EXH. MAC-12
DOCKETS UE-22___/UG-22___
2022 PSE GENERAL RATE CASE
WITNESS: MARK A. CARLSON

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**Docket UE-22____** **Docket UG-22____**

ELEVENTH EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF

MARK A. CARLSON

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 31, 2022

107 FERC ¶ 61,331
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, Joseph T. Kelliher,
and Suedeen G. Kelly.

Puget Sound Energy, Inc. Project No. 2493-006

ORDER ISSUING NEW LICENSE

(Issued June 29, 2004)

1. On November 25, 1991, Puget Sound Power & Light Company (Puget)[1] filed an application pursuant to sections 4(e) and 15 of the Federal Power Act (FPA)[2] for a new license authorizing the continued operation and maintenance of the 44.4-megawatt (MW)[3] Snoqualmie Falls Hydroelectric Project No. 2493 (Snoqualmie Project), located on the Snoqualmie River, in the City of Snoqualmie, King County, Washington.[4] This order issues a new license for the project.

I. Background

[1]On March 19, 1997, Puget Sound Power & Light Company advised the Commission that it had changed its name to Puget Sound Energy, Inc.

[2]16 U.S.C. '' 797(e) and 808.

[3]When Puget first filed its relicense application, its authorized installed capacity was 41.69 MW. This was increased to 44.4 MW in 2002. See 100 FERC ¶ 62,168 (2002).

[4]The Snoqualmie River is a navigable waterway of the United States. See Puget Sound Power & Light Company, 53 FPC 1657, 1661 (1975); and Public Utility District No. 1 of Snohomish County, 18 FPC 737, 740 (1957).

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2. The original license for the Snoqualmie Project was issued on May 13, 1975, effective as of March 1, 1956.[5] That license expired on December 31, 1993. Subsequently, an annual license was issued authorizing Puget to continue project operations pending disposition of its application.[6] In its relicense application, Puget initially proposed to increase the Snoqualmie Project's capacity to 73 MW. As explained below, Puget amended its application to request an increase in the authorized capacity to 54.4 MW.

3. Notice of the application for new license was published on October 20, 1992.[7] Timely interventions were filed by the U.S. Department of the Interior; the National Marine Fisheries Service (NOAA Fisheries);[8] King County, Washington; City of Snoqualmie, Washington; Washington State Department of Ecology (Washington Ecology); Washington Departments of Fish (Washington Fisheries) and Wildlife (Washington Wildlife) (Washington DFW);[9] and the Confederated Tribes and Bands of the Yakama Indian Nation (Yakama).[10]

4. Timely interventions in opposition were filed by the Snoqualmie Tribe (the Snoqualmie),[11] the Church Council of Greater Seattle, Washington Association of

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[5]See 53 FPC 1657 (1975); 54 FPC 157 (1975); and 54 FPC 599 (1975).

[6]See Section 15(a)(1) of the FPA, 16 U.S.C. § 808(a)(1).

[7]See also Errata Notice issued November 4, 1992.

[8]NOAA Fisheries is the preferred acronym of the National Marine Fisheries Service.

[9]The Washington Departments of Fish and Wildlife merged in 1994 to become the Washington DFW.

[10]The Yakama's original filings spelled the name as "Yakima." However, in 1994, the Yakama returned to the spelling as it was cited in the Treaty of 1885.

[11]At the time of their intervention, the Snoqualmie had not received tribal

(continued…)

Churches, and Snoqualmie Falls Preservation Project (jointly, Preservation Project); Northwest Preservation Trust and Network of Environmental Scientists and Technology (jointly, Preservation Trust); and Northwest Rivers Council and Washington Trout (jointly, Northwest Rivers).

5. Jim Simon and Richard Kirby filed a motion for late intervention, which was granted on February 10, 1995. American Whitewater Affiliation filed a motion for late intervention, which was granted on June 25, 2004. Tulalip Tribes of Washington (Tulalip) and the Mountaineers[12] filed motions for late intervention in opposition to the license application. Their motions were granted on July 13, 1993, and September 9, 1995, respectively. In addition, approximately 230 individuals and organizations filed comments on the application.[13]

6. The Draft Environmental Impact Statement (Draft EIS), issued in November 1994, evaluated the environmental effects of: (1) Puget=s original proposal to expand the

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recognition from Interior. However, a determination by Interior that the Snoqualmie Tribal Organization exists as an Indian tribe within the meaning of Federal law became effective as of October 6, 1999. See Final Determination to Acknowledge the Snoqualmie Indian Tribe, 62 Fed. Reg. 45,864 (August 29, 1997), affirmed by Interior's Board of Indian Appeals, July 1, 1999; acknowledged by the Secretary of the Interior, effective October 6, 1999. Therefore, the Snoqualmie Tribe's comments, addressed in both the Draft and Final EIS's and in this order, are considered as recommendations filed pursuant to Section 10(a)(2)(B) and 10(a)(3) of the FPA, 16 U.S.C.§ 803(a)(2)(B) and (a)(3). See 18 C.F.R. § 4.30(b)(10) (2003).

[12]Puget opposed the Mountaineers' motion.

[13]In addition, the Snoqualmie Tribe, and Jim Simon and Richard Kirby recently filed additional comments restating their prior arguments, American Whitewater filed a comment in the proceeding, and Puget filed an answer in opposition. All of these parties' arguments are addressed below. The Snoqualmie Tribe also filed an answer to Puget's answer; however, answers to answers are not permitted. See 18 C.F.R. § 385.213(a)(2).

project (Major Upgrade);[14] (2) an alternative developed by Commission staff (Minor Upgrade);[15] (3) project removal; and (4) continued operation of the project as it currently exists.

7. Comments on the Draft EIS were filed by Puget; Interior; the U.S. Environmental Protection Agency (EPA); the U.S. Army Corps of Engineers, Seattle District (Corps); NOAA Fisheries; Washington Wildlife; Washington Ecology; Washington Department of Community, Trade and Economic Development; the King County Surface Water Management Division; the King County Cultural Resources Division; the City of Snoqualmie; Rivers Council of Washington; Preservation Project; American Civil Liberties Union of Washington (ACLU); the Indian Law Clinic of the University of Colorado School of Law (Indian Law Clinic); the Coquille Indian Tribe; Friends of the Earth; the Cascade Chapter of the Sierra Club; Paddle Trails Canoe Club; Tolt Historical Society; Tacoma Audubon Society; Community Coalition for Environmental Justice; The Dharmic Engineers; and over 300 individuals. In addition, public meetings were held in the City of Snoqualmie on December 15, 1994, and March 1, 1995, and in Kirkland, Washington on March 2, 1995, to permit oral comments on the Draft EIS.

8. In its comments on the Draft EIS, filed February 21, 1995, Puget proposed to drop its Major Upgrade proposal and substitute a proposal styled the "Refurbished Project Proposal," which was similar but not identical to the Minor Upgrade developed by Commission staff, and on June 29, 1995, Puget submitted additional information in support of the Refurbished Project proposal.

9. A notice of amendment to the application was issued on September 5, 1995, affording an additional period for comment on Puget's Refurbished Project Proposal.

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[14]The Major Upgrade comprises extensive structural modifications to the project to increase the installed capacity from the existing 44.4 MW to 73 MW, and the hydraulic capacity from the existing 2,500 cubic feet per second (cfs) to 3,620 cfs. The increase in hydraulic capacity would require Puget to obtain additional water rights.

[15]In the Draft EIS, staff developed the Minor Upgrade alternative to provide a project operation plan that would maintain power generation and provide resource enhancements, but would not increase the hydraulic capacity of the project (see Draft EIS at p. 2-13). Structural modifications under this alternative include rebuilding the diversion dam, replacing generating units in Plant 1, and upgrading the existing Plant 2 units. The installed capacity would increase from the existing 44.4 MW to 49.2 MW.

Puget,[16] Washington Wildlife, the City of Snoqualmie, Washington Ecology, the Preservation Project,[17] Interior, and numerous members of the public filed comments in response. The comments on the Draft EIS and on Puget's amended application were considered in preparing the Final Environmental Statement (Final EIS) which was issued on October 2, 1996. On December 9, 2003, Puget filed minor revisions to bring its proposal into accord with the requirements of a section 401 Water Quality Certification and a Statement of Coastal Zone Consistency issued by Washington Ecology, as well as a Shoreline Substantial Development Permit issued by the City of Snoqualmie. None of the revisions constitute a material amendment within the meaning of 18 C.F.R. §§

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[16]Puget argued that its proposal was not intended as an amendment of the license application. However, the change from the 73-MW capacity proposed in the relicense application to 49 MW constituted a material amendment of the application. See 18 C.F.R. §§ 4.35(f)(1), 16(b)(3), and 16(d).

[17]Maintaining that a supplemental Draft EIS was warranted, the Preservation Project argued that Puget's Refurbished Project Proposal is substantially different from the proposals analyzed in the Draft EIS. The Preservation Project and the Snoqualmie Tribe also argue that a change in Snoqualmie tribal status constitutes a significant new circumstance as relates to the proposed action. However, Puget's Refurbished Project proposal is substantially similar to the Minor Upgrade proposal whose effects were analyzed in the Draft EIS. See Notice of Amendment to Application, issued September 5, 1995, and Draft EIS, Sections 2.4, 4.2, 5.1.2, 5.2.2, 5.4.2, 6.1-6.3, and 6.5. For this reason, Commission staff waived the consultation requirements of 18 C.F.R . § 16.8(a)(3)(i) (see September 11, 1995 letter from Commission staff), and the essential elements of the Refurbished Project Proposal were addressed by the Draft EIS. Moreover, because the Refurbished Project Proposal was noticed as an amendment to Puget's application, there was an additional opportunity for interventions and for the submittal of revised terms, conditions, prescriptions and comments, which were taken into account in developing the Final EIS. Finally, any change in Snoqualmie tribal status does not alter the environmental concerns regarding the proposed action or its impacts.

The Preservation Project and the Preservation Trust also requested a hearing before an administrative law judge, and the Tulalip Tribe asked that an oral hearing be held in the Seattle area. It has not been demonstrated that there are any issues of material fact which cannot be adequately addressed based upon the record before us. Therefore, no hearing is needed. See Sierra Association for Environment v. FERC, 744 F.2d 661 (9th Cir. 1984).

4.35(f)(1), 16(b)(3), and 16(d). The motions to intervene, and all comments and filings have been fully considered in determining whether, and under what conditions, to issue this license.

II. Project Description

10. The existing Snoqualmie Falls Project consists of a diversion dam located 150 feet upstream from Snoqualmie Falls, and two powerhouses (Plants 1 and 2) with a total installed capacity of 44.4 MW.

11. The diversion dam is an 18.5-foot-high, 220-foot-long concrete structure. It has a crest elevation of 396.5 feet mean sea level (msl) and impounds 551 acre-feet. The original license authorized the use of flashboards, which raise the crest elevation to 401 feet msl and increase the impoundment's storage to 819 acre-feet. However, flashboards have not been used since 1979.

12. Plant 1 consists of: (1) a concrete intake structure located about 300 feet upstream from Snoqualmie Falls on the south bank; (2) two steel penstocks, 7.5 feet in diameter and about 160 feet long; (3) a 200-foot-long, 40-foot-wide, 60-foot-high underground powerhouse containing five generating units with a total installed capacity of 11.9 MW; (4) a 450-foot-long tailrace tunnel which returns the flow to the plunge pool for Snoqualmie Falls; and (5) a 0.06-mile-long, 115-kilovolt (kV) transmission line transferring the power generated by Plant 1 to the Snoqualmie Falls Switching Station.

13. Plant 2 consists of: (1) a concrete intake structure located about 200 feet upstream from Snoqualmie Falls on the north bank; (2) a concrete-lined tunnel, 12 feet in diameter and about 1,215 feet long which conveys water from the intake to a small project forebay; (3) a steel penstock, seven feet in diameter and about 600 feet long, which conveys water to generating unit one; (4) two steel penstocks (each seven feet in diameter and 75 feet long) combining into a steel penstock 10 feet in diameter and about 515 feet long, which conveys water from the forebay to generating unit two; and (5) a 122-foot-long by 46-foot-wide powerhouse containing the two generating units with a total installed capacity of 32.5 MW; (6) a very short concrete and rock tailrace that returns the flow from the powerhouse directly to the Snoqualmie River about 1,550 feet downstream from the Falls; and (7) a 0.5-mile-long, 115-kilovolt transmission line transferring the power generated by Plant 2 to the Snoqualmie Falls Switching Station.

III. Puget's Proposed Project Modifications

14. Puget proposes to upgrade the generators in both powerhouses to a total installed capacity of 54.4 MW, and to replace the project dam and flashboards with an inflatable rubber weir diversion dam. The new dam would be 270 feet long (including a 75-foot-wide side channel spillway) and consist of three sections mounted on the foundation of the existing dam. Under normal operations, the inflated rubber weir dam would maintain the current 396.5-foot msl crest elevation, but could be quickly lowered to deal with flood events.

15. Puget would modify Plant 1 by: (1) constructing a new concrete intake structure; (2) reconfiguring penstocks to match the new intake structure; (3) retiring and removing generating units one, two, three, and five; (4) retiring generating unit four in place; and (5) installing in the existing underground powerhouse two generating units with a total installed capacity of 16.0 MW.

16. Puget would modify Plant 2 by: (1) constructing a new concrete intake structure; (2) replacing the penstock for generating unit one; (3) installing bypass valves on penstocks one and two; (4) replacing generating unit one and refurbishing generating unit two for a total installed capacity of 38.4 MW; and (5) reworking the tailrace.

17. In addition, of an estimated 259 acres of land and water within the existing Snoqualmie Falls project boundary, Puget proposes to remove about 118.8 acres at the upper end of the project reservoir (an area extending from slightly below river mile 43 to river mile 45, which also includes Three Forks Island). This is because, as we discuss below, the project's water surface elevation will be no higher than 396.5 feet msl, which means that the project's backwater will not extend as far as it did when the project was originally licensed. Puget proposes to add 1.5 acres of riparian habitat along Kimball Creek, a tributary that flows into the reservoir at about river mile 41, to protect and enhance fish and wildlife resources associated with the project. It also proposes to add about 24 acres near Plant 2, to be used for project-related recreation facilities. The result would be a net reduction of 94 acres, with the resulting new project boundary encompassing a total of 165.44 acres.

IV. Water Quality Certification

18. Under section 401(a)(1) of the Clean Water Act (CWA),[18] the Commission may not issue a license for a hydroelectric project unless the State certifying agency has either issued a 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 on any federal license or permit that is issued.[19]

19. Puget's most recent certification request was submitted on April 7, 2003.[20] On September 25, 2003, Washington Ecology issued water quality certification for the Snoqualmie Falls Project, subject to certain conditions. The Snoqualmie appealed the certification to Washington's Pollution Control Hearings Board, which, on April 7, 2004, amended the certification's interim definition of critical flow.[21] The amended certification is set forth in Appendix A to this license order, and Ordering Paragraph E incorporates Appendix A as a condition of this license.

20. In addition to eight general conditions and reservations of authority to Washington Ecology, the certification sets out specific requirements, including: (1) schedules and rates of flows passing over Snoqualmie Falls, between the Snoqualmie Falls plunge pool and Powerhouse No. 2, and in the bypass reach and downstream of the project; (2) interim ramping rates, and studies to establish permanent ramping rates and the critical flow at which the permanent ramping rates would be triggered; (3) flow continuation criteria; (4) installation of water quality monitoring devices, and water quality sampling; (5) a water quality compliance monitoring plan; (6) an oil spill prevention and control plan for all oil filled project equipment; (7) a water quality protection plan for all in- and near-water project construction work; and (8) restrictions on the operation of the rubber weir.

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[18] 33 U.S.C. § 1341(a)(1).

[19] 33 U.S.C. § 1341(d).

[20] The licensee withdrew and refiled its certification application each year from 1992 through 2003.

[21] The certification changed the interim definition of critical flow from 1,700 cfs to 2,500 cfs.

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V. Coastal Zone Mamagement Act

21. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[22] the Commission cannot issue a license for a project within or affecting a State's coastal zone unless the State CZMA agency concurs with the licensee's certification of consistency with the State's Coastal Zone Management Program (Coastal Program), or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification. Washington Ecology is the CZMA agency for the State of Washington.

22. On November 1, 1995, the Commission directed Puget to provide Washington Ecology with a certification of consistency of the project with Washington's Coastal Program. On January 26, 1996, Puget filed the certification with Washington Ecology. That agency responded that the certification would not be complete until Puget had obtained a Shoreline Substantial Development Permit (Shoreline Permit) or exemption, as required by the Coastal Program.

23. On October 28, 2003, the City of Snoqualmie issued a Shoreline Permit for the project, and on November 13, 2003, Washington Ecology issued a statement of Coastal Zone Consistency with the Coastal Program that incorporated conditions specified in the city's Shoreline Permit and the water quality certification.[23] The conditions of this license do not conflict with the Statement of Consistency.

VI. Section 18 Fishway Prescriptions

24. Section 18 of the FPA[24] states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Interior. Neither has prescribed fishways at the

[22] 16 U.S.C. § 1456(3)(A).

[23] The statement of Coastal Zone Consistency also referenced conditions of Washington Ecology's Determination of Significance and Adoption of Existing Environmental Document issued on August 8, 2003, pursuant to the State Environmental Policy Act (SEPA). However, the Determination of Significance set out only findings.

[24] 16 U.S.C. § 811.

Snoqualmie Falls Project, or requested that the Commission reserve authority to prescribe fishways in the future.[25]

VII. Threatened and Endangered Species

25. Section 7(a) of the Endangered Species Act of 1973 (ESA)[26] 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 designated critical habitat. In a Biological Assessment sent to the U.S. Fish and Wildlife Service (FWS) and NOAA Fisheries on November 2, 2001, Commission staff concluded that licensing the project with staff-recommended measures "is not be likely to adversely affect" the federally listed threatened bull trout, bald eagle, northern spotted owl, or marbled murrelet, or the federally listed threatened Puget Sound Chinook salmon and its critical habitat. FWS and NOAA Fisheries concurred with Commission staff by letters filed January 15, 2002, and February 12, 2003, respectively. This license includes conditions recommended by staff in the Biological Assessment. No further consultation pursuant to the ESA is needed.

VIII. Recommendations of Federal and State Fish and Wildlife Agencies

A. Recommendations Pursuant to Section 10(j) of the FPA

26. Section 10(j) of the FPA[27] requires the Commission, when issuing a license, to include license conditions based upon recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,[28] to "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project. If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, section 10(j)(2)

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[25]The 268-foot-high Snoqualmie Falls is a complete barrier to upstream fish movements.

[26]16 U.S.C. § 1536(a).

[27]16 U.S.C. § 803(j)(1).

[28]16 U.S.C. § 661 et seq.

requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies.

27. Interior, NOAA Fisheries, and Washington DFW filed section 10(j) recommendations relating to Puget's original application. When the Commission issued its September 5, 1995 notice of Puget=s amended application, it also provided a period in which the fish and wildlife agencies could reconsider and revise their initial recommendations in light of, and make new recommendations relating to, the amended application. All of the recommendations were analyzed in the Final EIS, and a preliminary determination was made that some of the section 10(j) recommendations were inconsistent with the purposes and requirements of the FPA. On March 12, 1997, Commission staff met with staff of the resource agencies, and the inconsistencies were resolved.

28. The Snoqualmie Project license includes conditions consistent with the agencies' recommendations under section 10(j). These conditions require the licensee to develop plans to: (1) control erosion and sediment; (2) prevent and clean up chemical and petroleum spills; (3) dispose of construction waste; (4) monitor a flow-continuation system in the event of shutdowns at the Plant 2 powerhouse; (5) monitor operational compliance, including penstock flows and tailrace stages; (6) manage terrestrial resources and protect bald eagle habitat; and (7) enhance the game fishery in the Snoqualmie River.

29. Puget must also, consistent with the section 10(j) recommendations: (1) operate in a run-of-river mode; (2) release specified continuous minimum instream flows between the Plant 1 and Plant 2 tailrace outfalls;[29] (3) maintain specified ramping rates during low flow periods; (4) establish permanent critical flow and ramping rate criteria; (5) monitor and correct any violation of State standards for dissolved gases at the powerhouse outfalls; (6) modify the Plant 1 tailrace tunnel and provide a minimum flow of 30 cfs through the tunnel to prevent fish stranding and/or injury and monitor the effectiveness of this requirement; (7) modify the Plant 2 tailrace to prevent fish entrapment and monitor

[29]The tailrace outfall is the point at which the flow in the tailrace empties into the Snoqualmie River.

the effectiveness of this requirement; (8) design and construct an automatic system for penstock failures; (9) limit soil disturbing activities to between March 1 and September 30; and (10) route Plant 1 transmission lines through a conduit.[30]

B. Recommendations Pursuant to Section 10(a) of the FPA

30. Several agency recommendations are not specific measures for the protection of, mitigation of adverse impacts to, or enhancement of fish and wildlife resources, and therefore do not qualify as recommendations pursuant to section 10(j). We have instead considered them pursuant to the broad public interest standard of FPA section 10(a)(1). We have adopted two recommendations: agency access to the project site (Article 415), and annual reports to be filed by January 31 of each year (Article 414).

31. We have not adopted Interior's recommendations that Puget develop a trust fund (or other funding mechanism) to cover the cost of retiring the project if and when retirement becomes necessary.[31] Nor have we included provisions requiring a State-approved environmental monitor with power to stop construction activities if the monitor believes that the licensee is not complying with the provisions of its erosion and sediment control plan. Were we to adopt such terms, we would be voluntarily relinquishing the Commission's authority over structures and operations by permitting the State to control the timing of activities under the federal license.[32]

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[30] See Articles 401, 403-413, 416, and 426, and Appendix A, Conditions II.A, II.B, II.C, III.A..1, and IV.A.

[31] There is no evidence in the record to suggest that Puget would be unable to fund project retirement and/or removal if it became necessary during the license term or at the end of the license period. Nor is there evidence that the project will be retired at any point in the foreseeable future. See generally Policy Statement on Project Decommissioning at Relicensing, 60 Fed. Reg. 339, (Jan. 4, 1995), III FERC Stats. & Regs., Regs. Preamble 31,011 (Dec. 14, 1994).

[32] See Northern Wasco County People's Utility District, 57 FERC ¶ 61,214 at 61,706 (1991), 60 FERC ¶ 61,087 at 61,281 (1992); Eugene Water and Electric Board, 49 FERC ¶ 61,211 at 61,743 (1989); and Commonwealth of Pennsylvania v. FERC, 868 F.2d 592 (3rd Cir. 1989). For the same reason, we have not adopted the portions of other recommendations which would give the Federal and State fish and wildlife agencies approval authority over the various requirements of the license set forth in Articles 401, 403-405, 408-414, and 416.

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IX. Flows at Snoqualmie Falls

32. The primary issue raised in this proceeding is whether to issue a new license for the continued operation and maintenance of the Snoqualmie Falls Hydroelectric Project, conditioned on significantly greater protection and enhancement of environmental resources and values, or to deny the relicense application and require removal of the project dam and other works, based on a determination that the power benefits of the project are outweighed by the cultural and spiritual benefits to the Snoqualmie Tribe of the restoration of pre-project flows over Snoqualmie Falls.

33. The Snoqualmie and the Preservation Project assert that any project diversion of water compromises the sacred quality of the Falls, that only totally natural flows will truly
support their traditional religious practices,[33] and that project "decommissioning"[34] is mandated by the FPA.[35] The Snoqualmie and the Preservation Project maintain that Puget's proposal for a yearly allotment of flows for the Snoqualmie's purposes is unacceptable, because at least one of the Snoqualmie's religious practices, the vision quest, is by nature an individual and spontaneous practice, not one which can be "scheduled." These same entities also assert that removal of the Snoqualmie Falls Project is mandated by the First Amendment to the U.S. Constitution, the American Indian

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[33] According to the Snoqualmie, the Falls' power for Snoqualmie religious observance derives from the quantity and quality of the Falls' mist and spray, which in turn is determined by the quantity of flow over the Falls. For more information concerning the Snoqualmie cultural and religious tradition and ritual, see the submission of the Snoqualmie Falls Preservation Project, filed July 10, 1995, and appendices thereto.

[34] The Snoqualmie have not specifically requested dam removal. The term "decommissioning" can refer to project retirement with or without dam removal.

[35] In addition, Interior, ACLU, and the Indian Law Clinic filed comments arguing that the Snoqualmies' religious rights are protected by the First Amendment of the U.S. Constitution, and are not a matter of treaty (Interior); that their free exercise of religion mandates protection of the Falls' integrity (ACLU); and that if Snoqualmie concerns are given proper priority under the FPA, the Constitution, and the American Indian Religious Freedom Act of 1978, the new license will not be issued (Indian Law Clinic). The Snoqualmie and the Preservation Project also attached these comments as exhibits supporting their own comments, filed October 5, 1995.

Religious Freedom Act of 1978 (AIRFA), and the Religious Freedom Restoration Act of 1993 (Religious Freedom Act).

34. Section 10(a) of the FPA requires the Commission to balance a range of public interests, including the interests and recommendations of Indian tribes.[36] We find nothing in the FPA, the First Amendment, AIRFA, or the Religious Freedom Act that would require retirement of the Snoqualmie Project.

35. We recognize that, since its construction and initial operation in 1898, the Snoqualmie Falls Project has altered the nature of the Falls for purposes of the Snoqualmies' traditional religious practices. However, the FPA does not require that all past environmental and other effects of a hydroelectric project be mitigated at relicensing. Rather, at the end of a license term the Commission is to consider anew the best use of the waterway in question, giving equal consideration to developmental and environmental public purposes.

36. The First Amendment to the United States Constitution, AIRFA, and Religious Freedom Act protect the Snoqualmie's right to free exercise of their religion at Snoqualmie Falls. However, our issuance of the new license does not run afoul of these constitutional and statutory protections. Incidental effects of Government which may interfere with the practice of a religion, but do not coerce its practitioners into acting contrary to their religious beliefs, do not, within the meaning of the First Amendment,[37] constitute a prohibition on the free exercise of religion.[38] Furthermore, an agency is in

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[36] 16 U.S.C. § 803(a). Where hydroelectric projects are located on Federal reservations, the FPA also requires the Commission to adopt mandatory conditions prescribed by the Secretaries of the Interior and of Agriculture for the protection and development of such reservations, including lands held in trust for Indian tribes. See 16 U.S.C. § 797(e). The Snoqualmie Project is not located on a Federal reservation or any other kind of U.S. lands.

[37] The First Amendment states, in pertinent part: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof."

[38] See Lyng v. Northwest Indian Cemetery Prot. Assn., 485 U.S. 439 at 440, 447-53 (1988). See also Wilson v. Block, 708 F.2d 735 (D.C. Cir. 1983); and Crow v. Gullet, 541 F. Supp. 785 at 791 (1982), aff'd, 706 F.2d 856 (8th Cir. 1983).

compliance with AIRFA[39] if, in the decision-making process, it obtains and considers the views of Indian leaders, and if, in project implementation, it avoids unnecessary interference with Indian religious practices.[40] Finally, the Religious Freedom Act appears to apply to situations in which the Government has either prohibited an individual's religious practice or required an individual to take some action contrary to his or her religion[41] – not to situations in which the Government took some action which incidentally affected the quality of an individual's religious experience.[42] The issuance of a new license will not require the Snoqualmie to violate their religious beliefs. Nor does it prohibit or prevent the Snoqualmies' access to Snoqualmie Falls, their possession and use of religious objects, or the performance of religious ceremonies. The Snoqualmie have participated in the proceeding, and their views were obtained and addressed in the Draft and Final EISs.

37. If relicensed as proposed, the Snoqualmie Falls Project will have an installed generating capacity of 54.4 MW, which would serve about 1.6 percent of Puget's average annual generation. The electricity generated at the project serves the public interest by

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[39]42 U.S.C. § 1996. AIRFA states:

> [I]t shall be the policy of the United States to protect and preserve for the American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian . . . , including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

[40] See Wilson v. Block, 708 F.2d at 746, 747.

[41]The Religious Freedom Act states that Federal activities which inhibit the free exercise of any religion must satisfy a compelling Government interest and must be the least restrictive means to accomplish the purpose. See 42 U.S.C. § 2000bb (1994).

[42]See Sherbert v. Verner, 374 U.S. 398 (1963), and Wisconsin v. Yoder, 406 U.S. 205 (1972), whose compelling interest test the Religious Freedom Act was intended to restore. See also U.S. v. Gonzales, 957 F. Supp. 1225 (1997); Estep v. Dent, 914 F. Supp. 1462 (1996), aff'd,82 F.3d 417 (6th Cir. 1996); May v. Baldwin, 895 F. Supp. 1398 (1995), aff'd, 109 F.3d 557 (9th Cir.), cert. denied, 522 U.S. 921 (1997).

reducing the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable energy resources and reducing atmospheric pollution.

38. There are also development values unique to Snoqualmie Falls. The project is one of the oldest and most historically significant hydroelectric generation facilities in the Northwest. The underground Plant 1 powerhouse, completed in 1899, was the first ever successfully constructed underground powerhouse and has been designated a Historic Civil Engineering Landmark by the American Society of Civil Engineers.[43] The public is able to tour the Plant 2 powerhouse, and there are interpretive signs and displays about the Falls and the historic nature of the project's facilities.

39. If the project is retired, the resulting restoration of pre-project flows will provide the Snoqualmie with full spiritual use of the Falls, and the power that the Snoqualmie Project provides will be lost. On the other hand, if the project is relicensed with the recommendations discussed in this order, the Snoqualmie will still have spiritual use of the Falls, albeit with somewhat less than the full flows they desire. On balance, we conclude that the project should be relicensed.

40. Throughout this proceeding, the Commission has considered the effects of the Snoqualmie Project on the resources of importance to the Snoqualmie and, as this order reflects, we have endeavored to accommodate their concerns when framing the requirements of the new project license. To protect the sacred nature of the Falls, and the privacy of Snoqualmie rituals, we will not authorize development of the south side of the river below the Falls, extension of the Preston-Snoqualmie Trail, or the building of a new pedestrian bridge. In addition, any project modifications are to be constructed so as to be invisible and inaudible at the sites where the Snoqualmie conduct their rituals on the south side of the river below the Falls. And while we are not restoring the pre-project flows over the Falls, the new license requires flows that will more closely mirror natural flows than did the prior license's flow regime.

X. Recreation

41. Snoqualmie Falls is the project's major recreational attraction. The 268-foot-high Falls is the highest plunge falls in the State of Washington and one of the highest falls in the Nation. The public visits the Falls year-round,[44] on weekdays as well as weekends.

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[43] See FEIS at p. 3-70 and http://www.asce.org/files/pdf/history/hcelslist_alpha.pdf.

[44] In 1990, more than 1.5 million people visited the Falls. January and February

(continued…)

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42. Recreational use at the project is limited to its north side, specifically to a high bluff overlooking Snoqualmie Falls, and to the area below the Falls in the vicinity of Plant No. 2. Under the original license, Puget constructed and maintained Snoqualmie Falls Park. The park serves visitors to the Falls, and the predominant activities for these visitors are viewing the Falls, hiking, and picnicking.[45]

43. Existing recreation facilities consist of the Falls' viewing decks, picnic areas, trails, restrooms, and an outdoor education center. A gravel parking area near Plant 2 provides public access to the Snoqualmie River downstream from the Falls. On relicensing, Puget proposes to relocate and improve the Falls trail and trailhead, upgrade the trailhead for the lower Falls trail, replace outdoor park fences, replace the outdoor park furniture as needed, provide public restroom(s), replace the outdoor education center, provide carry-in boat access near Plant 2, improve all walkways, and add directional and interpretive signs throughout the area.[46] These proposals have been adopted in the new license.[47]

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were the only months when the Falls attracted less than 100,000 visitors. See Final EIS at pp. 3-42 and 3-43.

[45]Salish Lodge, a large hotel located on a 1.6-acre parcel of land at the top of the cliff directly adjacent to the Falls but outside the project boundary, also serves waterfall visitors.

[46]American Whitewater notes that kayakers and pedestrians have used a 20-foot gap in two sections of boardwalk as an informal access point to reach the bypassed reach just upstream of Powerhouse 2, but that in 2002 the Commission's Regional Office directed that the gap be spanned with a section of boardwalk, high railings, and chain-link fencing, preventing further such use. American Whitewater argues that recreational concerns mandate either that an environmental review precede this change or that the informal access be restored. The informal access at the location upstream of Powerhouse 2 was eliminated as a safety measure. Moreover, such access would be disruptive to Snoqualmie religious practices. However, the new license requires construction of an access point immediately downstream of Powerhouse 2, which will improve boating opportunities in the area without endangering safety or intruding upon Snoqualmie religious practices.

[47]See license Article 417.

Minimum Flows Over the Falls

44. Under its current license, Puget diverts about 65 percent of the annual flow of the river for power production. Pursuant to license Article 13, Puget is required to discharge a minimum flow of 100 cfs over Snoqualmie Falls during daylight hours on behalf of the Falls' scenic and aesthetic values.[48] In addition, apart from the requirements of its license, Puget has, since 1991, maintained a minimum nighttime flow of 25 cfs over the Falls.

45. On relicense, Puget originally proposed a continuation of the existing minimum daytime 100-cfs flow requirement, to be supplemented by a 450-cfs flow between 10:00 a.m. and 5:00 p.m. on summer weekends and on specified holidays,[49] as well as a flow of 350 cfs for six 12-hour days per year, to be implemented at the discretion of the Tulalip Tribe and the Snoqualmie.

46. Washington Ecology's water quality certification requires that the project, if relicensed, be operated to ensure that the following flows (as measured at the diversion weir) or natural flow, whichever is less, pass over Snoqualmie Falls: May 16 through May 31 -- 200 cfs; June -- 450 cfs; July and August – 200 cfs on weekends and July 4th,[50] 100 cfs daytime weekdays and 25 cfs nighttime weekdays; and September through May 15 – 100 cfs daytime and 25 cfs nighttime. These flows are intended to enhance the scenic views of the falls during the periods of highest visitation while protecting aquatic resources from substantial twice-daily (i.e., morning and evening) changes in flows and balancing project generation needs.[51]

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[48] See 53 FPC 1657, 1667 (1975).

[49] See Draft EIS, Table 2-1 at p. 2-8.

[50] The certification also requires Puget to make the higher weekend releases on holidays during July and August.

[51] See page 6 of the Snoqualmie Falls Hydroelectric Project, Shoreline Permit No. SH97-03, filed by Puget on December 9, 2003.

47. As discussed in the Final EIS, Commission staff analyzed the effects of various minimum flow releases on the visual quality of the Falls under the following general principles.[52] Public perception of scenic beauty increases as flows increase, but only up to a point, beyond which the public perception of scenic beauty decreases, and distinctive features such as the rock face behind the falls and water plumes may be hidden under the flows, decreasing the sense of contrast.[53] Seasonal variation in flows is also important to public perceptions, and since an unaltered waterfall would have many varying characteristics over a range of naturally occurring flows, the provision of a variety of flows delivers more aesthetic benefit than would be provided by a year-round, constant minimum flow.[54] Thus, it appears that a variety of flows that generally track the seasonal variation in the flow regime of Snoqualmie Falls will best meet the project's aesthetic and recreational purposes while also providing generation benefits.

48. For these reasons, in assessing flow options, the Final EIS places great emphasis on whether the particular flow option provides seasonal variation, provides higher flows during good weather and periods of highest visitation,[55] takes advantage of higher flows at times when higher flows are expected to be available, and affects the ability of the project to follow seasonal load variations.[56] The water quality certification flows meet these criteria,[57] except for September 1. On that date, the certification reduces daytime

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[52] See Final EIS at pp. 3-55 and 3-56.

[53] Id. at p. 3-55.

[54] Expectations about aesthetic flows tend to vary with the seasons. For example, people tend to expect higher flows in late spring and lower flows in the fall. See Final EIS at p. 3-55.

[55] Snoqualmie Falls visitation is seasonally variable, steadily progressing from a low of about 85,000 visitors per month in January and February to a high of about 180,000 visitors per month in July and August, then dropping to about 120,000 visitors per month in the fall. Visitation is heaviest on summer weekends and certain holidays. See Final EIS at p. 3-43.

[56] See, e.g., Final EIS at p. 6-45.

[57] The Section 401 certification was issued after the Final EIS, but the effect on

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flows from 200 to 100 cfs. In light of the high number of visitors that would be expected to visit the Falls on Labor Day weekend, and consistent with the State's determination under the CZMA (see above), we will require Puget to provide a minimum flow release of 200 cfs day and night for that weekend.[58]

XI. Flooding

49. The City of Snoqualmie is subject to frequent flooding,[59] largely because it was built within the Snoqualmie River=s 100-year flood plain.[60] But the flooding is also due in part to backwater created by the Snoqualmie Project.[61]

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aesthetics and recreation of the various flow components of the certification was analyzed in the Final EIS.

[58] See Part 5, Condition 3 of the project's Shoreline Permit, Attachment A to Puget's filing of December 9, 2003. Pursuant to section 10(a)(1) of the FPA, the Commission may impose water quality conditions that are more stringent than those contained in a state's water quality certification. See, e.g., Carex Hydro, 52 FERC ¶ 61,216 at 61,769 (1990).

[59] Annual flood damage in and around the City averages almost $1 million. During the November 1990 flood of record, about two-thirds of the City's residential structures had water above the first floor, and City Hall was inundated to a depth of about 18 inches. Peak flows through the city were estimated to be 74,000 cfs.

[60] See Final EIS, Figure 3-9. See also, "Snoqualmie River Flood Control Project, pre-feasibility investigation final report, prepared for the City of Snoqualmie, King County Surface Water Management, the Weyerhaeuser Company, Puget Sound Energy, Inc., and Puget Western, Inc.," Northwest Hydraulic Consultants, Inc., March 1996. The report determined that a natural narrowing of the river channel within the project area between Snoqualmie Falls and the SR-202 bridge (located about 1,500 feet upstream of the Falls) obstructs the passage of flood flows and causes them to pond upstream. It concluded that widening the Snoqualmie River channel in this area would provide a cost-effective method to reduce flooding in the City of Snoqualmie. See discussion in Final EIS at section 2.3.5.

[61] The Snoqualmie Project's backwater currently extends about three miles upstream.

50. Puget has proposed to reduce the project's contribution to the flood hazard by: (1) developing a flood control management plan;[62] (2) developing a channel-conveyance-capacity monitoring plan;[63] (3) constructing a new side-channel spillway; and (4) participating with the Corps and local entities in a Corps project to implement flood control measures (section 205 project).[64] The flood control measures include excavating in areas on the bank of the river to widen the channel of the Snoqualmie River between the Falls and the SR-202 bridge.[65]

51. Puget has agreed to contribute to the section 205 project by conveying property interests sufficient to enable the Corps to complete the excavations, contributing labor and materials necessary to relocate its utility facilities to accommodate the section 205 project, and implementing a scheduled power outage to permit the construction. The

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[62]Washington Ecology expressed concern that failure to deflate the inflatable weirs in response to a flood event could result in higher flood levels than has been estimated for such events. Article 307 of the license requires Puget to prepare a flood control management plan in consultation with the Corps, Washington Ecology, King County Surface Water Management, and the City of Snoqualmie. The plan will include measures to ensure that the ability to deflate the weir is not affected by power outages.

[63] Although Puget has proposed only to monitor for project-caused aggradation in the project reservoir, the license also requires it to remedy any project-caused aggradation discovered through the monitoring. See Article 402.

[64]The Corps, King County, the City of Snoqualmie, Puget, and local business interests are participating in this project, which is being undertaken pursuant to section 205 of the 1948 Flood Control Act, 33 U.S.C. §§ 701a and 701c (section 205 project).

Under section 205 of that Act, the Corps will contribute a percentage of the cost of excavation, on condition that a local sponsor contributes the balance. Here, the City of Snoqualmie and King County are the local sponsors**.** Bids for the project were opened on February 5, 2004, and the project is scheduled to be completed by the end of September 2004.

[65]See Figure 2-4 of the Final EIS for the location of the river cross-section.

total value of its contribution will be $785,100 ($487,100 for the labor and materials; $200,100
for the property interests; and $97,500 for the power lost). These measures will reduce the flood stage[66] between the SR-202 bridge and the Snoqualmie Falls dam, and the license requires them.[67]

XII. Cultural Resources

52. On January 17, 1997, pursuant to section 106 of the National Historic Preservation Act,[68] the Washington State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the Commission's Director of the Office of Energy Projects signed a Programmatic Agreement for managing Historic Properties that may be affected by relicensing of the Snoqualmie Project. The Programmatic Agreement also addresses Traditional Cultural Properties of the Snoqualmie Tribe, Tulalip Tribe, and Yakima Indian Nation (Tribes). The Tribes were invited to sign the Programmatic Agreement, along with Puget. Puget signed the Programmatic Agreement as a concurring party. The Tribes did not sign the Programmatic Agreement or comment on it.

53. The Programmatic Agreement requires Puget to integrate the objectives and goals of the license with the preservation of traditional cultural properties and historic properties. The Agreement provides for implementation of a Cultural Resources Mitigation and Management Plan, and an Historical Resources Mitigation and

[66]Flood stage refers to the elevation to which water rises when the most severe flood occurs during a prescribed period (e.g., 10 years, 100 years, etc.).

[67]The Final EIS had recommended that Puget be required to develop and implement plans for the excavations, and the City of Snoqualmie, Jim Simon, and Richard Kirby argue that the requirement recommended by the Final EIS should be adopted in case the section 205 project does not come to fruition. We will not do so. Puget need only mitigate for the portion of the flood hazard to which it contributes. This responsibility is sufficiently met by the project's decreased dam elevation, construction of a new side channel spillway, and the above noted proposals that will enable the Corps to do its work. The Corps work which the section 205 project contemplates – the excavations -- will change naturally occurring features for which Puget is not responsible.

[68] 16 U.S.C. § 470s.

Management Plan to preserve the features which define the cultural and historic character of the traditional cultural properties and historic buildings within the project's area of potential effect. Implementation of the Programmatic Agreement, including consultation with the Yakama Indian Nation, the Tulalip, and the Snoqualmie Tribes is required by Article 419 of the new license.

XIII. State and Federal Comprehensive Plans

54. Section 10(a)(2)(A) of the FPA[69] requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving waterways affected by the project. Pursuant to this section, federal and state agencies filed 13 comprehensive plans that address various resources in Washington and are relevant to the Snoqualmie Falls Project.[70] No inconsistencies were found.

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[69] 16 U.S.C. ' 803(a)(2)(A).

[70] The plans are: (1) Northwest Conservation and Electric Power Plan, Northwest Power Planning Council, 1986; (2) Strategies for Washington's Wildlife, Washington State Department of Game, 1986; (3) Snohomish River Basin Instream Resources Protection Program, Washington State Department of Ecology, 1979; (4) Hydroelectric Project Assessment Guidelines, Washington State Department of Fisheries, 1987; (5) An Assessment of Outdoor Recreation in Washington State: A State Comprehensive Outdoor Recreation Planning (SCORP) Document 2002-2007, Interagency Committee for Outdoor Recreation, 2002; (6) Washington State Scenic River Assessment, Washington State Parks and Recreation Commission, 1988; (7) Washington Outdoors: Assessment and Policy Plan, 1990-1995, Interagency Committee for Outdoor Recreation, 1990; (8) State of Washington Outdoor Recreation and Habitat: Assessment and Policy Plan 1995-2001, Interagency Committee for Outdoor Recreation, 1995; (9) Washington State Trails Plan: Policy and Action Document, Interagency Committee for Outdoor Recreation, 1991; (10) Resource Protection Planning Process- -Southern Puget Sound Study Unit, Washington State Department of Community Development, 1987; (11) Fisheries USA: The Recreational Fisheries Policy of the U.S. Fish and Wildlife Service, U.S. Fish and Wildlife Service, undated; (12) The Nationwide Rivers Inventory, National Park Service, 1982; and (13) Washington State Hydropower Development/Resource Protection Plan, Washington State Energy Office, 1992.

XIV. Applicant's Plans and Capabilities

55. In accordance with sections 10 and 15 of the FPA,[71] we have evaluated Puget's record as a licensee with respect to the following: (a) conservation efforts; (b) compliance history and ability to comply with the new license; (c) safe management, operation, and maintenance of the project; (d) ability to provide efficient and reliable electric service; (e) need for power; (f) transmission services; (g) cost effectiveness of plans; and (h) actions affecting the public.

A. Conservation Efforts

56. Puget has provided conservation service for its customers since 1979. Puget offers various energy conservation programs for both existing and new residential homes and for commercial and industrial customers.[72] Specific residential programs[73]are available to low-income and elderly customers, as well as to all-electric homes. Commercial and industrial programs provide energy analyses and cash grants to encourage energy efficiency improvements. Puget has saved more than 218 average megawatts (aMW) through company programs. We conclude that Puget is making a satisfactory good faith effort to conserve energy.

B. Compliance History and Ability to Comply with the New License

57. We have reviewed Puget=s compliance with the terms and conditions of the existing license. Puget has an overall record of making timely filings, and compliance with its license is satisfactory. Therefore, we believe Puget can satisfy the conditions of a new license.

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[71] 16 U.S.C. §§ 803 and 808.

[72] See Exhibit H, section 2.8 in Puget's License Application, filed November 25, 1991.

[73] Puget's energy conservation programs include weatherization, low-income weatherization, and water heating and energy efficient appliance programs.

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

58. The Snoqualmie Project has a "low" hazard potential classification and, in accordance with section 12.21(a) of the Commission's regulations,[74] it has been granted an exemption from filing an Emergency Action Plan. Therefore the project is not subject to Part 12 of the Commission's regulations.

59. Because of the high public usage of the Snoqualmie Falls Park (located on the north bank of the river, downstream of the Falls), public safety has been a high priority for Puget. Specific safety measures to be implemented at the project include: (1) fencing off the area at the top of the cliff at the edge of the Park, and the area at the end of the tailrace of Plant 1; (2) placing of safety signs at appropriate places to warn boaters of the hazard of the Falls and the distance to the Falls; (3) installing electronically activated park lighting for safe park usage during evening hours and inclement weather; (4) installing a boat barrier above the diversion dam; and (5) devising and implementing a Public Safety Plan (Plan). The Commission's Portland Regional Office has inspected the project and found that the measures and the Plan are adequate.

60. Furthermore, under the new license, during flood conditions, the proposed rubber weir would automatically and gradually deflate in order to maintain the pool elevation at 396.5 feet msl, thus providing some flood relief to the City of Snoqualmie, located upstream of the dam. To provide warning of imminent turbine start-up, Puget will install two high-decibel signaling devices directed toward water recreation areas.

61. The record suggests that the licensee has managed, operated, and maintained the project safely in the past and will do so in the future. We conclude that the project is safe for continued use and operation.

D. Ability to Provide Efficient and Reliable Electric Service

62. Puget's record of operating the project shows an ongoing effort to upgrade its maintenance equipment and its maintenance tracking system for increased equipment reliability and availability.

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[74] 18 C.F.R. § 12.21(a) (2003).

63. Lost generation due to unscheduled outages at the project for the period 1986-1990 was not significant B an average of 212 megawatt-hours (MWh)/year B when compared to the average annual generation of 272,771 MWh. To further improve efficiency and reliability and increase power generation, Puget proposes to replace or refurbish the turbine runners of both plants, thus increasing the project's total generating capacity from 44.4 MW to 54.4 MW without diverting additional flows.

64. We conclude that Puget has demonstrated the ability to provide, and a commitment to, continued efficient and reliable electric service.

E. Need for Power

65. Puget is an investor-owned electric utility serving 1.7 million customers within a 4,500-square-mile service area in the State of Washington. As licensed, the project would generate about 301,011 MWh annually, with an installed capacity of 54.4 MW. The project has a dependable capacity of 34.73 MW.

66. The project is located in the Northwest Power Pool Area (NWPP) of the Western System Coordinating Council (WSCC) region of the North American Electric Reliability Council. The peak demand and annual energy requirements for the NWPP area are projected to grow at an average annual compound rate of 2.5 percent and 1.9 percent, respectively, over the 10-year period from 2002 through 2011.[75]

67. In its September 2002 report, WSCC reports an available summer peak capacity of 72,183 MW in 2002 and shows 16,307 MW of generation additions planned for the period 2002 through 2011 in the NWPP power area. The generation reserve margin is projected to range from 36.3 percent to 47.0 percent.

68. Power from the Snoqualmie Falls Project would continue to be useful in meeting a part of the regional need for power.

[75] Western Electricity Coordinating Council, 10-Year Coordinated Plan Summary, 2002 – 2011, September 2002.

F. Transmission Services

69. Power generated at Plants 1 and 2 of the Snoqualmie Falls Project is generated at 2000 volts (Plant 1) and 6,900 volts (Plant 2), then stepped up to 115,000 volts and connected to Snoqualmie Falls Switching Station through short 115,000-volt lines. (The Snoqualmie Falls Switching Station is part of Puget's integrated transmission system. Thus, only the lines leading from the plants to the station are part of the project works.)

70. Puget proposes to continue use of the project=s energy in its transmission and distribution system. Because the existing transmission system suffices, Puget proposes no changes to the transmission network affected by project operations. We conclude that the existing transmission system is adequate for transmission of the increased amounts of power contemplated under the new license, and that licensing the project to continue operations will have no significant effect on the existing or planned transmission system.

G. Cost-Effectiveness of Plans

71. Puget has proposed increases in power production and efficiency, as well as environmental, recreational, and aesthetic resource enhancements (e.g., lowering dam's concrete crest, adding a side channel spillway, maintaining minimum flows in the tailrace and the river channel between Plants 1 and 2, and removing irregularities in the tailrace floor) that will affect the existing project operation. The Final EIS discusses the need for, usefulness of, and economics of these modifications in detail. We conclude that the project, as authorized and conditioned herein, fully develops and uses the hydropower potential of the site.

H. Actions Affecting the Public

72. Puget has operated the project in a safe and efficient manner and has provided recreational benefits to the general public.

XV. Project Economics

73. 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 our approach to evaluating the economics of

hydropower projects, as articulated in Mead Corp.,[76] we use current costs to compare the costs of the project and of likely alternative power without regard to forecasts beyond the license issuance date concerning potential future inflation, escalation, or deflation. The basic purpose of our analysis is to provide a general estimate of the potential power benefits and the costs of a project, and reasonable alternatives to project power. The analysis helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

74. In addition, certain economic factors related to project retirement that are not present in the licensing of new projects impinge on the decision to issue a new license. If an existing project subject to mandatory licensing is not issued a new license, or if the licensee declines to accept the new license, the project will have to be retired, which could range from simply removing the generator to major environmental restoration, up to and including dam removal.

75. In applying this analysis to the Snoqualmie Project, we have considered the no action alternative (the project as currently operating), the project if licensed with the water quality certification requirements and the Commission staff's recommendations, and project retirement with dam removal.

76. If licensed as currently operated, the project would produce about 272,771 megawatt-hours (MWh) of energy annually, at an annual cost of about $1,729,000 (2004 dollars) (6.3 mills/kWh). The current annual value of the project's power would be about $13,614,000 (49.9 mills/kWh). To determine whether the proposed project is currently economically beneficial, we subtract the project's cost from the value of the project's power. Thus, based on current costs, the project would have positive annual net benefits of $11,885,000 (43.6 mills/kWh).

77. If licensed with the proposed additional capacity, the water quality certification requirements and the requirements adopted herein, the project would produce about 301,110 MWh of energy annually, at an annual cost of about $4,045,000 (13.4 mills/kWh). The current value of the project would be about $14,998,000 (49.8 mills/kWh). Subtracting annual cost from the power value, the project would have positive annual net benefits of $10,953,000 (36.4 mills/kWh)

[76] 72 FERC & 61,027 (1995).

78. The cost of retiring project facilities and removing the dam would be about $1,195,000 annually over a 30-year period. If one adds to this the cost of replacing project power ($13,614,000) with an equivalent amount of power valued at Puget's avoided cost, the total estimated annual cost for the project retirement alternative would be $14,809,000.

79. The Final EIS analyzed the effects associated with the issuance of the new license for Project No. 2493. It recommends a number of measures to protect and enhance environmental resources, which we adopt, as discussed herein. These measures include: operating the project run-of-river (Article 406); releasing minimum flows to enhance the aesthetics of Snoqualmie Falls (Appendix A, Condition II.A and Article 421 (Labor Day weekend flow)); flood management (Article 308); constructing a bypass system for Plant 2 (Article 409) and modifying the tailrace at Plant 1 (Article 410) to prevent fish stranding or injury; and developing a Terrestial Resource Management Plan (Article 416).

XVI. Comprehensive Development

80. Sections 4(e) and 10(a)(1) of the FPA[77] require the Commission, in acting on applications for license, to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

81. In analyzing public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary benefits). These benefits could include their value as an almost instantaneous load-following[78] response to dampen voltage and frequency instability[79] on the

[77] 16 U.S.C. '' 797(e) and 803(a)(1), respectively.

[78] Load-following is the use of one or more online projects to meet the changes in customer electric loads.

[79] Voltage is the electrical pressure that causes current to flow through a

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transmission system, system-power-factor-correction through condensing operations,[80] and a source of power available to help in quickly putting fossil-fuel based generating stations back on line following a major utility system or regional blackout. In the competitive market, the ability of hydropower projects to provide ancillary services to the grid can increase the benefits of a project.

82. Based on our review of comments filed in the proceeding by the agencies, tribes, and public; our review of the environmental and economic effects of the proposed project and its alternatives; and our analysis pursuant to FPA sections 4(e) and 10(a)(1), we find that the Snoqualmie Falls project, as conditioned herein, will be best adapted to the comprehensive development of the Snoqualmie River for beneficial public uses.

83. The Draft and Final EIS issued for this project include background information, analyses of impacts, and support for related license articles. The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license.

XVII. License Term

84. Section 15(e) of the FPA[81] specifies that any new license issued shall be for a term that we determine to be in the public interest, but the term may not be less than 30 years, nor more than 50 years from the date on which the license is issued. Our policy establishes 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigative and enhancement measures; 40-year terms for

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transmission line. Frequency for an alternating current is the number of times that the current goes through a complete cycle per second. Instability occurs when the voltage and/or frequency cannot be maintained.

[80] The system power-factor is a measure of how efficiently a power system is operating. A hydropower project can help to correct for a power system's inefficiencies by operating turbines as synchronous condensers. In such operations, a wicket gate is closed and pressurized air is forced into a reaction-type turbine to displace any water. The turbine then spins in air, which allows it to regulate voltage by either supplying or absorbing power as needed to regulate the system.

[81] 16 U.S.C. ' 808(e).

projects with a moderate amount of proposed redevelopment, new construction, new capacity, or mitigative and enhancement measures; and 50-year terms for projects with proposed extensive redevelopment, new construction, new capacity, or mitigative and enhancement measures.

85. Puget proposes a moderate amount of new capacity and facility modifications, and we are including conditions in the new license which require moderate expenditures for mitigation and enhancement measures. Accordingly, we will issue a new license for the Snoqualmie Falls Project with a term of 40 years.[82]

The Commission orders:

(A) This license is issued to Puget Sound Energy, Inc. (licensee), for a period of 40 years, effective the first day of the month in which this order is issued, to operate and maintain the Snoqualmie Falls Hydroelectric Project. This license is subject to the terms and conditions of the 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, enclosed by the project boundary shown by Exhibit G:

Exhibit G Drawing	FERC No. 2493	Showing
G-1 filed December 9, 2003 (3 sheets)	1014	Project Boundary
G-2 filed December 9, 2003	1015	Project Facilities Area

(2) Project works consisting of: (1) a 195-foot-long inflatable rubber weir dam, located on the Snoqualmie River, ranging 2 feet to 4 feet in height with a crest elevation of 396.5 feet mean sea level (msl); (2) a 75-foot wide inflatable rubber weir side-channel spillway with a crest elevation of 397.0 feet msl; and two generating plants.

[82]Interveners Simon and Kirby assert that, given the project's uncertain impact on a floodplain rapidly undergoing development and considering an extensive forestry industry in the upper watershed, the license term should be issued only for the minimum 30-year period. However, the possible future effects of a project on the surrounding environment are addressed through requirements and reopener clauses in a license.

Plant 1 works consisting of: (1) a concrete intake structure with trashracks, gates, and hoists on the south bank of the river about 300 feet upstream from the dam; (2) one 8-foot diameter and one 6-foot-diameter steel penstock in 270-foot-long vertical rock shafts; (3) a 200-foot-long, 40-foot-wide, 30-foot-high underground powerhouse containing one horizontal Francis turbine rated at 15,300 horsepower (hp) directly connected to a synchronous generator rated at 11,500 kW and one Turgo Impulse turbine rated at 6,875 hp directly connected to a synchronous generator rated at 4,500 kW for a total capacity of 16,000 kW; (4) a 450-foot-long tailrace tunnel, which returns the flow to Snoqualmie Falls plunge pool; and (5) a 0.06-mile-long, 115-kV, three-phase transmission line; and (6) other appurtenances.

Plant 2 works consisting of: (1) a concrete intake structure on the north bank about 50 feet upstream from the dam, with trashracks, gates and hoists; (2) a 12-foot-diameter, 1,215-foot-long concrete-lined tunnel; (3) a 100-foot-long, 30-foot-deep, 25-foot-wide open forebay with a gatehouse and three 8-foot headgates; (4) a 7-foot-diameter, 600-foot-long steel penstock leading to Unit 1and two 7-foot-diameter, 75-foot-long steel penstocks that join to form a 10-foot-diameter, 515-foot-long bifurcated steel penstock leading to Unit 2; (5) a 46-foot wide by 122-foot long above-ground concrete powerhouse containing a horizontal Francis-type turbine rated at 15,300 hp connected to a horizontal shaft generator rated at 11,400 kW and a vertical, Francis-type turbine rated at 33,800 hp connected to a vertical shaft generator rated 27,000 kW, for a total capacity of 38,400 kW; (6) each penstock has a bifurcation with a bypass pipeline to divert water into a 120-foot-long, 20-foot-wide, 31-foot-deep concrete bypass chamber; (7) a 0.5-mile-long, 115-kV, three-phase transmission line; and (8) other appurtenances.

(C) The project works generally described above are more specifically shown and described by the following exhibits, filed December 9, 2003, that also form a part of the application for license and that are designed and described as:

(1) Table 1 on page 3 of the "Project Description for Refurbished Project."

(2) The table entitled "Physical Elements for the Snoqualmie Falls Project.

Exhibit F: General Design Drawings

Exhibit F Drawing	FERC No. 2493-	Showing
F-1	1001	Project Location and Drawing

Project No. 2493-006

		Index
F-2	1002	General Site Plan
F-3	1003	Hydraulic Profile
F-4 sheet 1 of 2	1004	Diversion Dam Plan
F-4 sheet 2 of 2	1005	Diversion Dam Longitudinal Section
F-5 revised	1006	Diversion Dam Sections
F-6 revised	1007	Plant 1 New Intake Plan & Sections
F-9 revised	1008	Plant 2 New Intake New 1700 cfs Intake
F-12	1009	Plant 2 New Penstock Unit 1 Plan and Section
F-18	1010	New Sediment Control Facilities Plan and Section
F-19	1011	Plant 2 Powerhouse Site Plan
F-21	1012	Plant 2 Powerhouse Longitudinal Section
F-22	1013	Plant 2 Powerhouse Transverse Sections

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

(D) Exhibits A, F, and G as filed December 9, 2003, and designated in ordering paragraph (B) above are approved and made a part of the license.

(E) This license is subject to the conditions submitted by the Washington State Department of Ecology under section 401(a)(1) of the Clean Water Act, as those conditions are set forth in Appendix A to this order. The Commission reserves authority to amend this license based upon any revisions to those conditions on appeal to the Washington Pollution Control Hearings Board.

(F) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States," and the following additional articles:

Article 201. The licensee shall pay the United States the following annual charges:

(a) For the purposes of reimbursing the United States for the Commission's administrative costs, pursuant to Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized existing installed capacity for that purpose is 44,400 kilowatts. This annual charge shall be effective as of the first day of the month in which this license is issued.

(b) In addition to the above charge a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized proposed additional capacity for that purpose is 54,400 kilowatts. This annual charge shall be effective as of the date of commencement of construction of the new capacity. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.

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

a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (e.g., P-2493-1001 through P-2493-1015) 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 (e.g., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

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

b) The licensee shall file two separate sets of exhibit drawings in electronic 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. The drawings must be identified as (CEII) material under 18 CFR §388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension [e.g., P-2493-1014, G-1, Project Boundary, 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

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points, arranged in a triangular format. The latitude and longitude coordinates, or State plane coordinates, of each reference point must be shown and identified on the drawing.

c) The licensee shall file three separate sets of the project boundary vector data in a geo-referenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format) with the Secretary of the Commission, ATTN: OEP/DHAC. The file name shall include: FERC Project Number, data description, date of this license, and file extension [e.g., P-2493, boundary vector data, MM-DD-YYYY.SHP]. The geo-referenced electronic boundary data file must be positionally accurate to ±40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. A single electronic boundary data file is preferred and must contain all reference points shown on the individual project boundary drawings. The latitude and longitude coordinates, or State plane coordinates, of each reference point must be shown. The data must be accompanied by a separate text file describing the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension [e.g., P-2493, project boundary metadata, MM-DD-YYYY.TXT].

Article 203. Pursuant to section 10(d) of the FPA, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project's surplus earnings, if any, in excess of the specified rate of return per annum on the net investment.

To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 204. If the licensee=s project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 301. The licensee shall commence construction of the project works within 2 years from the issuance date of the license and shall complete construction within 4 years from the issuance date of the license.

Article 302. At least 60 days before starting construction, the licensee shall submit its final contract plans and specifications along with an accompanying supporting design report, to the Division of Dam Safety and Inspections – Portland Regional Engineer (one copy) and to the Commission (two copies, one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections). The supporting design report shall cover all pertinent features, such as water retaining structures, penstocks, and powerhouses and be consistent with the Commission’s Engineering Guidelines. The Commission may require changes to the plans and specifications to assure the work is completed in a safe and environmentally sound manner. If the licensee plans substantial

changes to the location, size, type, or purpose of project features, the plans and specifications must be accompanied by revised Exhibit F and G drawings, as necessary. Construction may not commence until authorized by the Regional Engineer.

Article 303. At least 60 days before starting construction, the licensee shall submit for the Commission's review and approval its Quality Control and Inspection Program (QCIP). The licensee shall submit one copy to the Division of Dam Safety and Inspections – Portland Regional Engineer and two copies to the Commission (one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections). The QCIP shall include a sediment and erosion control plan.

Article 304. Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations. At least 30 days before starting construction of the cofferdams, the licensee shall submit the approved cofferdam construction drawings and specifications, and letters of approval, to the Division of Dam Safety and Inspections – Portland Regional Engineer (one copy) and to the Commission (two copies, one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections).

Article 305. At least 60 days before starting construction, the licensee shall submit its Temporary Emergency Action Plan (TEAP) for the Commission's review and approval. The licensee shall submit one copy to the Division of Dam Safety and Inspections – Portland Regional Engineer and two copies to the Commission (one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections). The TEAP shall describe emergency procedures in case failure of a cofferdam, large sediment control structure, or any other water retaining structure that could endanger construction workers or the public. The TEAP shall include a notification list of emergency response agencies, a plan drawing of the proposed cofferdam arrangement, the location of safety devices and escape routes, and a brief description of testing procedures.

Article 306. Within 90 days of completion of construction, the licensee shall file, for Commission approval, revised Exhibits A, F, and G to describe and show the project as built and to include within the project boundary any additional lands needed for project purposes. The licensee shall submit six copies to the Commission, one copy to the Commission's Regional Director, and one to the Director, Division of Project Compliance and Administration.

Article 307. At least 90 days before the start of any land-clearing or land-disturbing activities for construction of the diversion weir, the licensee shall file with the

Commission, for approval, four copies of a flood management plan. The licensee shall submit one copy to the Division of Dam Safety and Inspections – Portland Regional Engineer and three copies to the Commission (one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections). The plan shall include measures that the licensee will take during flood events, including dam operations; measures to ensure that the inflatable weir can be deflated, if necessary, during power outages; and a schedule for implementing and evaluating the plan.

The licensee shall prepare the plan after consultation with the U.S. Army Corps of Engineers; Washington Department of Ecology; King County; and the City of Snoqualmie. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. The licensee shall include with the plan the documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. If the licensee does not accept 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. Construction of the new dam 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.

Article 308. In furtherance of the U.S. Army Corps of Engineers' (Corps) flood control project for the City of Snoqualmie, the licensee shall: (1) convey property interests that enable the Corps to conduct excavations; (2) contribute labor and materials to relocate utility facilities to accommodate the Corps project; and (3) implement a scheduled power outage to permit the construction. The total value of the licensee's contribution shall be $785,100 ($487,100 for the labor and materials; $200,100 for the property interests; and $97,500 for the power lost). Within 30 days of commencement of the Corps' construction, the licensee shall submit to the Commission documentation of this contribution.

Article 401.

(a) Requirement to File Plans for Commission Approval and Requirement to Consult

Project No. 2493-006

Various conditions of this license found in the Appendix require the licensee to prepare a plan for approval by the Washington Department of Ecology or Washington Department of Fish and Wildlife. Each such plan shall also be submitted to the

Commission for approval and include an implementation schedule. These plans are listed below.

Condition No.	Plan	Due Date
II.B and II.C.3	Critical Flow Study	Within two years of the date of water quality certification
II.B	Ramping Rate Study	Within two years of the installation of rubber weirs and turbine generator refurbishment/replacement
III.A.1	Total Dissolved Gas Monitoring	Within six months of license issuance
III.B and V.A	Water Quality Compliance Monitoring	At least 30 days prior to the commencement of construction-related activities
IV.A	Oil Spill Prevention, Control, Containment, and Countermeasure Plan	Within six months of license issuance or at least 90 days prior to any ground-disturbing activities, whichever comes first
V.A	Water Quality Protection	At least 90 days prior to any ground-disturbing activities

The licensee shall prepare the plans after consultation with National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Washington Department of Ecology, and the Snoqualmie Tribe and the City of Snoqualmie. The licensee shall include with the plan, documentation of its consultation, copies of comments and recommendations made in connection with the plan, and a description of how the plan accommodates the comments and recommendations. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee shall implement the plan, including any changes required by the Commission.

Project No. 2493-006

(b) Requirement to File Documentation of Completion

The licensee shall file with the Commission documentation of completion of the following activities.

Condition No.	Activity	Due Date
III.A.2	Furnish Washington Department of Ecology with an annual Water Quality Monitoring Report	January 31 of each license year
III.A.4	Furnish Washington Department of Ecology with a report on exceedances of Class A water quality standards	Within 48 hours of observing an exceedance
III.A.5	Furnish Washington Department of Ecology with flow monitoring information	January 31 of each license year

(c) Requirement to File Amendment Applications

Certain conditions in the Appendix contemplate unspecified long-term changes to project operations, requirements, or facilities for the purpose of protecting and enhancing environmental resources. These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. The conditions are listed below.

Condition No.	Modification
I.E	Additional monitoring or studies
I.H	Changes in project operations and license implementation schedules
II.A	Changes to instream flow requirements
III.A.3	Suspension or modification of water quality monitoring
III.A.7	Changes in water quality sampling

Project No. 2493-006

VII	Amendment of the water quality certification

Article 402. Channel Conveyance Capacity Monitoring Plan. With six months of license issuance, the licensee shall file with the Commission, for approval, a plan to monitor and remedy project-caused aggradation in the project reservoir.

The licensee shall prepare the plan after consultation with the U.S. Army Corp of Engineers, King County, Washington Department of Ecology, and the City of Snoqualmie. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 403. Sediment and Erosion Control Plan. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission, for approval, an erosion and sediment control plan. The plan shall be based on actual-site geological, soil, and groundwater conditions and on project design, and shall include, at a minimum, the following items:

(1) a description of actual site conditions;

(2) measures to control erosion, prevent slope instability, and minimize the quantity of sediment resulting from project construction, operation, and maintenance;

(3) measures to revegetate disturbed areas with indigenous plant species;

(4) detailed descriptions, functional design drawings, and specific topographic locations of all control measures;

(5) a provision to conduct all in-river, land-clearing, and land-disturbing

activities between March 1 and September 30 to minimize potential adverse effects on aquatic resources and bald eagles;

(6) a provision for scheduling the release of forebay sediments only during high-flow events; and

(7) a specific implementation schedule and details for monitoring and maintenance programs for project construction and operation.

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 Ecology, City of Snoqualmie, King County, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the agencies and tribe to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. If the licensee does not accept 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. No land-disturbing or land-clearing activities shall 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.

Article 404. Construction Waste Transportation and Disposal Plan. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval, a construction waste transportation and disposal plan to protect aquatic, wildlife, and aesthetic resources. The plan shall indicate the locations of all excavated construction waste disposal sites and the travel routes to the disposal sites. The plan shall also include an implementation schedule.

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 Ecology, Washington Department of Transportation, City of Snoqualmie, King County, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and

recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and

specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. If the licensee does not accept 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. No land-disturbing or land-clearing activities shall 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.

Article 405. Operational Compliance Monitoring Plan. Within six months of the date of issuance of this license, the licensee shall file with the Commission for approval, an operational compliance monitoring plan. The plan at a minimum shall include:

(1) a provision to record penstock and conduit flows hourly for the duration of the license;

(2) a provision to record the Plant 1 and Plant 2 tailrace stages every 15 minutes for the first three years after the project becomes fully operational and every 30 minutes thereafter for the duration of the license;

(3) a description of how the project would be operated to maintain compliance with the run-of-river requirement of Article 406; the minimum flow requirements of Article 407 and Appendix A, Condition II.A; the ramping rate and critical flow requirements of Appendix A, Condition II.B; and the flow continuation requirements of Appendix A, Condition II.C;

(4) a description of the type and exact locations of all flow and stage monitoring equipment and gages;

(5) an indication of the frequency of recording and a monitoring schedule;

(6) a provision to maintain a log of project operation and generation, including documentation of gaging and project operation and generation data and all unusual circumstances, such as load rejections and interruptions of all project operation and minimum flow requirements of this license;

(7) a provision for providing the gaging and project operation and generation data to the National Marine Fisheries Service (NOAA Fisheries), U.S. Fish and Wildlife Service (FWS), Washington Department of Fish and Wildlife (WDFW), and the Washington Department of Ecology (Ecology) within 30 days of the specific agency's request for the data;

(8) an implementation schedule for the plan.

The licensee shall prepare the plan after consultation with the U.S. Geological Survey, NOAA Fisheries, FWS, WDFW, Ecology, and the Snoqualmie Tribe. 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 agencies and tribe, and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and tribe 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 406. Run-of-River Operation. The licensee shall operate the project in a run-of-river mode for the protection of water quality, fishery resources, riparian habitat, and aesthetic resources of the Snoqualmie River.

The licensee shall at all times act to minimize the fluctuation of the reservoir surface elevation by maintaining a discharge from the project so that, at any point in time, flows, as measured downstream of Plant 2.

Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement between the licensee and the Washington Department of Fish and Wildlife. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 407. Plant 1 Tailrace Minimum Flow. The licensee shall at all times release a minimum flow of 30 cubic feet per second through the Plant 1 tailrace to prevent fish stranding and injury.

This flow may be temporarily modified if required by operating emergencies beyond the control of the licensee and for short periods upon agreement between the licensee and the Washington Department of Fish and Wildlife. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 408. Plant 2 Emergency Intake Shutoff Valve. Within one year of the date of issuance of this license, the licensee shall file with the Commission, for approval, a plan for the design and construction of a system that will automatically detect a Plant 2 conduit or penstock failure and immediately shut off flow in the conduit or penstock at the headworks in the event of such a failure.

The plan, at a minimum, shall include:

(1) design drawings;

(2) a schedule for installation and testing of the system;

(3) a schedule for annual testing of the system throughout the term of the license; and

(4) a description of contingency measures to manually close off the conduit or penstock when the system is not operational.

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 Ecology, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 409. Plant 2 Flow Bypass System. Within one year of the date of issuance of this license, the licensee shall file with the Commission, for approval, a plan and implementation schedule for a Plant 2 flow bypass system that would meet the flow continuation criteria specified by Appendix A, Condition II.C.

The plan, at a minimum, shall include:

(1) design drawings;

(2) a schedule for installation and testing of the system; and

(3) a schedule for annual testing of the system throughout the term of the license to ensure that the system continues to meet the flow continuation criteria.

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 Ecology, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities, and specific descriptions of how the their comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 410. Plant 1 Tailrace Modifications. Within one year of the date of issuance of this license, the licensee shall file with the Commission for approval, a plan to modify the Plant 1 tailrace floor to prevent fish stranding in the event of a powerhouse shutdown.

The plan, at a minimum, shall include design drawings of the tailrace modifications and an implementation schedule for the plan.

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 Ecology, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities, and specific descriptions of how their comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 411. Plant 2 Tailrace Modifications. Within one year of the date of issuance of this license, the licensee shall file with the Commission for approval, a plan to modify the Plant 2 tailrace to prevent fish stranding. The plan shall include provisions to lower the elevation of the bedrock sill, remove or provide an opening for passage through the concrete wing wall, or make other alternative modifications to the tailrace that would prevent fish from becoming stranded in the event of a powerhouse shutdown.

The plan, at a minimum, shall include design drawings of the tailrace modifications and an implementation schedule for the plan.

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 Ecology, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities, and specific descriptions of how their comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 412. Effectiveness Evaluation of Tailrace Modifications. Within one year of the date of issuance of this license, the licensee shall file with the Commission for approval, a plan for evaluating the effectiveness of the Plant 1 and Plant 2 tailrace modifications at preventing fish stranding, injury, and mortality as required by Articles 410 and 411.

The plan, at a minimum, shall include a schedule for:

(1) implementation of the plan;

(2) consultation with the appropriate federal and state agencies concerning the results of the evaluation; and

(3) filing the results, agency comments, and licensee's response to agency comments with the Commission.

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 Ecology, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities, and specific descriptions of how their comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 413. Snoqualmie River Gamefish Enhancement Plan. Within one year of the issuance date of this license, the licensee shall file with the Commission for approval, a final Snoqualmie River Game Fish Enhancement Plan based on the preliminary plan as filed in Volume 3, Appendix 7E of the license application, filed November 25, 1991, excluding Sub-Element 4 Genetic Stock Identification Study (GSI), for the purpose of enhancing fish resources in the vicinity of the project. Consistent with the preliminary plan, the funds allocated by the licensee to all studies and protection, mitigation, or enhancement measures specified in the final plan shall not exceed a total of $426,726 (1991 dollars). The plan may redirect studies or enhancements and reallocate monies from that outlined in the preliminary plan in order to accomplish the goal of enhancing fish resources, including fish habitat, in the vicinity of the project. The plan shall include an implementation schedule.

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 Ecology, and the Snoqualmie Tribe. The licensee shall allow a minimum of 30 days for the agencies and tribe to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. If the licensee does not accept 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 by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan including any changes required by the Commission.

Article 414. Annual Mitigation and Monitoring Activities Report. By January 31 of each year, the licensee shall file with the Commission and provide the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, and Washington Department of Ecology copies of an annual report that summarizes the mitigation and monitoring activities and discusses any deviations from the requirements of this license that occurred during the previous calendar year.

Article 415. Agency Access to Project Lands. The licensee shall allow representatives of the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, and Washington Department of Ecology,

in the performance of their official duties and upon appropriate advance notification and the showing of proper credentials, free and unrestricted access to, through, and across project lands and project works during project operation and before and during construction of project facilities.

Article 416. Terrestrial Resource Management Plan. Within one year of the issuance date of the license, or at least 90 days prior to any ground-disturbing activities, which ever comes first, the licensee shall file for Commission approval, after consultation with the Washington Department of Fish and Wildlife (WDFW) and the U.S. Fish and Wildlife Service (FWS), a terrestrial resource management plan. The plan shall include, but not be limited to, provisions for the following: (1) land surveys along 1 mile of the Snoqualmie River downstream from Plant 2 for active osprey nests; and if active osprey nests are found, an assessment of the effects of project-related construction on nesting ospreys; (2) identification and retention of potential bald eagle (Haliaeetus leucocephalus) roosting, perching, and nesting trees on project land; (3) revegetation measures, including native plant species, to restore areas disturbed by project-related activities; (4) restoration and enhancement measures for the small wetland above Plant 2; and (5) annual consultation with the WDFW and FWS and/or provision of monitoring reports(s) to the agencies.

The plan shall include documentation of consultation with WDFW and FWS, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 417. Recreation Resource Management Plan. Within one year of the issuance date of the license, the licensee shall file for Commission approval, after consultation with the Washington Department of Fish and Wildlife, National Park Service, City of Snoqualmie, Snoqualmie Tribe, and King County, a Recreation Resource Management Plan for managing recreation facilities and public access at the Snoqualmie Falls Project. The plan shall include, but not be limited to, provisions for the following: (1) in the Plant 2 area (a) provide a naturally-landscaped carry-in boat access; (b) provide a public restroom; (c) replace the outdoor education center; and (d) improve the existing parking lot; (2) at Snoqualmie Falls Park, (a) provide a new trailhead for the trail leading

to the lower observation deck; and (b) re-locate and improve the trail to the lower observation deck; (3) replace the recreational facilities, such as picnic tables and benches,

as needed; (4)an interpretive plan, including a history of the site's natural environment, of the project, and of Indian tribes in the area; and (5) improve all walkways. The licensee shall also provide directional and interpretive signs.

The plan shall include a construction schedule; the entity responsible for operating and maintaining the facilities; costs for the construction and maintenance of each facility; proposed measures to control soil erosion and an assessment of such measures; a discussion of how the needs of the disabled were considered in the planning and design of the recreation facilities; documentation of agency consultation; copies of comments and recommendations on the plan after it has been prepared and provided to the agencies; and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 418. Monitoring Recreation Use. The licensee, after consultation with the Washington Department of Fish and Wildlife (WDFW), National Park Service (NPS), and the City of Snoqualmie, shall monitor recreation use of the project area to determine whether existing recreation facilities are meeting recreation needs. Concurrent with the filing of FERC Form 80, required by section 8 of the Commission's Regulations (18 CFR 8.11), the licensee shall file a report with the Commission on the monitoring results. This report shall include: (1) recreation use figures; (2) a discussion of the adequacy of the licensee's recreation facilities at the project site to meet recreation demand; (3) a description of the methodology used to collect all study data; (4) if there is a need for additional facilities, a recreation plan proposed by the licensee to accommodate recreation needs in the project area; (5) documentation of agency consultation and agency comments on the report after it has been prepared and provided to the agencies; and (6) specific descriptions of how the agencies' comments are accommodated by the report. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the report with the Commission. The Commission reserves the right to require changes to the report.

Article 419. Implementation of the Programmatic Agreement. The licensee shall

implement the "Programmatic Agreement between the Federal Energy Regulatory Commission, the Washington State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Application for New License before the Federal Energy Regulatory Commission for the Snoqualmie Falls Project, FERC No. 2493, located approximately 25 miles east of Seattle, in King County, Washington" (executed on January 17, 1997), including but not limited to the Historical Resources Mitigation and Management Plan, and Cultural Resources Mitigation and Management Plan, both dated February 26, 1996.

In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of its approved Historical Resources Mitigation and Management Plan, and Cultural Resources Mitigation and Management Plan. The Commission reserves the authority to require changes to the aforementioned plans at any time during the term of the license.

Within one year of the issuance date of the license, the licensee shall file for Commission approval Snoqualmie Falls Project Maintenance Guidelines (Maintenance Guidelines) and a Cultural Resources Mitigation Proposal (Mitigation Proposal) as stipulated in the Programmatic Agreement. If the Programmatic Agreement is terminated prior to Commission approval of the Maintenance Guidelines and Mitigation Proposal, the licensee shall obtain Commission approval before engaging in any ground disturbing activities or taking any other action that may affect any Historic Properties within the Project's Area of Potential Effect.

Article 420. Aesthetic Resources Plan. Within six months of the issuance date of the license, the licensee shall file for Commission approval, after consultation with the National Park Service, Washington State Historic Preservation Office, and the City of Snoqualmie, an aesthetic resources plan to improve Snoqualmie Falls Project facilities and assure preservation of the Historic District. The plan shall include, but not be limited to, the following: (1) restore the exterior appearance of the transformer house and machine shop; (2) use darker, unobtrusive color compatible with the natural landscape for the elevator building; (3) replace the fence around Plant 1 and other new or replacement fencing within the project boundary with materials compatible with the natural landscape; (4) paint the Plant 2 penstocks and gatehouse with a darker, unobtrusive color compatible with the natural landscape, and consider using vegetative screening around the gatehouse; and (5) an implementation schedule.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated

by the plan. The licensee shall allow a minimum of 30 days for the agencies 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 421. Aesthetic Flows for Labor Day Weekend. In addition to the minimum aesthetic flows required by Appendix A, Condition II.A., the licensee shall, during Labor Day Weekend of each license year, release a minimum flow over the Falls of 200 cubic feet per second, or inflow if less, commencing one hour before sunrise on the Saturday of Labor Day Weekend and extending to one hour after sunset on Labor Day.

This flow may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee and the City of Snoqualmie. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 422. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water 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 watercraft 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 reservoir 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 reservoir.

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 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.

(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 ten watercraft 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 exhibit R or 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 seventy-five feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than fifty total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year.

At least sixty days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office ofEnergy 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 or K 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 forty-five 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 exhibit R or approved report on recreational resources of an exhibit E; or, if the project does not have an approved exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

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

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

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

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

(G) 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.

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(H) 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 FPA. 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. Commissioner Brownell dissenting with a separate statement attached.

(S E A L)

Linda Mitry,
Acting Secretary.

Project No. 2493-006

APPENDIX A

Washington Department of Ecology's CWA Section 401 Conditions Issued September 25, 2003 (filed October 6, 2003), as Amended by the Washington Pollution Control Hearings Board on April 7, 2004 (filed 15, 2004), for the Snoqualmie Falls Hydroelectric Project.

I. General Requirements

A. All water quality criteria specified in Chapter 173-201A WAC apply to all waters affected by this project and Puget Sound Energy shall comply with those criteria, in accordance with this order and the referenced documents. Nothing in this order shall be construed to allow Puget Sound Energy to violate Washington State water quality standards.

B. In the event of changes in or amendments to the State water quality standards (WAC 173-201A), the State Water Pollution Control Act (RCW 98.48), or the Federal Clean Water Act (33 USC 1251, et seq.), such provisions, standards, criteria or requirements shall also apply to this project and any attendant agreements, orders or permits.

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

D. Puget Sound Energy shall allow Ecology such access as necessary to inspect the project for compliance with the conditions of this order.

E. Ecology retains the right to require additional monitoring or studies if it determines there is a likely probability that water quality violations have or may occur in accordance with the amendment of certification process described in section VII.

F. Puget Sound Energy's construction activities described in its application for certification must comply with all conditions of any applicable Washington Department of Fish and Wildlife Hydraulic Project Approval.

G. Copies of this order and associated permits, licenses, approvals, and other documents shall be kept on site and made readily available for reference by Puget Sound Energy staff, its contractors and consultants, and by Ecology.

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H. Ecology will be developing a temperature Total Maximum Daily Load (TMDL) and associated implementation plan for bringing the Snoqualmie River into compliance with Washington State's water quality standards. Where it is more protective, the provisions of the implementation plan relevant to Snoqualmie Falls Hydropower Project and its operations, including specified time frames for implementing improvement measures, shall supercede conditions of this order.

II. Instream Flow

A. The project shall be operated to ensure that at least the following rates of instream flow, or natural flow, whichever is less, pass over Snoqualmie Falls as measured at the crest of the diversion weir, in accordance with the following schedule:

Time Period	Daytime	Nighttime [1]
May 16-May 31	200 cfs	200 cfs
June 1 - June 30	450 cfs	450 cfs
July 1 - July 31	200/100 [2] cfs	200/25 [2] cfs
August 1 - August 31	200/100 [2] cfs	200/25 [2] cfs
September 1 - May 15	100 cfs	25 cfs

[1] Nighttime hours are defined as one hour after sunset to one hour before sunrise.

[2] Weekends and holidays flat 200 day/night, weekdays 100 day/25 night
cfs means cubic feet per second

Between the Snoqualmie Falls plunge pool and Powerhouse #2, Puget Sound Energy shall always provide at least a minimum flow of 300 cfs or natural river flow, whichever is less.

Instream flows shall be maintained in any bypass reach and downstream of the project, in a quantity sufficient to meet water quality goals and standards for the waterway, as provided in Chapter 173-201A WAC and RCW 90.48.

In order to assure continuing compliance with Chapter 173-201A WAC, Ecology reserves the right to amend the instream flow requirements specified in this Certification in accordance with the amendment of certification process described in section VII.

B. Ramping Rate [3]

Season	Daylight [4] Rates	Nighttime Rates
Feb. 16 - June 15	No ramping allowed	2 inches per hour
June 16 - Oct. 31	1 inch per hour	1 inch per hour
Nov. 1 - Feb. 15	2 inches per hour	2 inches per hour

[3] Ramping rate refers to the allowable stage of decline unless otherwise noted.

[4] Daylight hours are defined as one hour before sunrise to one hour after sunset.

Within two (2) years of the date of this Certification, Puget Sound Energy shall develop and implement a study to establish the critical flow for the area of the project influence. Within two (2) years of the installation of the rubber weirs and turbine generator refurbishment/replacement, Puget Sound Energy shall develop and implement a study to establish specific ramping rates for the area of project influence. This study shall include the establishment of the low flow levels at which point Puget Sound Energy shall go to a flat 100 cfs in order to protect fish during the low flow period from August 1 until October 31. This study shall also investigate the feasibility of using partial weir deflation to further moderate the ramping rate changes associated with Plant #1. These two studies shall be developed in consultation with Ecology, Washington Department of Fish & Wildlife (WDFW) and the federally recognized Tribes in the watershed, and be approved by WDFW. The critical flow and ramping rates identified by these studies shall become the established critical flow and ramp rates for this project effective immediately upon approval by WDFW.

From July 1 through May 31, all ramping shall be conducted using Powerhouse #1, unless unable to do so due to maintenance or repair. From June 1 through June 30, ramping shall be conducted using Powerhouse #1 to the maximum extent possible.

From February 16 through June 15, each nightly flow reduction over the falls shall be completed five (5) hours before sunrise.

All established ramp rates must be in compliance for river flows below the critical flow criteria, as measured at the USGS Gauging Station 12144500, Snoqualmie River near Snoqualmie.

The project shall not exceed an upramp rate of more than six (6) inches per hour for all flows below the deflation threshold for the rubber weirs as determine in section VI.B.

C. Flow Continuation Criteria

The project shall adhere to the following flow continuation criteria as specified by WDFW. Powerhouse #2 of the project shall be operated such that 48 hours of continuous flow can be maintained by use of the flow continuation valve or another unit in the same powerhouse. The project shall be operated to provide the required ramping rate.

Flow continuation requirements for Powerhouse #2 shutdowns are as follows:

(1) Under high flow conditions, which are defined as flows in excess of the annual ten (10) percent exceedance flow no flow continuation is required.

(2) A minimum of six (6) hours of flow continuation shall be required when instream flow is between the high flow and the critical flow as defined below.

(3) When flows are at or below critical flow, flow continuation shall be maintained for a minimum of 24 hours from June 16 to February 15.

Critical flow is defined as the flow above which there is no risk of stranding or redd dewatering. The critical flow above which there is no risk of stranding or redd dewatering is defined on an interim basis as 2,500 cfs (see decision of Pollution Control Hearings Board, April 17, 2004), as measured at the USGS Gauging Station 12144500, Snoqualmie River near Snoqualmie, until the studies required in section II.B are completed.

When penstock disruption is inevitable, flow continuation requirements may be suspended, and ramping may start immediately. Examples of inevitable disruption include sudden mechanical failure or repairs requiring dewatering of the penstock. At Powerhouse #1, the flow continuation criteria include the use of water flow deflectors and transfers of flow to other Powerhouse #1 units, if available, subject to the same three flow

continuation requirements stated above for Powerhouse #2 shutdowns. As part of the Critical flow study required in section II.B, Puget Sound Energy shall determine, in consultation with the agencies, the feasibility of using partial deflation of the diversion weir to help maintain flow continuity in the event of unit shutdowns or penstock flow disruptions at Powerhouse #1.

III. Water Quality Monitoring and Reporting

A. Long-Term Facility Operations

Temperature measurement and recording devices capable of recording temperatures on an hourly basis shall be installed upstream of the diversion, immediately upstream of Powerhouse #1 tailrace and immediately upstream of Powerhouse #2 tailrace. From June 1 through October 31, Puget Sound Energy shall monitor temperatures on a daily basis to ensure compliance with the water quality standards.

Whenever the diversion of waters from the Snoqualmie River is causing, or may be tending to cause, water temperatures below the diversion dam to exceed the allowable increases set forth in State water quality standards (Chapter 173-201A WAC), Puget Sound Energy shall modify its diversion to the extent necessary to ensure that the project does not cause such exceedances.

Puget Sound Energy shall collect representative water quality samples at upstream and downstream sampling locations approved by Ecology, in accordance with the following methods and schedule:

(1) Within 60 days of the issuance of this Certification, Puget Sound Energy shall submit a monitoring plan for Total Dissolved Gas (TDG) to Ecology. At a minimum the plan shall consist of four (4) TDG measurements taken over three (3) consecutive months at each powerhouse. The monitoring shall be initiated within 60 days of the completion of the rubber weirs. If all measurements of TDG are in compliance with water quality standards set forth in Chapter 173-201A WAC, the frequency of TDG monitoring may be reduced to annually thereafter.

(2) Water quality monitoring results obtained shall be reported to Ecology's Water Quality Program, Northwest Regional Office, on an annual basis. Data shall be summarized and reported in a format approved by Ecology. This report shall be submitted no later than January 31st each year.

(3) Suspension or modification of water quality monitoring as described above may be requested if, after a minimum of three (3) years of complete, reliable data collection following the completion of the rubber dam, demonstrates that there are no violations of water quality standards.

(4) Any observed values in excess of Class A water quality standards for pH, temperature, dissolved oxygen, total dissolved gas, and turbidity, shall be reported to Ecology's Northwest Regional Office within 48 hours of observation. The report shall include an explanation of cause of the exceedance and notification of the actions taken to correct the exceedance.

(5) Flow monitoring information obtained to validate the instream flow requirements shall be reported to Ecology's Water Quality Program, Northwest Regional Office, on January 31st each year. Data shall be submitted in the format of mean daily flows, or as specified in any new water right subsequently issued for this project.

(6) Calibration procedures for flow measurement shall be in accordance with manufacturers recommendations and be made available to Ecology upon request.

(7) Ecology may, where necessary to protect water quality, require that Puget Sound Energy implement a more rigorous water quality sampling program for the listed or additional parameters in accordance with the amendment of certification process described in section VII.

B. <u>Construction Activities</u>

A Water Quality Compliance Monitoring Plan shall be developed and implemented in accordance with the Water Quality Protection Plan

submitted to and approved by Ecology pursuant to section V.A of this certification. The plan shall be submitted to and approved by Ecology's Water Quality Program, Northwest Regional Office 30 days prior to the commencement of construction related activities. The plan shall include monitoring protocols for parameters of concern including turbidity, pH, Total Suspended Solids (TSS), Dissolved Oxygen (D.O.) and Total Petroleum Hydrocarbons (TPH).

IV. Oil Spill Prevention and Control

A. An Oil Spill Prevention, Control, Containment, and Countermeasure Plan must be prepared that covers all oil filled equipment to be installed and utilized at the site. This equipment includes the turbine/generator set, all oil filled transformers and capacitors to be installed at the project, and all mobile maintenance equipment to be utilized at the project.

B. RCW 90.56 prohibits any discharge of oil, fuel or chemicals into State waters, or onto land with a potential for entry into State waters.

C. Visible floating oils released from construction or project operation shall be immediately contained and removed from the water.

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

E. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into State waters. Proper security shall be maintained to prevent vandalism.

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

G. No emulsifiers or dispersants are to be used in waters of the State without prior approval from Ecology's, Northwest Regional Office.

H. Spills into State waters, spill onto land with a potential for entry into State waters, or other significant water quality impacts, shall be reported immediately to Ecology's, Northwest Regional Office at (425) 649-7000 (24 hour phone number).

V. Construction Activities

A. A Water Quality Protection Plan shall be developed for all in and near-water construction work related to the project. The Plan shall be submitted to and approved by Ecology's Water Quality Program, Northwest Regional Office prior to the commencement of construction related activities. Along with applicable Best Management Practices for in and near-water work, the Plan shall include a Water Quality Compliance Monitoring Plan (Section III.B), and if applicable, a copy of the Hydraulic Project Approval (HPA) secured from WDFW for the project.

B. A full time Pollution Control Inspector shall be made available to supervise implementation of the Water Quality Protection Plan.

C. All construction contractors working on the project shall use all reasonable measures to minimize the impacts of construction activity on waters of the State. Water quality constituents of particular concern are turbidity, suspended sediment, settleable solids, Total Petroleum Hydrocarbon (TPH), and pH. These measures include use of Best Management Practices (BMP's) to control erosion and sedimentation, proper use of chemicals, oil and chemical spill prevention and control, clean-up of surplus construction supplies and other solid wastes, use of flow deflectors when working within the stream channel, adequate operation and maintenance of sedimentation ponds, and land application of sedimentation pond effluent where possible.

D. Coverage under an NPDES Construction Stormwater General Permit shall be obtained prior to the start of construction activities, if required by current NPDES permitting requirements.

E. Care must be taken to prevent any petroleum products, paint, chemicals, or other harmful materials from entering the water.

F. Work in or near the waterway shall be done so as to minimize turbidity, erosion and other water quality impacts.

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G. Mobile equipment that enters the water shall be maintained such that a visible sheen from petroleum products does not appear.

H. Construction related activities resulting in dead or dying fish are not allowed and these activities shall cease immediately and Ecology's Water Quality Program, Northwest Regional Office shall be notified immediately by telephone at (425) 649-7000, a 24 hour number.

VI. Operation of Rubber Weir

A. The operation of the rubber weir shall not result in a dam crest elevation at Snoqualmie Falls to exceed 396.5 feet (1929 NGVD).

B Deflation procedures for the rubber weir shall be in accordance with protocols established by written agreement between Ecology, King County Surface Water Management, Puget Sound Energy, City of Snoqualmie and other relevant agencies or authorities.

VII. Amendment of This Certification

To the fullest extent provide by law, Ecology reserves the right to amend this Certification if Ecology determines that the provisions hereof are no longer adequate to provide reasonable assurance of compliance with applicable water quality standards or other applicable requirements of State law. Any such amendment shall be done by order which shall be appealable to the Pollution Control Hearings Board pursuant to RCW 43.21B. Ecology shall transmit any such orders to the Federal Energy Regulatory Commission for inclusion in the existing license order.

VIII. Enforcement Provisions of Water quality certification

To the fullest extent provided by law, Ecology reserves the right to bring enforcement actions pursuant to state law or federal law to enforce the requirements of this certification and all applicable requirements of state or federal water quality laws. Such authority includes the right to seek civil or criminal penalties.

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IX. Additional Requirements

This certification does not relieve the applicant from the responsibility of meeting applicable regulations of other agencies.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Puget Sound Energy, Inc. Project No. 2493-006

(Issued June 29, 2004)

Nora Mead BROWNELL, Commissioner *dissenting*:

1. Sections 4(e) and 10(a)(1) of the FPA require the Commission, when acting on an application for a hydropower license, to give equal consideration to developmental and nondevelopmental uses of the waterway. The primary issue in this proceeding is how much of the river flow the licensee should be allowed to divert from Snoqualmie Falls to the detriment of the nondevelopmental uses such as recreational, cultural and religious interests. This is never an easy task; however, I have concluded that this order fails to strike the right balance.

2. Under natural conditions, flows over Snoqualmie Falls would equal or exceed 1,000 cfs 80 percent of the time.[1] The prior license imposed a minimum flow of 100 cfs during daylight hours.[2] Today's order issues a license that incorporates the minimum flows set forth in the state water quality certification. The water quality certification provides for minimum daytime flows well below those recommended by Commission staff in the Final EIS.

3. Based on the extensive record that was developed in this proceeding, I conclude that the recommendation in the Final EIS would have properly balanced developmental and nondevelopmental uses as well as the associated costs.[3] The Final EIS recommended an alternative that would have substantially increased minimum daytime flows. In particular, the staff-recommended alternative would have required a 450 cfs minimum daytime flow throughout April and July, and a 1,000 cfs minimum daytime flow throughout May and June. In contrast, the minimum flows specified in the water quality certification only exceed 200 cfs in one month, and then are set at only 450 cfs.

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[1] Final EIS at p. xix.

[2] Id.

[3] For example, Commission staff acknowledged the critical importance of mist and spray to the Snoqualmie Tribe and included an explicit analysis that showed that mist and spray begin a dramatic rise up through the canyon at flows of 1,000 cfs or greater. See id. at p. 3-45 & Table 3-9.

4. While the Commission cannot impose water quality conditions that are less stringent than those contained in a water quality certification, it can adopt conditions that are more stringent. Today's order makes a single modification to the minimum flows set forth in the water quality certification: a three-day increase in flows from 100 cfs to 200 cfs to accommodate the interests of tourists visiting the Falls over the Labor Day weekend. The order offers no explanation for rejecting the other staff-recommended increases in minimum flows for the benefit of the Snoqualmie Tribe, beyond noting that the Snoqualmie Tribe asserts that only totally natural flows are acceptable. The Snoqualmie Tribe's refusal to accept any diversion of river flows does not relieve this Commission of its duty to make its own determination of the flows that best balance all competing interests, including those of the Snoqualmie Tribe. Given the minimal amount of other mitigation included in the license, I have concluded that the staff-recommended minimum flows (with the nighttime flows adjusted to comply with the water quality certification on daily fluctuations) would strike a better balance than the flows adopted by the majority.

Nora Mead Brownell