperature, such provisions shall supersede any conflicting provisions of this Certification, subject to FERC approval, if needed. If a TMDL is not timely approved, Ecology reserves the right to address any temperature exceedances as may be necessary to meet state water quality standards for temperature.

5.6 LOCALIZED PROJECT EFFECTS

1) **Macrophyte Beds.** Chelan PUD shall implement the actions identified in the WQMP, Section 4, with respect to localized impacts on macrophyte beds. Chelan PUD will develop a QAPP (per requirements in Section 5.7 below) to determine if the water quality criteria for dissolved oxygen (DO), temperature and pH are met in shallow water habitats, including macrophytes beds, in the reservoir. If measurements reveal non-compliance with water quality numeric criteria or potential problems for designated uses, further sampling will be conducted, in coordination with the RRF and Ecology, to determine the impact on aquatic habitat and associated biota. This additional sampling will be coordinated with any concurrent resident fish monitoring that may be developed by Chelan PUD, in consultation with the RRF. If such impacts are found to be significant and caused by the Project, Chelan PUD will consult with the RRF and

Ecology to determine what actions may be reasonable and feasible to protect aquatic life. If monitoring of water quality in shallow water habitats shows noncompliance with water quality standards for pH, DO, or temperature, and substantial evidence exists that the project causes such noncompliance, Chelan PUD shall, in consultation with the RRFF and Ecology, identify any actions that are reasonable and feasible to protect aquatic life that may be adversely affected from such noncompliance and propose an action plan for Ecology's approval or modification.

2) **Aquatic Invasive Species (AIS).** Within one year of the effective date of the New License, in consultation with the RRFF, Chelan PUD shall develop and begin implementation of an AIS Monitoring and Control Plan (Monitoring Plan) for the Rocky Reach Project, to monitor for presence of new invasive species at or near Project facilities. The Monitoring Plan shall be coordinated with the Ecology's Freshwater Aquatic Weed Control Program. The Monitoring Plan and implementation shall include the following components:

- a) Signage at boat launches and distribution of educational materials and boater questionnaires to voluntary participants at Rocky Reach Reservoir boat launch sites during the peak boating season (May 1 -October 30 each year) to increase boater awareness of dangers of spreading AIS, including the methods one can take to decrease the spread of AIS (e.g., clean the weeds off the boat and drain the live well before going to a new waterbody).
- b) Methodology and schedule of prevention, monitoring and control measures to regarding the presence and movement of AIS at or near Project facilities.
- c) An annual report of monitoring and educational activities conducted each year.

3) **Stormwater.** Chelan PUD shall comply with state stormwater requirements as they apply to the Project.

5.7 MONITORING AND REPORTING WATER QUALITY PARAMETERS

1) **Monitoring Plans.** Within one year of the issuance of the effective data of the New License, Chelan PUD shall prepare quality assurance project plans (QAPP) for all studies included in the WQMP and submit them to Ecology for review and written approval. A QAPP shall be prepared for all water quality monitoring, including TDG and temperature studies, the proposed GBI study, and monitoring water quality in shallow water habitat in the reservoir.

2) **QAPP.** The QAPP shall follow the Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies (July 2004, Ecology Publication Number 04-03-030) or its successor. The QAPP shall include, at a minimum, a list of parameters to be

monitored, a map of sampling locations, and descriptions of the purpose of the monitoring, sampling frequency, sampling procedures and equipment, analytical methods, quality control procedures, data handling and data assessment procedures, and reporting protocols. Chelan PUD shall review and update the QAPP annually based on a yearly review of data quality. Ecology may also require future revisions to the QAPP based on monitoring results, regulatory changes, changes in project operations and/or the requirements of TMDLs. Changes proposed by Chelan PUD need written approval by Ecology before taking effect, and shall be implemented as approved or modified by Ecology.

- 3) The TDG monitoring program shall be at least as stringent as the QA/QC calibration and monitoring procedures and protocols developed by the USGS monitoring methodology for the Columbia River.
- 4) **Implementation.** Implementation of each QAPP shall begin as soon as Ecology has provided Chelan PUD with written approval of the plan.
- 5) **Peer Review.** Chelan PUD shall coordinate a technical peer review of any proposed monitoring, study plans, or study plan results, should Ecology request such. Ecology shall be a participant or observer. Results of such peer review shall be summarized and provided to Ecology.
- 6) Hourly TDG information shall be made available to the public via Chelan PUD's website, as close to the time of occurrence as technologically feasible.
- 7) **Notification Regarding TDG Spill.** Chelan PUD shall notify Ecology, Central Regional Office, Water Quality Program within 48 hours (either before or after) of any TDG spill; this includes the start of spill for fish, as defined above, and any deviation from the Operational Plan for TDG or the fish spill plan that adversely affects TDG levels. This notification may be either electronic or written.
- 8) **Annual Report.** Water quality monitoring results, along with a summary report, shall be submitted by March first of each year to the Department of Ecology, Central Region Office, Water Quality Program. Observed violations shall be highlighted. Ecology will use the monitoring results to track the Project's progress toward meeting and remaining in compliance with state water quality standards.
- 9) **Duration of Monitoring and Reporting.** The monitoring and reporting required under this Certification are intended to continue throughout the life of the New License and any subsequent annual licenses, or until such monitoring is modified or no longer required by Ecology, whichever occurs sooner.

5.8 CONSTRUCTION ACTIVITIES

- 1) Ecology may require a separate 401 water quality certification if another Federal permit is needed for construction of any development or mitigation project.
- 2) All water quality criteria as specified in WAS 173-201A apply to any construction work needed to implement development or mitigation projects required under the New License.
- 3) Unless otherwise stated in a separate 401 certification (described above), the turbidity criterion for Class A waters (WAC 173-201A-030(2), 1997) may be modified to allow a temporary mixing zone during and immediately after in-water or shoreline construction activities that might disturb in-place sediments. A temporary turbidity mixing zone is subject to the constraints of WAC 173-201A-100(4) and (6) and may be authorized by Ecology only after the activity has received all other necessary local and state permits and approvals, and after the implementation of best management practices (BMPs) to avoid or minimize the disturbance of in-place sediments and exceedances of the turbidity criterion. The temporary turbidity mixing zone for waters with flows greater than 100 cubic feet per second (cfs) at the time of construction is 300 feet downstream of the activity causing the turbidity exceedances.
- 4) For all construction activities under the New License, a water quality protection plan (WQPP) shall be prepared and implemented for each project involving work in or near water. The WQPP shall include:
 - A copy of the Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife for the project;
 - A description of all Best Management Practices (BMPs) to be employed for in and near-water work;
 - A plan for sampling and monitoring during construction;
 - A plan for implementing mitigation measures should a water quality violation occur; and
 - A procedure for reporting any water violation to Ecology.
- 5) Chelan PUD shall submit each WQPP to Ecology for review and written approval prior to starting work.

5.9 SPILL PREVENTION AND CONTROL

- 1) RCW 90.56 prohibits any discharge of oil, fuel, or chemical into state waters or onto land where such contaminants could potentially drain into state waters.

- 2) Chelan PUD shall keep records of the amounts of oil used on-site for any oil-using components at each development. These records shall be made available to Ecology upon request.
- 3) Chelan PUD shall comply with its most recent approved version of the Spill Prevention Control and Countermeasure (SPCC) Plan for the Project and shall be made available to Ecology during any on-site inspection.
- 4) Chelan PUD shall coordinate spill response planning and efforts with other hydroelectric facilities on the Columbia River such as through its participation with the Columbia-Snake River Spill Response Initiative (CSRSPI). Chelan PUD shall train employees in the proper response techniques and the proper use and deployment of equipment.
- 5) Activities causing distressed or dying fish, fish kills, or any discharge of oil, fuel, or chemicals into state waters, or onto land or structures where such contaminants could potentially drain into state waters, are prohibited.
- 6) Clean-up, in the event of a discharge of oil, fuel or chemicals into state waters, or onto land or such structures where such contaminants could potentially drain 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.
- 7) Reporting spills into state waters, spills onto land where contaminants could potentially drain into state waters, or cause fish kills or any other significant water quality problems, shall be reported immediately to Ecology's Spills Response Program, in the Central Regional Office, at 1-800-258-5990. Notification shall include a description of the nature and extent of the problems, any action taken to correct the problem, plus any proposed changes in operations to prevent further problems. Chelan PUD also shall notify Ecology's Water Quality Program in the Central Region Office within 48 hours, with a written follow-up report within two weeks of the incident.

APPENDIX A to the Water Quality Certification
INTER-AGENCY AGREEMENT
between
WASHINGTON DEPARTMENT OF ECOLOGY
and
WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

**Regarding Coordination on the
Rocky Reach Hydroelectric Project**

August 2005

[This appendix has been omitted.]

APPENDIX B to the Water Quality Certification

Water Quality Implementation Measures

| WQ Parameter | PME Components | Effective Date | Frequency | Duration | Reporting Requirement | WQMP Section |
|--------------|--|--|--|--|--|--------------|
| <i>TDG</i> | <i>Measures to Meet Numeric Criteria and Standards</i> | <i>Effective Date of License</i> | <i>See below</i> | <i>Term of License</i> | <i>Annual Report to Ecology; Annual Gas Abatement Plan</i> | <i>4.1</i> |
| | Gas Abatement Plan (GAP) | Effective Date of New License | Annually | Term of License | GAP | 4.1 |
| | TDG Monitoring (Forebay and Tailrace at JBS Outfall; data from Rock Island Dam Forebay). Relocated tailrace monitor. | Effective Date of New License; relocate monitor by Year 2 of New License | Hourly from April – August during fish spill. As directed, outside fish spill. | Term of License or until Ecology no longer requires | Daily during April-May to Chelan PUD website. In Annual Report | 4.1.1 |
| | Operation Plan for Fish Passage Spill Management | Effective Date of New License | During fish spill | Term of License | In GAP | 4.1.2 |
| | Minimize Voluntary Fish Passage Spill * | Effective Date of New License | During fish spill | Ongoing to meet survival standards – Term of License | In Annual Report | 4.1.3 |
| | Minimize Spill Due to Maintenance * | Effective Date of New License | January - December | Term of License | In Annual Report | 4.1.4 |
| | Avoid Spill * | Effective Date of New License | January - December | Term of License | In Annual Report | 4.1.5 |
| | Maximize Powerhouse Discharge, Manage Active Storage * | Effective Date of New License | January – December, when flows exceed 200 kcfs | Term of License | In Annual Report | 4.1.6.1 |
| | Spill From Gates 2-12 * | Effective Date of New License | April – August, evaluate when flows exceed 200 kcfs | Term of License | In Annual Report | 4.1.6.2 |

* To the extent consistent with the survival standards in the HCP and Fish Management Plans

| WQ Parameter | PME Components | Effective Date | Frequency | Duration | Reporting Requirement | WQMP Section |
|--------------------|--|---|---|---|---|--------------|
| | Monitoring of Aquatic Life for GBT (salmon, resident fish and macroinvertebrate studies) | Effective Date of New License | RI Dam for salmon annually April – August. Resident fish studies during high spill periods (May – July) in high flow years. Or as modified subject to Ecology approval. | Salmon Monitoring for five years. Resident fish and macroinvertebrate studies for 1-2 years or until database adequate to conclude either no effect or that TDG levels harm designated uses. Or as modified by peer review group. | Annual Report after each study. | 4.1.7 |
| | Determination of TDG Compliance at Year 5 | Year 5 | Once | Five years | Annual Report Final Determination | 4.1.8 |
| | Additional actions, which may include structural modification feasibility studies | Year 6, if criteria not met. If appropriate, begin feasibility studies by Year 6. | Not Applicable | If Implemented, Permanent Structure | Feasibility, Value Engineering, Design, Construction, and Final Assessment Reports. | 4.1.8.1 |
| | Actions if TDG Compliance Not Achieved | Year 6 | | | | 4.1.9 |
| | Aquatic Life Adversely Affected. Reasonable and feasible additional actions, which may include structural modification | Year 6 | Annually | New Term of Compliance Schedule for Dams | As determined by Ecology | 4.1.9.1 |
| | Aquatic Life Not Affected. If no reasonable and feasible actions, Chelan PUD may petition Ecology for rule modification. | Year 6 | Once | As needed to complete | As determined by Ecology | 4.1.9.2 |
| <i>Temperature</i> | <i>Measures</i> | <i>Effective Date of License</i> | <i>On going</i> | <i>Term of License</i> | | 4.2 |

| WQ Parameter | PME Components | Effective Date | Frequency | Duration | Reporting Requirement | WQMP Section |
|---|---|---|---------------------------------------|---|--|--------------|
| | Water Temperature Monitoring during TDG Monitoring (Forebay and Tailrace; Rock Island Dam Forebay; record Wells Tailrace) | Effective Date of New License | Hourly during April – October | Term of License or until Ecology no longer requires | Daily during April-October to Regional Database. Annual Report | 4.2.1 |
| | Temperature Monitoring in Fishways and JBS | Effective Date of New License | Hourly during April – October | One year unless Ecology determines additional monitoring is required | Annual Report | 4.2.1 |
| | Temperature Modeling to Confirm Compliance | Effective Date of New License; modeling report due Year 6 | Once, unless compliance not confirmed | At end of first five years. | 6 th Annual Report | 4.2.2 |
| | EPA Water Temperature TMDL Participation | Upon Implementation of TMDL | As needed | Term of License | As Required | 4.2.3 |
| | Tributary Watershed Participation and HCP Tributary Committee | Effective Date of New License | Annually | Term of License | Not Applicable | 4.2 |
| <i>Flow</i> | <i>Project Operations</i> | <i>On going</i> | <i>Annually</i> | <i>Term of License</i> | | <i>4.3</i> |
| | Hourly Coordination | Effective Date of New License | On-going | Term of License | Annual status report | 4.3 |
| | Hanford Reach Agreement | Effective Date of New License | On-going | Term of License | Annual status report | 4.3 |
| <i>Shallow Water Macrophyte Beds (temperature, DO and pH)</i> | <i>Water Quality Monitoring</i> | <i>Effective Date of New License</i> | <i>In the initial year.</i> | <i>One year, unless RRF determines additional monitoring is needed.</i> | <i>Annual Report</i> | <i>4.4</i> |
| <i>Aquatic Invasive Species</i> | <i>Aquatic Invasive Species Monitoring and Control Plan</i> | <i>Effective Date of New License</i> | <i>Annually</i> | <i>Term of License</i> | <i>Annual Report</i> | <i>4.5</i> |
| <i>Spills of Oils and Toxics</i> | <i>SPCC Plan & Columbia-Snake River Spill Response Initiative</i> | <i>Effective Date of New License</i> | <i>On-going, updated as required</i> | <i>Term of License</i> | <i>As required by SPCC regulation</i> | <i>4.6</i> |

APPENDIX C to the Water Quality Certification

Biological Objectives and Implementation Measures per the Fish Management Plans to Support Existing and Designated Uses

| Designated Use | Biological Objective | Evaluation Timeframe | Actions if Objective Achieved | Alternative Management Actions | Fish Management Plan Action |
|---|---|-----------------------------|--|---|--------------------------------------|
| Salmonid Migration | HCP Plan Species (Chinook, Steelhead, Sockeye, Coho) 91% Project Passage Survival | By 2013 | Maintain Action. | Additional Tools (bypass modifications, spill, other) | HCP Sections 3 and 5 |
| Salmonid Harvest | HCP Plan Species NNI Hatchery Production Achieves 7% | By 2013 | Maintain Action. Adjust 7% Production Level Every 10 Years | Modify hatchery facilities or use other method for artificial production (lake outplants) | HCP Sections 3 and 8 |
| Salmonid Rearing | HCP Plan Species Tributary Fund Implements Habitat Improvements For NNI | By 2013 | Maintain Action. | Modify type of projects funded | HCP Sections 3 and 7 |
| Salmonid Spawning | HCP Plan Species Adult Passage Survival Included in 91% Project Passage Survival. | By 2013 | Maintain Action. | Additional Tools | HCP Sections 3 and 5 |
| Bull Trout Adult Upstream Passage | Take does not exceed 2% through the upstream fishway. | 2005-2008 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRFF, to address identified problems. | Bull Trout Plan Sections 4.1.1-4.1.3 |
| Bull Trout Adult Downstream Migration | Take does not exceed 5% passing through turbines; 2% passing through spillways; and 2% passing through the downstream bypass. | 2005-2008 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRFF, to address identified problems. | Bull Trout Plan Section 4.1.2 |
| Bull Trout Adult Rearing in the Reservoir | Take does not exceed 2 fish for the fish predator control program. | 2005-2008 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRFF, to address identified problems. | Bull Trout Plan Section 4.1.2 |
| Bull Trout Sub-adult Downstream | Take does not exceed limits when established by USFWS. | As recommended by the RRFF. | Maintain Action. Continue appropriate monitoring and the | Pursue feasibility of Project operations of fishway/bypass if migration problems are identified | Bull Trout Plan Sections 4.1.1-4.1.3 |

| Designated Use | Biological Objective | Evaluation Timeframe | Actions if Objective Achieved | Alternative Management Actions | Fish Management Plan Action |
|---|--|--|---|--|--|
| Migration | | | adaptive management process. | | |
| Bull Trout Sub-adult Rearing in the Reservoir | Take does not exceed limits when established by USFWS. | 2005-2008 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRF, to address identified problem(s). | Bull Trout Plan Section 4.1.2 |
| White Sturgeon Natural Recruitment | Natural reproduction potential | Years 8-10, 13, and 18 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRF, to address identified problem(s). | White Sturgeon Plan Section 4.4 |
| White Sturgeon Population at Carrying Capacity | Increase the white sturgeon population in the Reservoir through supplementation to a level commensurate with available habitat and allowing for appropriate and reasonable harvest | Years 3-5, adjust stocking level; Years 6 – 50 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | RRF to recommend stocking level, broodstock source. Develop and implement a plan, in consultation with the RRF, to address identified problems | White Sturgeon Plan Sections 4.1-4.3; 4.6 |
| White Sturgeon Harvest | Success in creating population with a stable age-structure that allows for limited harvest | Years 20 – 50 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRF, to address identified problems. | White Sturgeon Plan Sections 4.1-4.6 |
| Pacific Lamprey Adult Upstream and Downstream Migration | Success similar to best experience at other similar projects (Adult upstream fish passage as defined by the RRF) | By Year 5 | (Continuous reassessment every 10 years) | Develop and implement a plan, in consultation with the RRF, to address identified problems. | Pacific Lamprey Sections 4.1.1-4.1.7 and 4.4 |
| Pacific Lamprey Juvenile Downstream Migration | Maintain safe, effective, and timely volitional passage Criteria (as defined by the RRF) | TBD by RRF with 5 year review by RRF | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRF, to address identified problems. | Pacific Lamprey Sections 4.2.1-4.2.2 and 4.4 |
| Pacific Lamprey Rearing | Avoid and minimize Project impacts on rearing habitat | By Year 5 | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRF, to address identified problems. | Pacific Lamprey Sections 4.3 and 4.4 |

| Designated Use | Biological Objective | Evaluation Timeframe | Actions if Objective Achieved | Alternative Management Actions | Fish Management Plan Action |
|---|---|---|---|--|--------------------------------|
| Pacific Lamprey Overall Combined Goal | No Net Impact | TBD by RRFF | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRFF, to address identified problems. | Pacific Lamprey Section 4 |
| Native, Non-Stocked Resident Fish Species | No negative impacts caused by ongoing Project operations. | Years 1-2, with subsequent surveys determined by RRFF | Maintain Action. Continue appropriate monitoring and the adaptive management process. | Develop and implement a plan, in consultation with the RRFF, to address identified problems. | Resident Fish Plan Section 4.2 |

APPENDIX B

U.S. Department of the Interior, Fish and Wildlife Service Fishway Prescriptions Pursuant to Section 18 of the FPA filed March 14, 2005, supplemented June 1, 2005, and modified May 24, 2006

Note: For convenience and clarity, these prescriptions are numbered to match the numbers and sections contained or otherwise referenced in the proposed license articles and management plans accompanying the Final Comprehensive Settlement Agreement (Settlement Agreement) for the Rocky Reach Hydroelectric Project, filed with the Commission on March 22, 2006.

Article 4. Bull Trout Management Plan

Chelan PUD shall implement the Bull Trout Management Plan to identify, monitor, and address ongoing Project effects on bull trout, as described in Chapter 4 of the Settlement Agreement, which is incorporated herein by reference. Specifically:

(a) Operate Upstream Fishway and Downstream Bypass

- 1) Chelan PUD shall continue to provide upstream passage for adult bull trout through the existing fishway and downstream passage for adult and sub-adult through the existing downstream bypass. Chelan PUD shall continue to operate such upstream fishway and downstream bypass in accordance with the criteria for anadromous salmonids set forth in the Habitat Conservation Plan and the annual Rocky Reach Fish Passage Plan (RRFPP), as approved and/or amended by the Rocky Reach HCP Coordinating Committee.
- 2) Upstream Fishway Counts. Chelan PUD shall continue to conduct video monitoring in the upstream fishway, except during the annual fishway maintenance period, to count bull trout passing through the fishway and provide information on size, age, and condition of bull trout.

(b) Adult Bull Trout Upstream and Downstream Passage Evaluation

- 1) Beginning in year 10 of the New License and continuing every 10 years thereafter during the term of the New License, Chelan PUD shall conduct a one-year adult bull trout monitoring program for the purpose of determining whether Chelan PUD remains in compliance with the Project's allowable level of incidental take of bull trout due to upstream and downstream passage. If the Project's allowable level of incidental take for the Project is exceeded during one such monitoring year, Chelan PUD shall conduct monitoring in the succeeding year. If the Project's allowable level of incidental take for the Project is exceeded during the succeeding monitoring year, Chelan PUD shall develop and implement a plan, in

consultation with the Rocky Reach Fish Forum (RRFF) (See Section 15 of the SA) and agreed to by the United States Fish and Wildlife Service (USFWS), to identify and address the factors contributing to exceedance of the allowable level of incidental take.

- 2) Chelan PUD shall prepare a report on the results gathered during each year of the one-year periods described in section (b)(1) of this Article. Such annual report shall also examine whether a correlation exists between upstream and downstream passage times and Project operations.

(c) Sub-Adult Bull Trout Monitoring Methods. Upon recommendation of the RRFF, Chelan PUD shall implement appropriate and reasonable methods for monitoring sub-adult bull trout at the Rocky Reach dam.

(d) Implement Appropriate and Reasonable Measures. Chelan PUD shall identify and implement appropriate and reasonable measures, in consultation with the RRFF and agreed to by USFWS, to modify the upstream fishway and downstream bypass or operations to reduce the identified impacts to bull trout passage, if any.

(e) Participate in development and implementation of the USFWS Recovery Plan

- 1) *Information exchange and regional monitoring efforts*. During the term of the New License, Chelan PUD may continue to participate in information exchanges with other entities conducting bull trout research and regional efforts to explore methods to monitor upstream and downstream movement of sub-adult bull trout in the mainstem Columbia River. If monitoring methodologies become available, Chelan PUD shall work with the RRFF to identify and implement appropriate and reasonable measures for monitoring sub-adult bull trout at the Rocky Reach Dam.

Article 5. Pacific Lamprey Management Plan

Chelan PUD shall implement the Pacific Lamprey Management Plan to measure and address any ongoing Project impacts on Pacific Lamprey and to achieve No Net Impact (NNI), as described in Chapter 5 of the SA, which is incorporated herein by reference. Specifically:

(a) Adult Upstream Passage. Chelan PUD shall measure and address ongoing Project impacts on upstream passage of adult Pacific lamprey, if any.

- 1) *Fishway Operations*. Chelan PUD shall continue to operate the upstream Project fishway in accordance with anadromous fish criteria described in

- the annual Fish Passage Plan, except as provided in section (a)(4) of this Article.
- 2) *Adult Upstream Passage Counts.* Chelan PUD shall maintain, using the most current technology, annual adult Pacific lamprey upstream passage counts in the Project fishway for the term of the New License and any subsequent annual licenses.
 - 3) *Upstream Passage Improvement Literature Review.* Within one year of the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, complete a literature review of the effectiveness of upstream lamprey passage measures implemented at other hydroelectric projects in the Columbia and Snake Rivers, and evaluate whether it would be appropriate and reasonable to implement similar measures at Rocky Reach Dam.
 - 4) *Modifications to Improve Upstream Passage.* As soon as practicable, but no later than five years after the effective date of the New License, Chelan PUD shall, in consultation with the RRFF, design and implement appropriate and reasonable upstream passage improvement measures identified in section (a)(3) of this Article, if any.
 - 5) *Evaluation of Upstream Passage Modifications.* Within one year following the implementation of any upstream passage improvement measure at Rocky Reach Dam required under section (a)(4) of this Article, Chelan PUD shall, in consultation with the RRFF, monitor the effectiveness of such measures for an appropriate period of time, using radio telemetry or other appropriate and reasonable methods. If, as determined by the RRFF, the results of the monitoring indicate that passage has not significantly improved as a result of such measures, Chelan PUD shall, in consultation with the RRFF, develop and implement a plan to identify additional appropriate and reasonable measures, if any. Measures described in (a)(3), (a)(4), and (a)(5) will be repeated, as necessary, until adult Pacific lamprey passage at the Project is similar to the best passage rates found at other hydroelectric projects on the mainstem Columbia and Snake Rivers.
 - 6) *Adult Downstream Passage.* If Chelan PUD, in consultation with the RRFF, determines that additional significant ongoing Project effects on adult downstream passage have been identified through the investigations described in section (a)(3), (a)(4), and (a)(5) of this Article, Chelan PUD shall, in consultation with the RRFF, develop a plan and implement appropriate and reasonable measures to address such effects.
 - 7) *Periodic Monitoring.* Once adult passage at the Project is determined under section (a)(5) of this Article to be similar to the best passage rates found at other hydroelectric projects on the mainstem Columbia and Snake rivers, then every 10 years during the term of the New License or on a schedule agreed to by the RRFF, Chelan PUD shall, in consultation with the RRFF, monitor adult lamprey passage through the Project fishway, for an

appropriate period of time, using radio telemetry or other appropriate and reasonable methods. Chelan PUD, in consultation with the RRFF, will evaluate the results of such monitoring to identify and implement any appropriate and reasonable measures to contribute towards achieving NNI.

(b) Juvenile Downstream Passage Improvement Measures. Chelan PUD shall measure and address potential ongoing Project-related impacts on downstream passage of juvenile Pacific lamprey, if any.

- 1) *Operate Downstream Fish Passage Facilities.* Chelan PUD shall operate the Project's downstream fish passage facilities in accordance with the operation criteria for anadromous fish passage facilities in accordance with the operation criteria for anadromous salmonids and compatible bull trout mitigation guidelines set forth in the HCP and the annual FPP, as approved and/or amended by the Rocky Reach HCP Coordinating Committee.
- 2) *Juvenile Lamprey Impingement Monitoring and Reporting.* Chelan PUD shall monitor and report annually to the RRFF any lamprey impingement on turbine intake screens, until such time as the RRFF recommends that monitoring is no longer necessary. If significant ongoing Project effects are identified through the investigations described in this section, Chelan PUD shall, in consultation with the RRFF, develop a plan and implement appropriate measures to address such effects.
- 3) *Measurement of Impacts on Juvenile Downstream Passage.* Between years two and five of the New License, Chelan PUD shall continue to measure the type and magnitude of ongoing Project impacts on the downstream passage of juvenile lamprey, using appropriate and reasonable methodologies.

(c) Identify and implement measures to address unavoidable impacts in order to achieve No Net Impact (NNI). Within two years of the effective date of the New License, Chelan PUD shall collect and compile information regarding Pacific lamprey distribution, population status and trends, and juvenile downstream migration timing, to identify and implement appropriate and reasonable measures in order to achieve NNI. Chelan PUD shall also develop sampling and collections protocols and collect tissue samples and other relevant biological information from adult and juvenile lamprey populations that pass through the Project. Chelan PUD shall, in consultation with the RRFF, identify, consider, and implement appropriate and reasonable measures to address unavoidable losses at the Project in order to achieve NNI. In year five of the New License, and every five years thereafter, for the term of the New License and any subsequent annual licenses, Chelan PUD shall provide a report to the RRFF and FERC on the status of the Adaptive Management process regarding unavoidable impacts to Pacific lamprey.

Article 10. Habitat Conservation Plan.

(a) The Licensee shall carry out its obligations as set forth in the 50-year HCP Agreement for the Rocky Reach Hydroelectric Project No. 2145, filed with the Commission on November 24, 2003, as approved by the Commission at 107 FERC ¶ 61,280 (2004) and 107 FERC ¶ 61,281 (2004), and prescribed by National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service pursuant to Section 18 of the Federal Power Act. Further, the licensee shall file with the Commission: (1) the final annual and comprehensive progress reports developed pursuant to the HCP; and (2) the final results of all studies and testing pursuant to the HCP.

(b) Prior to taking any action pursuant to the HCP that requires a change in the authorized project facilities or operations not specifically identified in the HCP, the licensee shall file a license amendment application.

(c) The licensee shall file design drawings prior to the implementation of any modification or addition to project works that is necessary to implement the HCP. The licensee shall file such design drawings for Commission approval at least 90 days prior to the start of construction or modification. The licensee will file as-built drawings with the Commission within six months after completion of construction or modification.

Section 11. Reservation of Agency Authority**11.1.2 FPA Section 18**

(a) The U.S. Fish and Wildlife Service (USFWS) may exercise its reserved authority under Section 18 of the FPA regarding Plan Species covered by the HCP agreement only as provided in the HCP Agreement (Agreement). In the event the Agreement is terminated and the National Marine Fisheries Service (NMFS) or USFWS exercise authority under Section 18 of the FPA regarding Plan Species, the RRFF shall consider whether the exercise of that authority is consistent with the measures in this Agreement. In addition, the RRFF may make recommendations to NFMS and the USFWS regarding how the exercise of such authority can be accomplished in a manner consistent with this Agreement. In the event that the RRFF does not reach consensus regarding such recommendations, the dispute resolution provisions of Section 17 of this Agreement shall apply.

(b) To the extent practicable, USFWS shall provide notice to the RRFF before exercising any reserved authority under Section 18 of the FPA regarding species covered by this Agreement (i.e., species other than Plan Species), and the RRFF may then make recommendations to the USFWS regarding how the exercise of such authority can be accomplished in a manner consistent with this Agreement. In the event the RRFF does

not reach consensus regarding such recommendations, the dispute resolution provisions of Section 17 of this Agreement shall apply.

(c) In the event that either NMFS or USFWS exercises its authority under Section 18 of the FPA regarding Plan Species while the Agreement remains in effect, or exercises such authority regarding either Plan Species or species other than Plan Species in a manner that is materially inconsistent with this Agreement, any other Party may withdraw pursuant to Section 16 of this Agreement.

APPENDIX C

**United States Department of Commerce, National Marine Fisheries Service
Fishway Prescriptions Pursuant to Section 18 of the FPA
filed March 9, 2005**

The Licensee shall carry out its obligations, in their entirety, as set forth in the Anadromous Fish Agreement and Habitat Conservation Plan for the Rocky Reach Hydroelectric Project No. 2145, filed with the Federal Energy Regulatory Commission on November 24, 2003, and as approved by the Commission at 107 FERC ¶ 61,280 and ¶ 61,281.

APPENDIX D

Reasonable and Prudent Measures and Accompanying Terms and Conditions Pursuant to the Incidental Take Statement of the U.S. Fish and Wildlife Service's Biological Opinion filed December 8, 2008

Reasonable and prudent measures (RPMs) are non-discretionary measures designed to minimize impacts on specific individuals or habitats affected by the proposed action, and require only minor changes to the project. The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the bull trout.

RPM 1. FERC shall require Chelan PUD, in coordination with the Service, to provide adequate year-round passage conditions for all life stages of bull trout at all Project facilities.

RPM 2. FERC shall require Chelan PUD, in coordination with the Service, to minimize the effects of spillway operations and hydrographic variation to all life stages of bull trout at all Project facilities.

RPM 3. FERC shall require Chelan PUD, in coordination with the Service, to minimize the effects of the Hatchery Supplementation Program to all life stages of bull trout.

RPM 4. FERC shall require Chelan PUD, in coordination with the Service, to minimize the effects of the *Bull Trout Management Plan* and Predator Control Program to all life stages of bull trout.

RPM 5. FERC shall require Chelan PUD, in coordination with the Service, to design and implement a bull trout monitoring program that will adequately detect and quantify Rocky Reach Project impacts, including those associated with the Rocky Reach Dam, Dryden and Tumwater Dams trapping facilities, and hatchery facilities. This information will allow the Service to determine whether authorized take levels are exceeded.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the action agency must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and also outline required reporting and monitoring requirements. *These terms and conditions are non-discretionary.* All plans called for in these terms and conditions shall be provided to the Service upon completion.

To implement RPM 1:

1. FERC shall require Chelan PUD, in coordination with the Service, to continue to provide at Rocky Reach year-round upstream passage through the existing fishway with minimal interruptions for maintenance, and downstream passage for adult and sub-adult bull trout through the existing juvenile fish bypass from April 1 – August 31. Any future modifications to the existing adult fishway or juvenile bypass (e.g., to improve passage conditions for sturgeon or lamprey) shall not impair bull trout passage or use, or increase the potential for injury.

To implement RPM 2:

2. FERC shall require Chelan PUD, in coordination with the Service, to implement the *Water Quality Management Plan* as a means to achieve TDG and other water quality standards in accordance with the 401 Certification.

3. FERC shall require Chelan PUD, in coordination with the Service, to evaluate shoreline erosion and the impacts of hydrographic variation in the mainstem Columbia River, as described in the Settlement Agreement. Use of large wood captured at the Rocky Reach Dam could be used by fish habitat restoration projects funded by the Tributary Conservation Plan.

To implement RPM 3:

4. FERC shall require Chelan PUD to operate Dryden and Tumwater Dam fishways to allow year-round upstream passage of bull trout, except for during routine maintenance, to reduce impacts such as delay, temperature, and handling associated with operation of the trapping facilities. Measures to reduce these impacts shall be developed in coordination with the Service. Any future modifications to the existing adult fishways (e.g., to improve passage conditions for sturgeon or lamprey) shall not impair bull trout passage or use, or increase the potential for injury.

5. FERC shall require Chelan PUD, in coordination with the Service, to implement appropriate and reasonable measures to minimize the injury or death of bull trout at Tumwater and Dryden Dams fishways and traps when collecting fish for Rocky Reach Project programs, and during use and holding of fish in the trap and holding tanks. Key considerations include holding time in traps, water temperature in the holding tanks, and the likelihood of injury/death in the holding tanks. Using this information, Project operations shall be modified to the extent practicable, consistent with the Settlement Agreement, to further minimize take.

6. FERC shall require Chelan PUD, in coordination with the Service, to operate Rocky Reach Hatchery Supplementation facilities in a manner to meet the terms of the National Pollution Discharge Elimination System (NPDES) permit.

To implement RPM 4:

7. FERC shall require Chelan PUD to minimize the effects of the implementation of the *Bull Trout Management Plan* by implementing these measures: 1) ensure that the hands of fish handlers are free of sunscreen, lotion, or insect repellent; 2) implement all capture and handling methods in a manner that avoids temperature stress of fish (i.e., water temperature should not exceed 15 C; 3) release any bull trout captured as soon as possible, and as close as possible to the point of capture; 4) if bull trout are held in a tank, provide a healthy environment for the stressed fish and minimize the holding time; 5) design fish handling procedures to include water to water transfers, the use of shaded, dark containers, and supplemental oxygen; and 6) if a bull trout is captured and showing signs of stress or injury, release only when it is able to maintain itself. It may be necessary to nurture the fish in a holding tank until it has recovered.

8. FERC shall require Chelan PUD to minimize the effects on bull trout of the Predator Control Program and the broodstock capture component of the *White Sturgeon Management Plan*. Measures to be implemented to minimize effects may include, but are not limited to, angler education on the identification of bull trout if fishing derbies are proposed, the use of selected types of gear (e.g. use of circle hooks to reduce the extent of eye and gill injury), and conducting creel surveys (i.e. to validate the manner and extent of take).

To implement RPM 5:

9. FERC shall require Chelan PUD to conduct video monitoring in the Rocky Reach upstream fishway, except during the annual fishway maintenance period, to count bull trout passing through the fishway and provide information on the size, age, and condition of bull trout in the fishway. Chelan PUD shall prepare an annual report by April 15 each year of the license for these activities and submit it to the Service (USFWS Central Washington Field Office in Wenatchee, Washington).

10. FERC shall require Chelan PUD, in coordination with the Service, to collect and fund the analysis of genetic samples of bull trout over 70 mm handled as part of all ordinary Project operations at Rocky Reach Dam, as described in the Settlement Agreement. Beginning in year 10 of the New License, and continuing every 10 years thereafter for the term of the New License, Chelan PUD shall, if recommended by the Rocky Reach Fish Forum, collect tissue samples from up to 30 adult bull trout and up to 40 sub-adult bull trout over a period of one year and fund their genetic analysis. The information will provide valuable information on the conservation status and genetic

relationships between bull trout populations in the Columbia basin. This information will be used to determine the local populations impacted by Project operations, and when used in conjunction with other data such as movement data and redd counts, the resiliency of local populations impacted by the proposed action may be determined. Samples will be submitted to the Service (Central Washington Field Office in Wenatchee, Washington).

11. FERC shall require Chelan PUD, in coordination with the Service, to collect and fund the analysis of genetic samples of bull trout over 70 mm handled as part of all ordinary Rocky Reach Project operations to trap or sample fish at Tumwater and Dryden Dams. Beginning in year 10 of the New License, and continuing every 10 years thereafter for the term of the New License, Chelan PUD shall collect tissue samples from up to 30 adult bull trout and up to 40 sub-adult bull trout over a period of one year and fund their genetic analysis. This term and condition is consistent with other section 10(a)(1)(a) permits that involve handling of bull trout. The analysis will provide valuable information on the conservation status and genetic relationships between bull trout populations in the Columbia basin. This information will be used to determine the local populations impacted by Project operations, and when used in conjunction with other data such as movement data and redd counts, the resiliency of local populations impacted by the proposed action may be determined. Samples will be submitted to the Service (Central Washington Field Office in Wenatchee, Washington).

12. FERC shall require Chelan PUD to monitor the amount and extent of take associated with passage routes (i.e., through turbines, spillway, or bypass), consistent with the *Bull Trout Management Plan*, as technology allows, throughout the life of the New License. Of particular interest is the mortality rate for each passage route and proportion of bull trout that use each passage route, for all life stages of bull trout. If upstream or downstream passage problems for bull trout are identified (as agreed to by the Service and Chelan PUD), Chelan PUD will identify and implement, in consultation with the Rocky Reach Fish Forum, appropriate and reasonable measures to modify the upstream fishway, downstream bypass, or operations to reduce the identified impacts to bull trout passage.

13. FERC shall require Chelan PUD to document all occurrences of bull trout during the implementation of the AFA/HCP (i.e., monitoring studies) and associated predator control program, *Water Quality Management Plan*, *Pacific Lamprey Management Plan*, *White Sturgeon Management Plan*, and *Resident Fish Management Plan*. Chelan PUD shall prepare an annual report by April 15 for bull trout detected in the course of these activities and submit it to the Service (Central Washington Field Office in Wenatchee, Washington). This information may help provide a better estimate of the amount of incidental take through the life of the project.

14. FERC shall require Chelan PUD to participate in information exchanges with other entities conducting bull trout research, as described in the Settlement Agreement. Chelan

PUD shall work with the Rocky Reach Fish Forum to identify and implement appropriate and reasonable measures for monitoring juvenile/sub-adult bull trout at Rocky Reach Dam. Using this monitoring information, Project operations shall be modified to the extent practicable, consistent with the Settlement Agreement, to further minimize take, and this coordinated approach may result in substantial savings of cost and effort.

Reporting Requirements

In order to monitor the impacts of incidental take, Chelan PUD shall prepare an annual report describing the progress of implementing the proposed relicensing and its impact on the bull trout. The report, which shall be submitted to the Service (Central Washington Field Office) annually on or before April 15th, shall list and describe the work that was completed and the number of bull trout, if any, observed and/or incidentally taken (i.e., injured or killed) during the course of implementing the Project.

Upon locating a dead, injured, or sick endangered or threatened species specimen, initial notification must be immediately made to the nearest Service Law Enforcement Office (Redmond, Washington; telephone 425-883-8122) and reported to the Service's Central Washington Field Office (509-665-3508). Care should be taken in handling sick or injured specimens to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species and preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Service Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

The RPMs, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take described above is exceeded, such additional take represents new information requiring reinitiation of consultation (assuming the Commission retains discretion or control over the action) and review of the RPMs provided. Chelan PUD must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the RPMs.

APPENDIX E

Reasonable and Prudent Measures and Accompanying Terms and Conditions Pursuant to the Incidental Take Statement of the National Marine Fisheries Service's Biological Opinion filed July 9, 2007

9.7 Reasonable and Prudent Measures and Terms and Conditions

NMFS believes the following reasonable and prudent measures and terms and conditions are necessary and appropriate to minimize the impacts of incidental take associated with the proposed actions at the Project. In order to be exempt from the prohibitions of Section 9 of the ESA, FERC must incorporate into the License, and Chelan PUD must comply with, all of the reasonable and prudent measures and terms and conditions set forth below.

9.8 HCP Measures, Terms, and Conditions

1. In accordance with the provisions of Section 10 of the HCP (NMFS 2002b), the ITP authorizes Chelan PUD to incidentally take Permit Species that are listed under the ESA, to the extent that such incidental take of these species would otherwise be prohibited under Section 9 of the ESA, and its implementing regulations, or pursuant to a rule promulgated under Section 4(d) of the ESA, and to the extent that the take is incidental to Chelan PUD's lawful operation of the Rocky Reach Hydroelectric Project, subject to the condition that Chelan PUD must fully comply with all requirements of the HCP and the ITP. The ITP will become immediately effective upon issuance for UCR spring-run Chinook and UCR steelhead currently listed under the ESA. The ITP will become effective for currently unlisted Permit Species upon any future listing of such species under the ESA as described in section 10.1.3 (Permit Modification) of NMFS (2002a), and in accordance with NMFS' regulations governing ESA-listed species permits (50 CFR Parts 222.301-222.309).

2. Chelan PUD, in effecting the take authorized by the ITP, is considered to have accepted the terms and conditions of the ITP and to be prepared to comply with the provisions of the HCP, the ITP, the applicable regulations, and the ESA.

3. Chelan PUD must make available a copy of the ITP, including the accompanying HCP and related agreements, to personnel, contractors, or agents of Chelan PUD conducting authorized activities. All applicable provisions of the ITP must be presented and clearly explained to all authorized employees, contractors, or agents of Chelan PUD engaged in these activities.

4. Incidental take of ESA-listed Permit Species resulting from the actions of individual employees, contractors, or agents of Chelan PUD operating under the authority of the ITP

in accordance with activities described in the HCP (with the exception of tributary enhancement activities or artificial production activities which are covered under separate permits or Biological Opinions) shall be included, as appropriate, in the allowable take authorized above in Section 9.

5. Upon request by NMFS, Chelan PUD must allow NMFS, or any other person(s) duly designated by NMFS, to inspect Chelan PUD's records and facilities if such records and facilities pertain to (i) activities for which take of listed species is Authorized by the ITP, (ii) ESA-listed species covered by the ITP, or (iii) NMFS' responsibilities under the ESA.

6. Chelan PUD must provide NMFS with copies of the HCP-specified information and reports (e.g., survival studies, committee reports, etc.) within the time frame specified by the HCP or otherwise agreed upon by the Policy, Coordinating, Hatchery, or Tributary committees.

7. Chelan PUD shall report all observations of any adult Permit Species mortality (noting whenever possible whether adult steelhead are kelts or pre-spawning adults). Chelan PUD shall also report exceedances of threshold values for descaling, injury, and mortality of juvenile Permit Species, as described in NMFS (2003a) Section 3.3.5, to NMFS, within 2 days of the incident, and shall include a concise description of the causative event (if known) and a description of any resultant corrective actions taken at the facility.

8. Chelan PUD shall report to NMFS (by December 31 of each year) the number of juvenile and adult Permit Species salmon or steelhead caught or killed via implementation of the predator removal programs (noting whenever possible whether adult steelhead are kelts or pre-spawning adults).

9.9 Small Turbine Unit Installation Measures, Terms, and Conditions

1. FERC shall require Chelan PUD to coordinate with NMFS to ensure that the proposed construction activities occur outside the migration period of ESA-listed adult or juvenile Permit Species.

2. FERC shall require Chelan PUD to report all observations of construction-related ESA-listed Permit Species injuries or mortalities within 2 days of the incident, and Chelan PUD shall include a concise description of the causative event (if known) and a description of any resultant corrective actions taken at the construction site to eliminate the potential for additional take.

3. FERC shall require Chelan PUD to immediately cease all construction activities in the event that the allowable take of ESA-listed Permit Species juveniles or adults specified in Section 9 is exceeded.

4. FERC shall require Chelan PUD to implement all of the proposed environmental measures in NMFS (2003a; Section 3.4.2) and follow the proposed spill plan in the event that oils or solvents are spilled during construction of the turbine unit or its subsequent operation.

5. FERC shall require Chelan PUD to visually inspect, on an annual basis, the diffuser gratings and replace the screens or hardware as necessary to ensure that they will not fail during the adult migration period.

6. FERC shall require Chelan PUD to develop an operations and maintenance plan for the turbine unit and auxiliary water supply system (including screens), obtain NMFS' approval of this plan, and implement this plan. This plan may be modified in future years with the approval of NMFS.