

98 FERC ¶ 61, 274
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
William L. Massey, Linda Breathitt,
and Nora Mead Brownell.

City of Tacoma, Washington

Project No. 2016-044

ORDER APPROVING SETTLEMENT AND ISSUING NEW LICENSE

(Issued March 13, 2002)

The City of Tacoma, Washington (Tacoma) filed an application for a new license, pursuant to Sections 15 and 4(e) of the Federal Power Act (FPA),¹ for the continued operation and maintenance of the 462-megawatt (MW) Cowlitz River Hydroelectric Project No. 2016, located on the Cowlitz River in Lewis County, Washington, and in part on lands within the Gifford Pinchott National Forest.² On September 11, 2000, Tacoma filed a settlement agreement (Agreement), which is signed by most of the participants in a collaborative relicensing process.

For the reasons discussed below, this order approves the Agreement with some modifications and issues a new license for the Cowlitz River Project. The new license, as conditioned in this order, authorizes Tacoma to continue to produce much needed power in a sound, environmentally sensitive manner. In addition, the new license includes numerous enhancements to the existing aquatic and terrestrial environments, and recreation. We therefore find that the Cowlitz River Project, with the conditions adopted in the new license, will serve the public interest because it is best adapted to the comprehensive development of the Cowlitz River Basin for all beneficial public purposes, in accordance with the requirements of Section 10(a)(1) of the FPA.³

BACKGROUND

¹ 16 U.S.C. §§ 808 and 797, respectively.

² About 5 acres of the project are on National Forest Service lands and about 59 acres are on lands owned by the Bureau of Land Management.

³ 16 U.S.C. § 803(a)(1).

The original license for Cowlitz River Project was issued in 1951,⁴ and expired on December 31, 2001. Since that time, project operations have continued pursuant to an annual license.⁵

Tacoma filed its relicense application on December 27, 1999.⁶ Notice of the application was issued on March 15, 2000. By notices dated May 10, 2000, and July 12, 2000, the filing deadline for interventions was extended to July 15, 2000, and August 15, 2000, respectively. Timely interventions in the relicense proceeding were filed by the U.S. Department of the Interior (Interior); the U.S. Department of Agriculture, Forest Service (Forest Service); the National Marine Fisheries Service (NMFS); Bonneville Power Administration (BPA); Washington Department of Fish and Wildlife (Washington DFW); Washington State Department of Ecology (Ecology); Confederated Tribes and Bands of the Yakama Nation (Yakama Nation); the Cowlitz Indian Tribe (Cowlitz Tribe); Public Utility District No. 1 of Lewis County, Washington (Lewis County PUD); jointly by Washington Council of Trout Unlimited and Trout Unlimited National (Trout Unlimited); American Rivers; jointly by Friends of the Cowlitz and Cowlitz Plan for Restoration-Fish (CPR-Fish); Steelhead Trout Club of Washington; King County Outdoors Sports Council; Lower Columbia Fish Recovery Board; Cowlitz River Charters; and John Squires. The Cowlitz Tribe filed a protest of the license application. The concerns of the Cowlitz Tribe are discussed below.

Subsequent to the filing of the license application, Tacoma and the following entities negotiated and signed an Agreement which resolves the various issues in the proceeding: Washington DFW; Ecology; Washington State Parks and Recreation Commission; Interior, Fish and Wildlife Service (FWS); NMFS; Forest Service; Interagency Committee for Outdoor Recreation; Lewis County; Yakama Nation; Trout Unlimited; and American Rivers. On September 11, 2000, Tacoma, on behalf of the signatories, filed the Agreement with the Commission, requesting that the measures for protection, mitigation, and enhancement of fish and wildlife and recreation and cultural resources set forth in the Agreement's Appendix A be incorporated, without material modification, as articles in the new Cowlitz River Project license. The Agreement and the proposed articles are described below. Participants in the negotiations that chose not to sign are: Cowlitz Indian Tribe, Friends of the Cowlitz, CPR-Fish, and Lower Columbia Fish Recovery Board.⁷ The Agreement was noticed and comments opposing the

⁴ 10 FPC 424 (1951).

⁵ See 16 U.S.C. § 808(a)(1).

⁶ Preparation of the application followed the Commission's alternative licensing procedures, which were approved for use in this proceeding on February 24, 1998.

⁷ Although the Sport Fishing Guides of Washington did not participate extensively in the negotiations, they initially signed the Agreement but withdrew their support for the Agreement on January 22, 2001, because of what they regarded as inadequate representation of their interests in future decision-making processes.

Agreement were filed by the Cowlitz Tribe, CPR-Fish and Friends of the Cowlitz (hereafter, collectively referred to as Friends of the Cowlitz), Lower Columbia Fish Recovery Board, Northwest Marine Trade Association, and King County Outdoor Sports Council. In addition, the Commission received 27 letters from the general public and sport fisherman objecting to the Agreement. All of the comments expressed concern that the measures defined in the Agreement were inadequate to ensure the recovery of listed salmon stocks.

A Draft and Final Environmental Impact Statement (FEIS) for the Cowlitz River Project were issued on June 8, 2001, and November 9, 2001, respectively. The FEIS includes background information, analysis of impacts, and support for related license articles. The FEIS recommends adopting the Agreement and issuing a new license as conditioned in this order. We have fully considered the motions and extensive comments received from interested agencies, tribes, and individuals in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

The Cowlitz River Project consists of 2 dams on the Cowlitz River, the Mayfield Dam at river mile 52 and the Mossyrock Dam, upstream at river mile 65. It also includes the Cowlitz Salmon Hatchery and the associated Barrier Dam, and the Cowlitz Trout Hatchery. The Mayfield Dam forms Mayfield Lake and was completed in 1963. The Mossyrock Dam creates Riffe Lake and was completed in 1968. Barrier Dam supports the hatchery and was completed in 1969.

The Mayfield development consists of: Mayfield reservoir with a gross storage of 133,700 acre-feet and a surface area of 2,250 acres; a 250-foot-high (200 feet above the riverbed), 850-foot-long, concrete arch and gravity dam, an overflow spillway section that has a combined discharge capacity of 203,000 cfs; an intake tunnel contained within a separate structure located upstream of the dam on the right abutment; a 37-foot-diameter, 854-foot-long power tunnel that passes through the right abutment of the dam and terminating at a concrete forebay structure; four steel penstocks varying in length from 235 to 278 feet; a powerhouse that contains four 40,500-kW vertical Francis turbines for an installed capacity of 162 MW; a functioning downstream fish passage facility; a bypass channel that directs the fish to a secondary separator, where they are guided through the dam to a holding/counting facility and emptied into the river below the powerhouse through a pipe and chute.

The Mossyrock development, located immediately upstream of the Mayfield development, consists of: Riffe Lake with a gross storage of 1,685,100 acre-feet and a surface area of 11,830 acres; a 606-foot-high (365 feet above the riverbed), 1,300-foot-long, double curvature concrete arch dam, with two 300-foot-long gravity-type concrete wing walls; a rockfill embankment on the left abutment; a spillway having a combined

discharge capacity of 240,000 cubic feet per second (cfs); three steel penstocks varying in length from 248 to 285 feet; and a powerhouse that contains two 150,000-kilowatt (kW) vertical Francis turbines for an installed capacity of 300 MW.

Cowlitz River Project operations have multi-purpose objectives: to generate electricity and to provide flood control, recreation, and downstream flows for fish habitat protection. The Cowlitz River Project is used extensively to meet much of the base demand of Tacoma customers and to fill moment-to-moment electricity demand changes in the Tacoma service area. Typically, Riffe Lake is held at an elevation 745.5 feet between December 1 and January 31 to provide storage for winter flood flows, with the objective of keeping flows below 70,000 cfs at the downstream community of Castle Rock. From February 1 to June 1, Riffe Lake is allowed to fill in an attempt to have the reservoir at, or near, full pool for the summer recreation season. Typically, the reservoir slowly drafts throughout the summer, because minimum downstream flow requirements at Mayfield are frequently higher than project inflows. Gradual drawdown to the winter pool level begins between Labor Day and October 1. These water levels are operational targets, and Tacoma's ability to meet them is influenced by the objective of meeting instream flow release levels for fish habitat protection. Tacoma tries to maintain Riffe Lake at or above elevation 767 feet from June 1 to September 1 of each year. Mayfield is operated in a run-of-river fashion, dependent entirely upon discharge from Mossyrock and inflow mainly from the Tilton River. Inflow in excess of the capacity of the turbines is spilled, resulting in a very stable reservoir elevation, typically fluctuating less than 2 to 3 feet throughout the year, although the maximum allowable elevation fluctuation is 10 feet. Operations under the Agreement would not change, except for the minimum flows provided below Mayfield (discussed latter).

Located about 2 miles downstream of Mayfield Dam are the Cowlitz Salmon Hatchery and Barrier Dam. The Cowlitz Salmon Hatchery produces coho, spring chinook, and fall chinook salmon juveniles for release to the Cowlitz River and is currently managed by the Washington DFW, with funding from Tacoma. Barrier Dam is used to direct migrating adult fish into the salmon hatchery sorting facilities, where they are sorted by species for release to onsite holding ponds or for transport offsite.

About 7.5 miles downstream of Barrier Dam is the Cowlitz Trout Hatchery. The Cowlitz Trout Hatchery is also managed by the Washington DFW, with funding from Tacoma. The hatchery is used for egg collection and incubation, and to rear sea-run cutthroat and winter and summer steelhead.

Power from the Cowlitz River Project is used by Tacoma Power to meet the energy requirements of the City of Tacoma. With the mitigation measures recommended by staff, the project would generate about 1,686,000 MWh of energy annually.

WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act (CWA),⁸ the Commission may not issue a license for a hydroelectric project unless the state water quality certifying agency has either issued a water quality certification for the project or has waived certification. Certification (or waiver) is required in connection with any application for a federal license or permit to conduct an activity which may result in a discharge into U.S. waters. Under Section 401(d) of the CWA, any conditions of the certification become conditions of the federal license or permit,⁹ and only a reviewing court may revise or delete those conditions.¹⁰

On December 9, 1999, Tacoma applied to Ecology for water quality certification of the project. Tacoma withdrew its pending water quality certificate application and refiled a new application on December 1, 2000, and again on December 5, 2001.

Ecology issued a water quality certification for the project on January 15, 2002. On March 8, 2002, the Pollution Control Hearings Board for the State of Washington issued a temporary stay of the certification until April 11, 2002.¹¹ Therefore, we are issuing the new license with an effective date of April 12, 2002.

The certification contains seven water quality conditions to ensure that the project meets state water quality standards, including a requirement for the licensee to operate the project in compliance with the Agreement (including but not limited to instream flows stipulated in the Agreement); three notification conditions, including a requirement to notify Ecology if the Agreement is reopened for any reason; one condition that stipulates when an updated application must be filed; one condition that defines future actions that are not covered by the certificate; two water quality monitoring conditions, including a requirement that all monitoring detailed in the Agreement be conducted and that additional monitoring may be required based on the monitoring results stipulated in Agreement Article 15; one reporting condition that requires reporting monitoring results to Ecology on an annual basis or as necessary; 17 construction conditions that would apply to all site-specific development or mitigation projects (i.e. use of Best Management Practices, Erosion and Sediment Control Plan, etc.) unless covered under a separate 401 water quality certification; four conditions to address emergency situations, including a spill prevention and containment plan; and eight general conditions. These conditions are included in this license in Appendix C.

SECTION 18 FISHWAY PRESCRIPTIONS

⁸ 33 U.S.C. § 1341(a)(1).

⁹ 33 U.S.C. § 1341(d).

¹⁰ See *American Rivers v. FERC*, 229 F.3d 99 (D.C. Cir. 1997).

¹¹ See Stipulation and Agreed Order of Temporary Stay at 3 (issued March 8, 2002), attached to Letter from Jonathan Feil to Commission Secretary (filed March 11, 2002).

Section 18 of the FPA¹² provides that the Commission shall require the construction, operation, and maintenance by a licensee of such fishways as the Secretaries of Commerce or the Interior may prescribe.

By letters dated August 15, 2000, and September 29, 2000, the NMFS (as delegated by the Secretary of Commerce) and the FWS (as delegated by the Secretary of Interior), respectively, filed their Section 18 prescriptions. The prescriptions addressed downstream fish passage at Mossyrock Dam and Mayfield Dam and upstream fish passage at Barrier, Mayfield and Mossyrock Dams. The prescriptions are set forth in Appendix D to this order. In most respects, they are essentially the same as Articles 1, 2, and 3 of the Agreement (Appendix A).¹³

¹² 16 U.S.C. § 811.

¹³ Based on a quick comparison, it appears that Interior's prescription differs from the Agreement in two minor respects. Interior's Prescription 2(a) includes in the third sentence two commas and the word "along" that are absent from the third sentence of Agreement Article 2(a). Interior's Prescription 2(d) includes the following two sentences at the end of the paragraph: "The Licensee shall submit the final plan to the National Marine Fisheries Service and the U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan" Agreement Article 2(d) does not contain those two sentences, and substitutes the following two sentences at the end of the paragraph: "The Commission reserves the right to require changes to the plan. Upon Commission approval, the Licensee shall implement the plan."

It also appears that Commerce's prescription differs from the Agreement in several respects. To the extent that we have been able to identify the differences, they appear to result from additional language in the Agreement that is missing from Commerce's prescription. For example, Agreement Article 1(a) includes the following phrase in item 5 of the third sentence: "not to exceed 12 months from plan approval by the Commission, unless the Licensee can establish good cause for additional time." This phrase is missing from the corresponding Article X(a) of Commerce's prescription. Similarly, the second sentence of Article 2(b) of the Agreement includes the phrase, "but not limited to," that is missing from the corresponding Article XI(b) of Commerce's prescription. Article 2(d) of the Agreement includes four sentences at the end of the paragraph concerning the submission of a draft plan and a reservation of the Commission's authority to require changes that are missing from the corresponding Article XI(b) of Commerce's prescription. Finally, Agreement Article 3(h) includes four sentences near the end of the article (again, concerning the submission of a draft plan and a reservation of the Commission's authority to require changes) that are missing from the corresponding Article XII(h) of Commerce's prescription. There may be other

Both NMFS and FWS reserved their authority under Section 18 of the FPA to prescribe additional or modified upstream and downstream fish passage measures, consistent with the adaptive management techniques employed by the Agreement, to address the uncertainty in the time frames within which anadromous fish population recovery and restoration thresholds are met and subsequent specific measures, including a ladder (or similar volitional adult passage facility) at Mayfield Dam, an adult trapping facility below Mossyrock, or an independent smolt collection facility at Riffe Lake, must be constructed. As requested by NMFS and FWS, in Article 406 of the license we have reserved our authority to require such additional or modified fish passage facilities as the Secretaries may prescribe.¹⁴

SECTION 4(e) OF THE FPA

Portions of the Cowlitz River Project are located within the Gifford Pinchott National Forest, which is under the supervision of the U.S. Forest Service.¹⁵ Section 4(e) of the FPA¹⁶ states that the Commission may issue a license for a project on a reservation only if it finds that the license will not interfere or be inconsistent with the purposes for which the reservation was created or acquired. Section 3(2) of the FPA¹⁷ defines reservations as including national forests. We find that this license will not interfere or be inconsistent with the purposes for which the Gifford Pinchott National Forest was created.

FPA Section 4(e) also requires that a license for a project located on a United States reservation must include all conditions that the Secretary of the department under

differences. Because we have no authority to modify the Section 18 prescriptions, we have included them in Appendix D without modification.

In Article 401, we reserve our authority to approve and require changes to these plans. By also approving Agreement Articles 1 through 3 in Appendix A, we have included the Agreement language that is missing from Commerce's Section 18 prescription.

¹⁴ The Agreement also contained language that reserved NMFS's and FWS's authority under Section 18 of the FPA to amend their fishway prescriptions contained in Articles 1, 2 and 3 of the Agreement

¹⁵ The project also occupies four separate parcels of federal lands managed by the U.S. Bureau of Land Management. The parcels total 58.8 acres; three of the parcels are submerged in Riffe Lake and the other parcel is located on the bank of Riffe Lake. The licensee pays annual land use charges for these lands pursuant to Section 10(e) of the FPA, 16 U.S.C. 803(e). Nothing in the record of this proceeding suggests that these federal lands are "reservations," as defined in FPA Section 3(2), 16 U.S.C. 794(2).

¹⁶ 16 U.S.C. § 797(e).

¹⁷ 16 U.S.C. § 796(2).

whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation.¹⁸ On February 14, 2002, the Forest Service, a signatory to the Agreement, timely filed its final conditions (Appendix C) for the project pursuant to FPA Section 4(e). Condition 1 requires compliance with the terms of the Agreement as a mandatory Section 4(e) condition.

In addition, the Forest Service submitted the following Section 4(e) conditions, requiring the licensee to: (1) delay implementation of any ground-disturbing actions authorized by the license on National Forest lands until the completion of any administrative appeal filed under 36 CFR Part 215;¹⁹ (2) obtain prior written approval from the Forest Service for all final design plans prior to any ground-disturbing activities on National Forest System lands; (3) obtain written approval from the Forest Service prior to making any changes in the location of any constructed project features or facilities, or in the uses of project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission that are located on or otherwise directly impact National Forest System lands; (4) consult with the Forest Service each year during the 60 days preceding the anniversary of the license; and (5) remove facilities sited on National Forest System lands and restore National Forest System lands and resources to a condition satisfactory to the Forest Service prior to surrender of the license.

THE SETTLEMENT AGREEMENT

The Agreement addresses the signatories' various concerns related to fish passage, fish production, fish habitat, water quality, instream flows, wildlife, recreation, and cultural and historic resources. Particular emphasis is placed on ecosystem integrity and the restoration and recovery of wild, indigenous salmonid runs to harvestable levels, while also providing significant improvements to area recreational facilities. The Agreement is also intended to establish an adaptive management framework for future collaborative efforts for the protection, mitigation, and enhancement of natural resources of the Cowlitz River basin.

The Agreement sets out the background, purpose, use, implementation of the Agreement and license conditions, expectations of the signatories, and procedures for amending the Agreement and resolving disputes under, withdrawal from and termination of the Agreement.²⁰ Section 2 includes key definitions used in the proposed license

¹⁸ Escondido Mutual Water Co. v. LaJolla Band of Mission Indians, 466 U.S. 765 (1984).

¹⁹ The Forest Service noted that it may require modification of its 4(e) conditions as a result of the appeal process.

²⁰ The Agreement does not provide for inclusion of these procedures in the license.

conditions.²¹ Section 6 includes guiding principals to aid the signatories in understanding and implementing the Agreement where any ambiguity in the Agreement language may occur. Appendix A of the Agreement sets out the specific protection, mitigation, and enhancement measures proposed for inclusion in the new Cowlitz River Project license.²² These conditions are included as Appendix A of this license.

Fisheries needs are met through a combination of upstream and downstream fish passage, habitat restoration and improvement, and an adaptive management program to restore natural production that is coupled with continued hatchery production at levels consistent with the recovery objectives for endangered species while also providing for sustainable fisheries.²³ To provide effective fish passage, the licensee will: provide or fund facilities and measures to improve downstream fish passage survival and collection at the head of Riffe Lake or at the Cowlitz Falls Project No. 2833 (Agreement Article 1);²⁴ provide, following studies of turbine mortality and effectiveness of the existing

²¹ For example, it defines: "fish passage survival," "fish guidance efficiency," "downstream fish passage survival rate," "wild salmonid," "pre-spawner," "recruit," "indigenous," and "natural production."

²² Section 17 lists the authorized representatives of the signatories to the Agreement. Although the Forest Service, FWS, NMFS, and Ecology are signatories, the Agreement is not intended to restrict the duties of these agencies or the Commission pursuant to the Federal Power Act, Endangered Species Act or the Clean Water Act, and explicitly recognizes that if any terms of the Agreement are inconsistent with the requirements of these acts, modifications to the Agreement may be required. See Sections 4.2, 4.3, 4.4, 11.3, and 11.4.

²³ See Agreement Section 6.1.2.

²⁴ The Agreement does not purport to require Tacoma to make modifications at the Cowlitz Falls Project to achieve 95 percent fish passage survival. Nor could we include such a condition if it did, because it would be beyond the scope of this license and must be considered in the context of the Project 2833 license. The Agreement merely requires Tacoma to (a) report on its efforts to negotiate with Lewis County PUD and BPA regarding shared funding of cooperative efforts to improve downstream fish passage and collection effectiveness at or near Cowlitz Falls, (b) identify proposed facilities and measures most likely to achieve the goal of 95 percent fish passage survival that it would fund or construct, (c) identify its plans to support on-going operation and maintenance of those facilities and measures, and (d) monitor the effectiveness of those facilities and measures. If such negotiations are not successful or if additional measures are needed, Tacoma agrees to continue to pursue other means to achieve the goal of 95 percent fish passage survival until the licensee has employed the best available technology and achieved at least 75 percent fish passage survival for all species. We note, however, that in the FEIS, staff concluded that improving downstream survival of juvenile salmonids is likely key to their recovery in the basin, and that the most logical place for such improvement to occur is at the Cowlitz Falls Project (See FEIS at 4-34-35). If

louvers, improvements to downstream fish passage at Mayfield dam that would increase fish guidance efficiency and improve downstream fish passage survival (Agreement Article 2); and provide adult upstream fish passage through trap and haul facilities until criteria for constructing volitional upstream passage measures are met, at which time Barrier Dam would be breached or a ladder provided, a ladder with sorting facilities or a tram would be constructed at Mayfield Dam, and a trap and haul facility would be constructed at Mossyrock Dam (Agreement Article 3). The licensee would also provide funding of up to \$40,000 per year for a freshwater juvenile tagging and monitoring program to gather data that would be used in determining when the volitional passage criteria are met (Agreement Article 4).²⁵ Future hatchery production and management would be consistent with the overall goal of restoring and recovering wild stocks and would include: continued funding for the operation and maintenance of the Cowlitz Hatchery Complex, consisting of the remodeled Cowlitz Salmon Hatchery, the remodeled Cowlitz Trout Hatchery, and three new satellite rearing facilities (Agreement Article 5); a Fisheries and Hatchery Management Plan, updated at 6 year intervals, that details production levels and release strategies for each stock, consistent with the priority objective of maximizing natural production of wild indigenous fish stocks and species in the basin (Agreement Article 6); a Hatchery Complex Remodel and Phase-In Plan (Agreement Article 7); and a Fisheries Disease Management Plan for the hatchery complex that would allow adult fish above Barrier dam (Agreement Article 8). Habitat restoration and improvement measures include: a Large Woody Debris Management Plan that would continue to make large woody debris available for fish habitat restoration projects (Agreement Article 9); a Gravel Augmentation Plan to augment spawning gravel below Mayfield dam (Agreement Article 10); creation of a fish habitat fund in the amount of \$3 million dollars for the purpose of fisheries habitat protection, restoration, and enhancement through acquisition, easements or restoration projects (Agreement Article 11); coordinating and encouraging the expeditious expenditure of remaining wetlands acquisition funds previously allocated by Tacoma in accordance with the 1993 Wildlife Settlement Agreement (Agreement Article 12);²⁶ minimum instream flows and

negotiations among Tacoma, Lewis County PUD, and BPA are successful, and plans are developed that would indicate that modifications to Lewis County PUD's Cowlitz Falls Project would be effective and feasible at achieving the 95 percent FPS criteria, Lewis County PUD could pursue, on its own motion or at the request of fish and wildlife resource agencies or the Commission, an appropriate amendment to the license of the Cowlitz Falls Project.

²⁵ Funding of the tagging and monitoring program would continue until implementation of the Fisheries and Hatchery Management Plan provided for in Article 6. Presumably, the plans for licensee-funded ongoing monitoring and evaluation required in the Fisheries and Hatchery Management Plan would include the necessary funding and tagging of juveniles to address these monitoring needs.

²⁶ The 1993 Wildlife Settlement Agreement was approved by the Commission July 17, 1998 (84 FERC ¶ 61,037).

pulse flows to encourage fish out-migration and to protect spawning redds (Agreement Article 13); ramping rates to protect fish from stranding (Agreement Article 14); a Fish Monitoring Plan to evaluate the effectiveness of the instream flow requirements (Agreement Article 15); and a report on measures taken to ensure compliance with the instream flows (Agreement Article 16).

To address current and future recreation needs, the licensee will: prepare a Recreation Plan that provides for additional trails, camp sites, boat launches, and other improvements (Agreement Article 17); prepare a Recreation Operation, Maintenance and Safety Plan that would ensure that construction and operation of the recreation facilities are compatible with the Cowlitz Wildlife Area management, improve boating safety, provide for the transition of existing facilities to meet the requirements of the American with Disabilities Act, and provide for Tacoma to assume responsibility for the maintenance and operation of the Mayfield Lake County Park from Lewis County (Agreement Article 18); prepare plans for expenditure of \$67,000 in years four, seven, and thirteen of the license for additional facilities to improve water access, such as parking, trails to water, ramps, and piers (Agreement Article 19); monitor recreation use at six year intervals (Agreement Article 20); compensate the Forest Service in the amount of \$5,500 each year for indirect impacts to recreation facilities in the Gifford Pinchot National Forest (Agreement Article 21); and report on efforts to negotiate the transfer of national forest and other lands for the purpose of consolidating land ownership within the Cowlitz River Project Area (Agreement Article 22).

To protect cultural resources, the licensee will prepare and implement a Cultural Resources Management Plan (Agreement Article 23). Wildlife needs will be met through continued compliance with the terms of the 1993 Wildlife Settlement Agreement among Tacoma, Washington Department of Wildlife,²⁷ and FWS (Agreement Article 24).

An adaptive management approach to implementing the Agreement is a central concept. In particular, decisions on fish passage and hatchery production are tied to various measures of progress toward salmon recovery. Under various conditions of the Agreement,²⁸ Tacoma would consult with a Fisheries Technical Committee for the purpose of assisting the licensee in the design of monitoring plans and studies, reviewing and evaluating resulting data, and decisions on adaptive management measures associated with the fisheries measures. The Fisheries Technical Committee would consist of one representative each from Tacoma, NMFS, FWS, Washington DFW, Ecology, and the Yakama Nation, and one representative from the conservation groups

²⁷ Washington Department of Wildlife is now Washington Department of Fish and Wildlife.

²⁸ Articles 1-16 of the Agreement.

(American Rivers and Trout Unlimited).²⁹ A Habitat Advisory Group, consisting of a representative from each signatory to the Agreement electing to participate in the group, would also be consulted to aid in the implementation of Article 11 of the Agreement.

With the exception of the fish passage requirements (Articles 1, 2 and 3), the Agreement provides for the submission of the plans in Appendix A to the Commission for its approval. It also includes a reservation of the Commission's authority to modify the conditions as necessary to meet the requirements of the FPA and to take into account the regional fish and wildlife program established by the Pacific Northwest Electric Power Planning and Conservation Act (Agreement Article 25).³⁰

DISCUSSION

The Commission encourages settlement agreements that resolve licensing issues in the public interest. We commend the parties, and members of our staff who assisted their discussions, for their successful effort to reach consensus on the broad range of issues involved in the operation of this project and for the development of a sound framework for a continuing collaborative approach to the management of the project in the public interest. Because the "comprehensive development" standard of Section 10(a)(1) of the FPA continues to govern regulation of a project throughout the term of the license, it is the Commission's responsibility to approve, through appropriate license amendments, all material changes to the project and its maintenance and operation.³¹ We read the Agreement as entirely consistent with this fundamental principal. In addition, it would be an unacceptable constraint on our Section 10(a)(1) responsibilities, were we not to retain (as we do in this license) the authority to initiate on our own or anyone else's motion,

²⁹ Section 12 of the Agreement defines the composition, role, and operating procedures of the Fisheries Technical Committee, which the signatories do not propose to be included in the license. Further, the signatories provided for alternative consultation requirements with the various resource agencies in the event that the Agreement is terminated.

³⁰ Articles 301 and 302 require the filing of revised exhibit drawings, final contract plans and specifications, a Quality Control Inspection Program, and authorization from the Portland Regional Engineer prior to commencing construction, to ensure construction is conducted in a safe and environmentally sound manner. Additionally, Commission approval will be required for certain other facility or operational changes to the project that may occur as a result of the monitoring conducted under the Agreement, or other aspects of the Agreement as approved. See Article 401.

³¹ The Commission's regulations, as well as the terms of the license and basic due process principles, govern the filing and public notice requirements for different types of alterations.

proceedings to amend the project license as we determine is required by the public interest, after notice and opportunity for a hearing.³²

We make one further general observation. Section 11 and 13 of the Agreement, pertaining to amending the Agreement and the resolution of disputes regarding any party's performance or compliance with the Agreement, respectively, establish procedural requirements binding the parties to the Agreement. While the signatories do not request that we include such conditions in the license and recognize the limits of the Commission's jurisdiction,³³ we reiterate that such provisions are beyond our jurisdiction, in part or total, to enforce.³⁴ Therefore, by approving the Agreement, we are not undertaking to enforce such provisions.

A. Commission Approval of Plans

Agreement Articles 1, 2, and 3 require Tacoma to file plans for downstream and upstream fish passage facilities, following approval of NMFS and FWS. To the extent these plans change project operations in a manner not contemplated by the license, we will require Tacoma, prior to implementation, to submit the plans for Commission approval.³⁵ Similarly, Articles 15 and 16 contemplates changes to the project instream flows based on monitoring results that will also require Commission approval.

B. Fish Passage

A principal controversy in this proceeding deals with fish passage and its role in the recovery of listed salmon in the basin. A critical concern for the Cowlitz Tribe is that fish be able to travel the river through natural means, which would include fish

³² Section 11 of the Agreement provides for amending the Agreement upon unanimous written consent of the parties. It also acknowledges the need for approval by the Commission or other permitting agency of any such amendment that would render the Agreement inconsistent with the terms and conditions of the new license or other regulatory approvals then in effect.

³³ The Agreement states, in pertinent part, "It is the intent of the Parties that the requirements of the proposed license articles shall be enforced by FERC and other regulatory agencies that have concurrent jurisdiction to enforce such articles. . . . The Agreement and any proposed license articles determined to be outside FERC's jurisdiction shall be enforced through the remedies available under applicable state or federal law."

³⁴ Our policy in approving settlement agreements in hydroelectric licensing proceedings was set forth in *Erie Boulevard Hydropower, L.P.*, 88 FERC ¶ 61,176 (1999). The policy is based on the principle that the Commission can only enforce those matters that fall within its jurisdiction.

³⁵ See license article 401.

ladders. The Cowlitz Tribe and Friends of the Cowlitz believe that a fish ladder should be constructed at Mayfield within 18 months of license issuance, and a ladder or other form of volitional passage be provided at Mossyrock within 5 years of license issuance. The Lower Columbia Fish Recovery Board believes that the terms of the Agreement could unduly delay needed and justified volitional passage measures for Tilton River³⁶ stocks by as much as 12 years. It recommends that volitional passage be provided at Mayfield Dam as soon as the recovery criteria specified in the Agreement are reached for the Tilton River stocks, and that volitional passage be provided at Mossyrock as soon as criteria are satisfied for either spring chinook or late-winter-run steelhead originating above Mossyrock.

Under the terms of the Agreement, downstream fish passage facilities at Cowlitz Falls dam or at the head of Riffe Lake and at Mayfield Dam will be developed and implemented to achieve 95 percent fish passage survival, while continuing to provide and maintain effective upstream fish passage at Barrier Dam, Mayfield Dam, and Mossyrock Dam through existing trap and haul facilities. Once specific criteria are met that demonstrate that self-sustaining runs in the upper basin and the Tilton River have been achieved and concerns over the introduction of fish diseases from the hatchery are resolved, Tacoma would provide permanent fish passage facilities in the form of a ladder at Barrier Dam or its removal, a ladder or tram at Mayfield Dam, and a trap and haul system or tram at Mossyrock Dam.

A primary focus of the Settlement Agreement is on the recovery of listed stocks. No listed stocks currently use the Tilton River. The FEIS identified a number of adverse impacts that could result by providing volitional passage at Barrier and Mayfield Dams before meeting the recovery criteria for listed stocks of upper basin origin, with little benefit to listed species.³⁷ Additionally, staff concluded that, given the many uncertainties associated with determining the feasibility of reestablishing anadromous fish populations upstream of Barrier, Mayfield, and Mossyrock Dams, the small increase (2 percent) in survival rates over the existing trap and haul facilities, by itself, does not

³⁶ The Tilton River is a large tributary of the Cowlitz that joins the Cowlitz River above Mayfield Dam to make the Tilton River arm of the Mayfield reservoir.

³⁷ These impacts include increased handling and sorting of hatchery and natural stocks, disease introduction to the Cowlitz Salmon Hatchery water supply, genetic introgression of hatchery and wild-origin fish, multiple exposure to turbines and reservoirs for upper basin origin adult fish, the potential for lower survival rates and migration success through Mayfield Reservoir that may have negative impacts on the restoration of anadromous salmonids, competition between non-native summer steelhead and native late-winter steelhead stock in the upper basin, and potential migration delays or failure of adult fish to migrate through a ladder as long as the one needed at this location (Mayfield Dam is 200 feet high). See FEIS at 4-38.

warrant immediate construction of volitional facilities, at an estimated cost of \$30 million.

Parties to the Agreement gave careful consideration to the measures needed to recover listed salmon, as did staff. These measures include habitat and hatchery improvements and instream flows, and shifting from trap-and-haul upstream passage facilities to volitional upstream passage facilities if and when criteria in Article 3 of the Agreement have been achieved. Volitional passage systems sought by the Friends of the Cowlitz, Cowlitz Tribe and others may ultimately be constructed, but in a logical manner based on results of studies and monitoring set forth in the Agreement and prescribed by NMFS and FWS pursuant to FPA Section 18.³⁸ Based on the available information and the support of the various federal and state resource management agencies, the Yakama Nation, several non-governmental agencies, and staff, for the identified passage and fish protection measures, we are approving the Agreement and incorporating the passage measures (as well as the other fish protection measures) into the license as requested.

C. Instream Flows

The Friends of the Cowlitz and the Cowlitz Tribe proposed variable flows that they believe would better reflect the natural hydrograph, protect salmonid rearing habitat, improve ecosystem integrity, and provide adequate flood control.³⁹ The Friends of the Cowlitz believe that the Agreement improperly favors power production over fisheries resources and flood control, and that staff's conclusions that the Settlement Agreement operations provide better flood control and greater assurance in meeting instream flow needs than their recommendations is driven by project economics.

Project economics is only one factor considered by staff. Tacoma's operational model indicates that the Friends of the Cowlitz and Cowlitz Tribe flow recommendations do not allow the reservoir to refill during most years, and, by passing the higher of daily inflows or minimum flows from October 1 to February 15, can result in a situation where minimum flows are not sustainable. The model also indicates that the proposed operations result in a higher frequency of flows approaching flood cap flows (70,000 cfs) at Castle Rock, which is located downstream of Mayfield Dam. In contrast, the Agreement flows are expected to assist migrating smolts, and to protect salmonid spawning, incubation, and rearing habitat, and would not conflict with flood control operations developed in consultation with the U.S. Army Corps of Engineers.⁴⁰ The Friends of the Cowlitz and Cowlitz Tribe proposed operations would have a substantial

³⁸ Even if we did not agree with the measures as proposed, we would be required to include Articles 1, 2 and 3 in the license pursuant to Sections 18 and 4(e) of the FPA and as a condition of the Section 401 Water Quality Certification.

³⁹ See Appendix C of the FEIS for details.

⁴⁰ See Article 303.

effect on project economics (reducing power generation by 161,880 MWhs) compared to the Agreement (which reduces power generation by 18,410 MWhs). Staff concluded that the Agreement is expected to provide equivalent or better environmental conditions at a much lower cost.

We find that operation of the project in accordance with the Agreement flows represents the best balance of the resources. Therefore, we will require Tacoma to implement the flows and ramping rates defined in the Agreement, as well as to prepare a fish monitoring plan to monitor the effectiveness of the instream flows in meeting the identified objectives.⁴¹

The Agreement would also have the Licensee monitor instream flows (Agreement Article 13) and ramping rates (Agreement Article 14) at U.S. Geological Survey gage 14238000 and provide flow records to the Commission and resource agency staff as requested. Agreement Article 16 further requires a report to be filed within two years of license issuance that contains a description of the measures taken to ensure compliance with the instream flows. Notwithstanding any requirements that may be developed in accordance with Agreement Articles 13, 14, and 16, we will need, in order to ensure compliance with the instream flows and ramping rates, for Tacoma to file an annual monitoring report by December 31 of each year following license issuance. The report, required by Article 402 in this license, shall contain the provisional USGS or equivalent daily flow records for USGS gage 14238000 and a written explanation of any instream flow deficiencies from those required by Agreement Articles 13 and 14 (Appendix A) that have occurred within the year.

D. Public Participation

In response to complaints from the Friends of the Cowlitz, the staff recommended in the FEIS that Tacoma be required to develop and implement an Information Management Plan. The Friends of the Cowlitz state that the staff's recommendation for an Information Management Plan does not adequately provide for public involvement, and improperly "freezes out" Friends of the Cowlitz and other groups from exercising their First Amendment rights to petition the Commission for scrutiny and modification of the Settlement Agreement. Their assertion is founded in their belief that there should be broader public participation on the Fisheries Technical Committee, not just scientists and representatives from parties to the Settlement Agreement.

⁴¹ Even if we did not agree with the measures as proposed, we are required to include Articles 13, 14, and 15 in the license pursuant to 4(e) of the FPA and as a condition of the Section 401 Water Quality Certification.

Nothing in staff's recommendation reduces the public's ability to seek the Commission's review of a licensee's compliance with its license.⁴² To the contrary, staff's recommendation goes beyond what is typically included in a license and increases the level of public participation and knowledge. This is accomplished by requiring that Tacoma develop a plan outlining how it would keep the public informed and seek public comments on fishery-related actions developed by the Fisheries Technical Committee. Additionally, opportunities for public comment on state and federal resource agency management actions would be provided through the respective agencies's policies and practices. Direct involvement in the Fisheries Technical Committee is not required to accomplish this objective. We are therefore requiring Tacoma to prepare the Information Management Plan recommended by staff (Article 405).

A. Arguments Concerning the FEIS and the Earlier Complaint

Friends of the Cowlitz and CPR-Fish maintain that the FEIS failed to examine Tacoma's record of non-compliance, as required by the court in Friends of the Cowlitz v. FERC.⁴³ That case involved a complaint filed by those parties with the Commission, alleging that Tacoma had violated its license by failing to maintain agreed-upon levels of anadromous fish populations in the Cowlitz River and by failing to cooperate with Washington DFW in instituting remedial measures, such as building and operating permanent fish traps and upstream and downstream fish passage facilities. The Commission dismissed the complaint, finding that the 1967 Agreement between Tacoma and Washington DFW establishing fish population levels was not a license requirement, and Tacoma had complied with all the requirements of Articles 37 and 57 of its license.⁴⁴

On judicial review, the court held that the Commission erred in summarily dismissing the complaint, because petitioners' allegations were sufficient to raise a material issue of fact that Tacoma had failed to cooperate with the fisheries agencies, as required by Article 57. However, the court also held that the Commission has virtually unreviewable discretion whether to enforce any alleged license violations, and did not abuse its discretion in declining to investigate the allegations or to hold an evidentiary hearing on the complaint. The court therefore denied the petitions for review.

⁴² See 18 CFR §385.206.

⁴³ 253 F.3d 1161 (D.C. Cir. 2001).

⁴⁴ City of Tacoma, Washington, 85 FERC ¶ 61,315 (1998), reh'g denied, 86 FERC ¶ 61076 (1999). Article 37 of the license authorized the Commission to require Tacoma to make changes to project facilities and operation for the conservation and development of fish and wildlife resources. Article 57 required Tacoma to continue to cooperate with the fishery agencies in the development of details of design, operation, and maintenance of fish facilities needed to maintain the existing runs of anadromous fish at the project and in evaluating the success of these facilities. It also required Tacoma to submit certain design drawings for Commission approval, and prohibited construction of those facilities without such approval.

Friends of the Cowlitz and CPR-Fish argue that the Commission must, nevertheless, now determine whether Tacoma violated the license, and, if so, impose penalties and sanctions. They maintain that this determination will affect the environmental baseline, as well as what fish protection measures should be required for the new license term. In support, they cite the court's observation that, in reviewing relicensing applications, the Commission is required to take into consideration an "existing licensee's record of compliance with the terms and conditions of the existing license."⁴⁵

We have reviewed Tacoma's record of compliance in this case, giving the matter additional attention in light of the court's decision. Setting aside for the moment the issues raised in the complaint, we find that, in all other respects, Tacoma has complied with the terms and conditions of its license. These findings are discussed later in this order. With regard to the complaint, we have decided that the most appropriate course of action at this juncture is to decline to investigate the allegations raised. If we believed that conducting such an investigation would provide some benefit, we would consider doing so. However, we have before us a comprehensive settlement agreement that is the product of years of negotiations and cooperative effort, in which the complaining parties were able to participate. In these circumstances, we believe that the best use of our resources is to focus on evaluating the Agreement and determining whether it adequately protects the full range of public interest factors for the new license term.

We have reviewed the allegations in the complaint, as well as Tacoma's response and other information in the record. As the court recognized, there are material issues of fact in dispute. The settlement agreement that gave rise to the complaint was not part of the license, and the failure to achieve the agreed-upon fish returns could not, in itself constitute a violation of Article 57. Rather, it could at most be considered as evidence of Tacoma's failure to cooperate with the fisheries agencies. Resolution of that issue would require a substantial investigation, and could possibly require an adjudicatory hearing. Among other things, we would have to define a standard for cooperation, consider whether the failed fish quotas were due to factors beyond Tacoma's control, and determine whether Tacoma's refusal to provide additional hatchery facilities, as Washington DFW requested, should be considered a failure to cooperate.

We would also have to consider other alleged violations of Articles 37 and 57, such as Tacoma's failure to install and operate permanent functional downstream fish traps, or to submit designs for them, in light of our 1968 order approving the construction, operation, and maintenance of moveable downstream migrant fish traps in the Mossyrock Reservoir. We would have to determine how to factor in the

⁴⁵ 16 U.S.C. § 808(a)(3)(A) (2000). See Friends of the Cowlitz v. FERC, 253 F.3d at 7439 n.15.

understanding of FWS that these traps should not be considered permanent until proven feasible through testing, as well as our 1971 order approving Tacoma's abandonment of the upstream fish facilities at Mayfield Dam, with the concurrence of Interior, Commerce, and the Washington Departments of Game and Fisheries. These determinations would take considerable resources, and would delay our decision on the relicense application and Settlement Agreement in this case. This would result in delaying needed protection, mitigation, and enhancement measures for fish and wildlife resources. More importantly, however, doing so would not significantly influence our decision in this case, because it would not alter the environmental baseline or affect our assessment of what protective measures should be included in the new license.

As explained in more detail in Eugene Water and Electric Board,⁴⁶ we use existing project operations and environmental conditions as a baseline, or starting point, for our environmental analysis in relicensing proceedings. This approach has been judicially approved as reasonable.⁴⁷ Thus, we begin with an examination of the existing project facilities and operation, and their effects on the environment as it exists at the time of relicensing. Past or ongoing environmental effects may be relevant in determining what measures may be needed for environmental protection, mitigation, and enhancement over the term of the new license. However, we do not attempt to recreate pre-project conditions or to hypothesize an environmental baseline that assumes that the project does not exist. Thus, our starting point must be the Cowlitz Project as it is currently configured, not as it might have been if additional facilities had been constructed, operated, and maintained, if such facilities had been required under the terms of the existing license.

In determining what environmental measures are appropriate for the new license term, we consider the resources as they exist now, and determine what is needed for the future to provide adequate protection, mitigation, and enhancement. Again, past effects may be relevant in determining what measures are needed. But our focus is on the resources as they exist now, and on what measures are required to protect them, mitigate for damage to them, or improve their condition in the future. We do not attempt to determine what condition the resources would be in now if things had been done differently in the past.

In Friends of the Cowlitz, the court agreed with petitioners' view that summarily dismissing their complaint on a flawed legal basis could unfairly impact the relicensing negotiations, because Tacoma could leverage the need for mitigation of the alleged infractions to gain concessions in the relicensing process. This view assumes that Tacoma did, in fact, violate its license. If we were to find no such violation, petitioners could not attempt to use that finding to require more mitigation. In other words, our

⁴⁶ 81 FERC ¶ 61,270 at pp. 62,326-27 (1997).

⁴⁷ American Rivers v. FERC, 201 F.3d 1186, 1195-99 (9th Cir. 1999).

decision could work to the benefit of either party in relicensing negotiations, depending on the result. However, those negotiations have now been completed, and an Agreement has been reached. Support for the Agreement is widespread, and includes all major parties except Friends of the Cowlitz, CPR-Fish, and the Cowlitz Tribe. In these circumstances, we think it makes more sense to use our resources for reviewing the Settlement Agreement and determining whether it adequately meets the need for resource protection measures for the new license term, rather than attempting to determine what may or may not have been required in the past.

The court decision makes it clear that, if we had simply declined to initiate an investigation or to hold a hearing on the complaint, without making any finding about possible license violations, we would have been entirely within our discretion. If we could have done so then, it necessarily follows that we may do so now. Therefore, we will exercise our discretion to decline to investigate the allegations of the complaint, and will instead focus our attention where we think it more properly belongs--on determining what measures are needed for the new license term. As discussed throughout this order, we find that the Settlement Agreement provides for adequate protection, mitigation, and enhancement of fish and wildlife resources, and represents the best balance of public interest factors for the new license term.

Because the earlier complaint raises issues of Tacoma's compliance with its license that the parties have contested and we have declined to resolve, we have decided that it would be appropriate for the new license term to focus greater attention on Tacoma's compliance with its new license requirements. To that end, we will require in Article 501 that Tacoma file a Hydropower Compliance Management Program for Commission review and approval. This should facilitate both Tacoma's compliance and the Commission staff's review of that compliance. It should also make it easier to provide a prompt response to any compliance issues that may arise during the term of the new license.

SECTION 10(J) OF THE FPA

Section 10(j)(1) of the FPA⁴⁸ requires the Commission, when issuing a license, to include conditions based on the recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act, for the protection and enhancement of fish and wildlife and their habitat affected by the project. Washington DFW, NMFS, and FWS filed a number of recommendations pursuant to Section 10(j). All that were within the scope of Section 10(j) are also provisions of the Agreement and are incorporated in the license. Although not within the scope of Section 10(j) of the FPA, the recreation facility improvements, recreation operation, maintenance, and safety plan, and the water access facility improvement recommended by Washington

⁴⁸ 16 U.S.C. § 803(j)(1).

DFW are also provisions of the Agreement and are incorporated in the license under Section 10(a) of the FPA because of the recreational benefits they would provide.

OTHER ISSUES

A. Compliance with the Northwest Power Planning Act

Friends of the Cowlitz argue that by deferring the construction of volitional adult upstream passage facilities and improved juvenile downstream passage and collection facilities, staff recommendations in the FEIS violate the conditions of the Northwest Power Planning Council's Columbia Basin Fish and Wildlife Program (Program),⁴⁹ which states that the Commission should not relicense a hydro project in the Columbia River basin without providing for "the best available means for aiding downstream and upstream passage of anadromous and resident fish."⁵⁰ They also state that the FEIS fails to require "specific plans for flows and fish facilities prior to construction;" "flows and

⁴⁹ Friends of the Cowlitz also assert that, by deferring the development of specific mitigation measures that should be required by the license until future studies are completed, staff's recommendations are inconsistent with the requirements of Confederated Tribes and Bands of the Yakima Indian Nation v. FERC, 746 F.2nd 466 (9th Cir. 1984). While Yakima clearly requires the Commission to evaluate resource impacts prior to licensing, we find nothing in that decision that would prevent the use of adaptive management to refine resource protection measures during a new license term.

The Agreement requires the development of a number of plans, some of which rely on further studies (e.g., downstream fish passage efficiency studies at Mayfield) to develop appropriate measures, and others that would rely on monitoring results to recommend additional modifications (e.g., downstream passage at Riffe Lake; upstream passage at Barrier, Mayfield, and Mossyrock; fisheries and hatchery management, and disease management) to achieve identified objectives. Some of the plans will take several years to develop and implement, and all would be continually modified as new information is obtained, consistent with the adaptive management concept that underpins the Agreement. This approach enables the Commission to assess the effectiveness of mitigation measures, fine-tune project facilities and operations, secure information that cannot be obtained prior to license issuance, and address new circumstances that may arise in the future. This is consistent with the Yakima decision (see City of Tacoma, Washington 86 FERC ¶61,311 (1999); Northern Wasco County People's Utility District, 53 FERC ¶61,438 (1990)). The record is sufficient to support a licensing decision, and it would not be in the public interest to delay the implementation of identified protection, mitigation, and enhancement measures until better information can be obtained.

⁵⁰ See Appendix B, Condition 1, in Northwest Power Planning Council, 2000 Columbia River Basin Fish and Wildlife Program. (Council document 2000-19, Portland, Oregon, December 2000).

reservoir levels of sufficient quantity and quality to protect spawning, incubation, rearing, and migration;" and "full compensation for unavoidable fish losses or fish habitat losses through habitat restoration or replacement, appropriate propagation, or similar measures consistent with the provisions of this program."⁵¹

In the FEIS, staff concluded, for the reasons stated already, that the fish passage measures identified in the Agreement represent the best available means of providing fish passage and the means to refine those measures to improve passage as new information is developed from monitoring and additional studies. Thus, the measures are consistent with the Program. Staff also concluded that the instream flows, ramping rates, fish habitat improvement measures, and hatchery management plans required by the Agreement are consistent with the Program. We concur.

The Northwest Power Act⁵² imposes on the Commission three obligations: 1) in exercising its existing statutory responsibilities, the Commission must provide "equitable treatment" to fish and wildlife; (2) at each relevant stage of its decision-making process, the Commission must take into account "to the fullest extent practicable" the Program; and (3) in carrying out the above two responsibilities, the Commission must consult with a variety of entities and to the "greatest extent practicable," coordinate its actions with other federal agencies.⁵³ Those obligations have been met.⁵⁴

The signatories to the Agreement foresaw the potential need to require alterations to project structures and operations to take the Council's Program into account as new information is developed and recite our reservation of authority to require such revisions in Article 25 of the Agreement (Appendix A).

B. Approval of the Cultural Resource Management Plan

Article 23 of the Agreement requires Tacoma to file a final Cultural Resources Management Plan (CRMP) within one year of license issuance. The CRMP is to be prepared by a qualified cultural resource specialist after consulting with State Historic Preservation Officer and affected Indian tribes. Such consultation has occurred. On June

⁵¹ Friends of the Cowlitz also state that FEIS fails to provide "specific plans for flows and fish facilities prior to construction" and "assurance that all fish protection measures are fully operational at the time the project begins operation." As staff correctly notes, the provisions do not logically apply in the context of relicensing an existing, operating project. See FEIS at A-5.

⁵² 16 U.S.C. §839, *et seq.*

⁵³ The Program is also a state comprehensive plan which the Commission must consider, but not necessarily follow, in acting on a license application. Public Utility District No. 1 of Douglas County, 27 FERC ¶61,375 (1984).

⁵⁴ See FEIS at 6-13 and A-5.

27, 2001, Commission staff circulated a final CRMP, developed by qualified archeologists, along with a Programmatic Agreement that would implement the CRMP over the term of the license. The CRMP describes the sites eligible for listing on the National Register of Historic Places, potential project effects, proposed measures for avoiding or mitigating identified effects, documentation of the consultation, a schedule for mitigating effects and conducting additional studies, and measures for dealing with undiscovered sites during the course of the license. Thus, the requirements of Article 23 have been fulfilled.⁵⁵ Therefore, Article 403 approves the final CRMP required by Article 23 and requires Tacoma to implement the Programmatic Agreement among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Washington Office of Archaeology and Historic Preservation.

The Cowlitz Tribe asserts that the CRMP does not adequately protect the cultural and spiritual interests of the Cowlitz Tribe, because it was prepared without input from the tribe and by consultants that were biased against the tribe. This assertion is unfounded. Between January 1996 and May 2000, the Cowlitz Tribe was afforded numerous opportunities to consult on the preparation and content of the CRMP, including numerous meetings, field trips, and several presentations to the Cowlitz Tribal Council by Tacoma. Comments on the CRMP were requested by Tacoma in May 2000 and January 2001 and by the Commission in June 2001. The Cowlitz Tribe did not respond. The CRMP was prepared by qualified archeologists in consultation with the Office of Archaeology and Historic Preservation, the Cowlitz Tribe, and the Yakama Nation.⁵⁶ Furthermore, the CRMP provides for continued consultation throughout the license with the affected tribes (Cowlitz Tribe and Yakama Nation) and oversight agencies,⁵⁷ which will further protect tribal cultural interests consistent with Section 106 of the National Historic Preservation Act.

⁵⁵ Pursuant to Section 7.7 of the CRMP, Tacoma would file for Commission approval, within one year of accepting the license, a monitoring plan that describes the methods and intervals at which an archaeologist will examine archaeological sites and areas that could be affected by erosion, motorized vehicle traffic, and vandalism. Article 404 requires filing of the monitoring plan for Commission approval within one year of license issuance.

⁵⁶ See FEIS at A-49.

⁵⁷ Tacoma will conduct the management of cultural resources in the project area in a spirit of partnership with the Cowlitz Tribe and Yakama Nation. Tacoma will contact representatives of the tribes during the third quarter of each calendar year to discuss the status of cultural resource management at the project, plans for management activities during the upcoming year, and changes that may be needed in management measures. Tacoma also will notify the tribes of the dates of management activities so they can participate in or visit the work as desired. See Section 7.1 of the CRMP.

THREATENED AND ENDANGERED SPECIES

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)⁵⁸ 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. Federally listed wildlife species that may occur in the project area include bald eagles (threatened) and northern spotted owls (threatened). Federally listed fish species and designated critical habitat that occur in the project area include lower Columbia River chinook salmon (threatened) and its critical habitat, lower Columbia River chum salmon (threatened) and its critical habitat, lower Columbia River steelhead trout (threatened) and its critical habitat, and southwestern Washington/Columbia River sea-run cutthroat trout (coastal cutthroat trout) (proposed threatened).

On April 25, 2001, pursuant to Section 7 of the ESA, Commission staff submitted to both the NMFS and FWS, a biological assessment (BA).⁵⁹ The BA concluded that relicensing the project in accordance with the terms of the Agreement is "not likely to adversely affect" the bald eagle and northern spotted owl, but is "likely to adversely affect" the chinook salmon and its critical habitat, the chum salmon and its critical habitat, and the steelhead trout and its critical habitat. The BA also concluded that the proposed project is "likely to adversely affect" the coastal cutthroat trout, but is not likely to jeopardize the continued existence of the species.⁶⁰

On July 3, 2001, FWS filed a letter concurring with the BA's conclusions on the bald eagle and northern spotted owl. FWS sought additional information on the coastal cutthroat trout before initiating formal conferencing on that species. On August 21, 2001, the Commission provided the FWS with the additional information available to its staff, but advised the FWS that, in light of staff's no jeopardy finding, a formal conference was not needed unless the FWS required one.⁶¹ The FWS has not requested a conference or

⁵⁸ 16 U.S.C. § 1536(a)(2).

⁵⁹ On June 2, 2000, the City of Tacoma was designated as the Commission's non-federal representative for initiating consultation with NMFS and FWS. The BA, prepared by the City of Tacoma, analyzed the effects of operating the Cowlitz River Project in accordance with the terms of the Agreement. Staff concurred with the conclusions in the BA and forwarded it to NMFS and FWS.

⁶⁰ The BA also analyzed the effects of the Agreement on lower Columbia River/southwest Washington coho salmon (a candidate for listing under the Endangered Species Act). The effects of the action on the coho salmon would be largely the same as those on the other salmonid species.

⁶¹ A formal conference is only required if an action is likely to jeopardize a proposed species or destroy or adversely modify proposed critical habitat. Staff concluded that formal conferencing was not necessary here because the measures in the Agreement and

otherwise responded. We therefore conclude that no further consultation with the FWS is required for this action.

By letter dated January 29, 2002, the NMFS responded to our request for formal consultation. NMFS requested that the Commission delay action on the license application and settlement agreement until at least September 2002 in order to coordinate formal consultation efforts with those underway at Cowlitz Falls. By letter dated February 19, 2002, Tacoma responded, stating that it is very interested in early action on its application and is anxious to begin implementing the settlement agreement. Tacoma believes that, because the settlement agreement addresses NMFS's conditions for protection of endangered species, which NMFS acknowledges in its January 29, 2002, letter, NMFS's biological opinion could and preferably would be dealt with expeditiously, thereby allowing implementation of the settlement agreement to begin. Tacoma did not agree that relicensing the Cowlitz River Project should be slowed down to wait for the Cowlitz Falls Project biological opinion. On February 25, 2002, Commission staff informed NMFS that it could not concur with its request because (a) conclusion of the consultation for Cowlitz Falls Project is not required to complete consultation on the Cowlitz River Project, (b) too much time had elapsed since initiating consultation, and (c) significant potential benefits would result from a prompt Commission action.⁶²

included within this license (Appendix A) would address the needs of the coastal cutthroat trout and assist in their recovery. These conditions include instream flows to assist in migration (Article 13) and ramping rates to protect against stranding (Article 14), means to improve downstream and upstream passage (Articles 1, 2, and 3), means to acquire and improve habitat for the species (Articles 9, 10, and 11), and changes in hatchery production and management to improve survival of smolts (Articles 5, 6, and 7) and to minimize the effects and control of hatchery diseases on coastal cutthroat trout populations (Article 8). Additionally, because of the unknown time frame for the listing of the coastal cutthroat trout, the adaptive management concepts included in these conditions could result in new information that could affect any conference recommendations the FWS may issue.

⁶² Section 7(b) of the ESA imposes strict time limits on formal consultation and requires the applicant's consent to an extension of consultation period. Formal consultation concludes within 90 days after its initiation unless extended. Within 45 days after concluding formal consultation, the FWS or NMFS (collectively the Service) is to deliver a biological opinion to the federal agency and any applicant (a 135-day time frame). If an applicant is involved, the Service and the federal agency may mutually agree to extend the consultation, provided that the Service submits to the applicant, before the close of the 90 days, a written statement setting forth: (1) the reasons why a longer period is required, (2) the information that is required to complete consultation, and (3) the estimated date on which the consultation will be completed. A consultation involving an applicant cannot be extended for more than 60 days without the consent of

In the FEIS, staff concluded that licensing the project with the environmental measures proposed in the Agreement and incorporated in this license⁶³ would benefit chinook salmon, chum salmon, and steelhead trout and their critical habitat and improve the probability of their recovery. We concur. The new license includes, in Article 15,⁶⁴ the Commission's standard reservation of authority to reopen the license for the conservation and development of fish and wildlife resources. This authority can be used to reopen the license to address ESA issues,⁶⁵ including modifying the license to address any conditions that may arise from a biological opinion that NMFS may issue on this relicensing action. Compliance with the license provisions will enhance, rather than adversely alter, the environmental status quo, and will not make irreversible or irretrievable commitments of resources which could have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures.⁶⁶

APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10 and 15 of the FPA, the staff evaluated Tacoma's record as a licensee for these areas: (A) conservation efforts, (B) compliance history and

the applicant. 16 U.S.C. § 1536(b); see also 50 C.F.R. § 402.14(e). The 135-day deadline for NMFS to issue its biological opinion was September 7, 2001.

⁶³ The measures described for the coastal cutthroat trout would also apply and benefit the chinook salmon, chum salmon and steelhead trout (see footnote 60, supra).

⁶⁴ Ordering paragraph F states that the license is subject to the articles set forth in Form L-5 (published at 54 FPC 1832-42 (1975)), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States." 90 FERC at p. 61,521. Article 15 of the Form L conditions provides:

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

⁶⁵ NMFS recommended that the Commission retain, by means of a specific ESA reopener provision and other appropriate reservations of authority, sufficient discretionary involvement or control with respect to project construction, modification, maintenance and operation under the new license to ensure full compliance with the requirements of the ESA during the term of the license. Standard Form L, Article 15, provides such authority. Thus, there is no need to include a specific reservation of authority for ESA purposes.

⁶⁶ See Section 7(d) of the ESA, 16 U.S.C. § 1536(d).

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 service, (G) cost-effectiveness of plans, (H) actions affecting the public, and (I) ancillary services.

A. Conservation Efforts

We have reviewed Tacoma's efforts to conserve electricity. We find that Tacoma has implemented programs and participated in regional programs to encourage conservation by their residential, commercial and industrial customers.

Tacoma has encouraged residential, commercial, and industrial conservation and energy efficiency by participating in Bonneville Power Administration and Washington State conservation programs. Tacoma has also developed its own programs such as:

- Zero-Interest Loan Weatherization Program
- Watt 'n Water Program
- Rebates for Efficient Water Heater Replacements
- Energy Code Enforcement
- Energy Smart Design that provided technical assistance and an awards program for new construction.
- New equipment rebates to boost interest in installing state-of-the art efficiency measures.
- Zero interest efficiency loans to encourage businesses to invest in cost-effective energy efficiency measures.
- Fort Lewis Energy Efficiency Project, which was designed to improve the efficiency of a defense installation.
- Motor Challenge Rebates for purchasing industrial sized motors meeting stringent efficiency standards.

In addition, Tacoma promotes the efficient use of energy through public education and information efforts. Tacoma is also a participant in several regional and national organizations to promote energy efficiency.

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

We have reviewed Tacoma's compliance history and ability to comply with the new license. For the reasons explained earlier, we have decided not to investigate the allegations in the complaint that was the subject of the court's decision in Friends of the Cowlitz v. FERC. Setting aside those allegations, which we decline to investigate, we find that in all other respects Tacoma's overall record of making timely filings and compliance with its license is satisfactory.

We reviewed Exhibit H of the relicense application; records of the Commission's Division of Hydropower Administration and Compliance, including the Office of Energy Projects Non-Compliance Alleged Violations Status Report and OEP Overdue/Non-compliance Status Report; OEP-IT; the Commission's Records Information Management System (RIMS); and responses to inquiries of the Commission's Portland Regional Office. Our review indicates that Tacoma has generally complied with the terms and conditions of its license. According to our records, Tacoma has made all its filings in a timely manner. Apart from the earlier complaint, which we decline to investigate, we found two instances in which Tacoma was alleged to be in non-compliance with the terms and conditions of its license. In each instance, staff conducted an investigation and determined that Tacoma was not in violation of its license.

By a March 25, 1996 letter, Senator Slade Gorton requested the Commission to respond to allegations that the Mossyrock and Mayfield Dams of the Cowlitz Project were not operated in accordance with the license during flooding conditions in November and December 1995. In a June 21, 1996 letter, the Director, Office of External Affairs, advised Senator Gorton that the licensee had operated the project as required, and that the peak flow release of 65,000 cfs was 30,000 cfs less than the peak inflow of 95,000 cfs. In accordance with the license, Tacoma had received concurrence from the U.S. Army Corps of Engineers during the flood operation.

By letter dated March 17, 1998, a private landowner requested the Commission to determine if Tacoma's wetland mitigation project might be negatively affecting his adjacent property. The landowner stated that Tacoma, through the Washington DFW (acting as a subcontractor), had diverted Oliver Creek, causing water to backup onto his property. Pursuant to a wildlife settlement agreement approved by the Commission on July 17, 1998 (84 FERC ¶ 61,037) regarding wildlife mitigation for the Cowlitz Project, Tacoma had purchased about 413 acres of land, including areas of existing wetlands, near the landowner's property. In a letter dated August 12, 1998, the Director, Office of Hydropower Licensing, concluded that Tacoma had not flooded the landowner's adjacent property. The August 12 letter stated that, based on the information submitted, the landowner's property was flooded and contained wetlands prior to Tacoma purchasing its adjacent lands, and Tacoma had done nothing to influence water levels on the landowner's property.

Based on our review, we conclude that Tacoma's overall record of compliance is satisfactory. As discussed previously in connection with the earlier complaint, we are including Article 501 to facilitate future review of Tacoma's compliance with the new license. Article 501 requires that Tacoma file a Hydropower Compliance Management Program for Commission review and approval.

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

We reviewed Tacoma's plans to manage, operate, and maintain the project safely. Tacoma proposes no change in project operation that would adversely affect the safety of the project. Based on information from the applicant on how the project affects public safety and on project records, we conclude that Tacoma's plans are adequate.

Under Part 12, Subpart C, of the Commission's regulations, Tacoma has filed an acceptable emergency action plan (EAP) and periodic updates. Part 12 requires Tacoma to continue reviewing the adequacy of the EAP and make any changes in the EAP as needed. The Mossyrock and Mayfield powerhouses are remotely controlled from the Energy Control Center located in Tacoma. Maintenance personnel are at the project during the normal weekday work schedule. The Cowlitz River Project manager oversees daily visual inspections of the project.

Under Part 12, Subpart D, Tacoma has submitted the required independent-consultant safety inspection reports and complied with the recommendations of the consultant's and the Commission's Portland Regional Office.

Tacoma's record of project safety shows that it can be expected to cooperate with the Commission's requests and to comply fully with the terms and conditions of any new license issued for the project.

D. Ability to Provide Efficient and Reliable Electric Service

We reviewed Tacoma's plans and abilities to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. We find that the applicant is capable of operating the project efficiently and reliably over the term of a new license.

Tacoma coordinates project operation with the U. S. Army Corps of Engineers to provide winter flood control at Riffe Lake (Mossyrock Dam). Mayfield Lake does not provide flood control storage. Mayfield Lake is used to even out the flows released from Mossyrock Dam. Article 303 provides for continued flood control in cooperation with the U.S. Army Corps of Engineers.

E. Need for Power

Tacoma serves approximately 143,000 customers within a service area of 180 square miles in and around the city of Tacoma. Its customers have a historical 1-hour peak demand of 1,255 MW. Of its 143,000 customers, 82,500 reside inside the city limits of Tacoma. The remaining 60,500 customers are served in locations that surround the city limits.

Tacoma relies on three general sources to satisfy power requirements: (1) power generated by Tacoma-owned and operated facilities, (2) power conserved by customers, and (3) power purchased from the Bonneville Power Administration (BPA) and others. Tacoma's owned and operated facilities are comprised exclusively of hydroelectric projects. The Cowlitz River Project accounts for 462 MW of the capacity of Tacoma's owned resources, or about 65 percent.

Tacoma anticipates robust growth in its service territory over the proposed license term. Tacoma predicts that by 2010, power demand will rise by about 12 percent from today's levels to 6,651,761 MWh. By 2030, power demand is forecast to rise by about 35 percent from today's levels to 7,983,494 MWh. The forecast of retail demand includes a reduction from conservation efforts. Tacoma has been actively involved in researching, piloting, and implementing cost-effective services in partnership with their residential, commercial and industrial customers for many years. Savings through conservation efforts have averaged approximately 35,000 MWh per year over the past 11 years.

Currently, Tacoma-owned facilities generate approximately 2,636,498 MWh, or 44.4 percent, of Tacoma customers' total energy needs. Other sources of power in Tacoma's resource portfolio include purchases from: the wholesale marketplace, 31.7 percent; BPA, 11.5 percent; other hydroelectric projects, 9.9 percent; the Columbia Storage Power Exchange, 2.3 percent; and a small landfill gas project operating in Tacoma's service territory, 0.2 percent.

According to the Pacific Northwest Utilities Conference Committee's (PNUCC's) "Northwest Regional Forecast of Power Loads and Resources for August 2001 through July 2006," dated June 2001, the Northwest does not presently have adequate resources to meet its load requirements. In the year 2002, the PNUCC forecasts a Northwest energy deficit of nearly 20 million MWh. By 2006, the last year of its latest forecast, the deficit rises to more than 24 million MWh. Given that electricity demand is forecast to increase with the overall economy past the year 2006, coupled with the generation reductions on the federal power system, the need for Northwest generation will continue to increase.

The Cowlitz River Project, with the mitigation measures recommended by staff, has an installed capacity of 462 MW and generates an average of 1,686,000 MWh of renewable energy annually. The project would continue to contribute to Tacoma's power requirements and help provide a diverse resource mix for the region.

F. Transmission Services

The staff has reviewed Tacoma's application and concludes that the existing transmission system is sufficient and no changes are necessary. Tacoma proposes no new power development at the project, but desires the continued use of the project's energy on

its system. We conclude that the existing transmission system is sufficient and no changes are necessary.

G. Cost Effectiveness of Plans

Tacoma does not propose any additional capacity or project modifications other than environmental enhancements. We concur that no project modifications are necessary at this time.

H. Actions Affecting the Public

The Cowlitz River Project generates electricity used to serve the needs of the public. Tacoma pays taxes annually to local and state governments and the project provides employment opportunities. Environmental enhancement measures and recreational improvements included in the license will generally improve environmental quality, particularly in aquatic and wildlife resources, and will have a beneficial effect on public use of project facilities for recreational purposes. Additionally, taking over ownership, operation, and management of the Mayfield Lake County Park would benefit Lewis County by alleviating expenditures estimated at \$180,000 annually, while continuing to provide for area recreation needs.

I. Ancillary Services

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 include their value as almost instantaneous load-following response to dampen voltage and frequency instability on the transmission system, system-power-factor-correction through condensing operations, 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. The ability of hydropower projects to provide ancillary services to the grid can increase the benefits of the project.

COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA⁶⁷ requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Federal and state agencies filed 67 comprehensive plans that address various resources in

⁶⁷ 16 U.S.C. § 803(a)(2)(A).

Washington. Of these, we identified and reviewed 8 plans relevant to the project.⁶⁸ No conflicts were found.

COMPREHENSIVE DEVELOPMENT

In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, the Commission considers a number of public interest factors, including the economic benefits of project power.

Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corporation*,⁶⁹ the Commission employs an analysis that uses current costs to compare the costs of the project and likely alternative power, with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the analysis is to provide general estimates of the potential power benefits and costs of a project, and reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license. In making its decision, the Commission considers the project power benefits both with the applicant's proposed mitigation and enhancement measures and with the Commission's modifications and additions to the applicant's proposal.

⁶⁸ They are: (1) Interagency Committee for Outdoor Recreation. 1985. Washington's statewide comprehensive outdoor recreation plan, sixth edition. Olympia, Washington; (2) Interagency Committee for Outdoor Recreation. 1995. State of Washington Outdoor Recreation and Habitat: assessment and policy plan 1995-2001. November 1995; (3) Interagency Committee for Outdoor Recreation. 1995. Voices of Washington. November 1995; (4) National Marine Fisheries Service and Pacific Fishery Management Council. 1978. Final environmental impact statement and fishery management plan for commercial and recreational salmon fisheries off the coasts of Washington, Oregon, and California commencing in 1978. March 1978. (5) Northwest Power Planning Council. 2000. 2000 Columbia River Basin fish and wildlife program. Council document 2000-19. Portland, Oregon. December 2000 ; (6) Pacific Fishery Management Council. 1988. Eighth amendment to the fishery management plan for commercial and recreational salmon fisheries off the coasts of Washington, Oregon, and California commencing in 1978. January 1988; (7) Washington State Department of Game. 1986. 1987 strategies for Washington's wildlife. Olympia, Washington. December 1986; and (8) Washington State Department of Community Development. Office of Archaeology and Historic Preservation. 1987. A resource protection planning process identification of prehistoric archaeological resources in the lower Columbia study unit. Olympia, Washington.

⁶⁹ 72 FERC ¶ 61,207 (1995).

To determine whether the proposed project is currently economically beneficial, we subtract the project's cost from the value of the project's power. When licensed in accordance with the Agreement conditions adopted herein, the project would produce about 1,686,000 MWh of energy annually at an annual cost of \$50,673,000 or about 30.1 mills/kWh. The staff determined the annual value of project power would be \$69,684,000 or 41.3 mills/kWh.⁷⁰ This is 11.2 mills/kWh less than the likely alternative cost of power of 41.3 mills/kWh. Staff estimates the project, with the Agreement conditions, would have an annual net benefit of \$19,011,000 or 11.2 mills/kWh. The additional environmental measure recommended by staff (Information Management Plan) in the FEIS and required by this license would increase annual cost by \$2,000; the net annual benefit would be \$19,009,000 or 11.2 mills/kWh. This additional cost does not significantly change the average annual cost or power benefits of the project as proposed by Tacoma.

Based on review and evaluation of the project as proposed by the applicant/licensee, and with the additional required measures, we conclude that operating and maintaining the project in the manner required by the license will protect and enhance fish and wildlife resources, water quality, recreational, and cultural resources. The electric power generated from renewable water power resources will be beneficial because it will continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution. With this project providing the infrastructure for a total generating capacity of 462 MW, using the Oak Ridge Competitive Electricity Dispatch model, it is estimated that approximately 263,000 metric tons of greenhouse gas emissions may be avoided annually. We find, therefore, that the Cowlitz River Project, with the required measures, is best adapted to a comprehensive plan for the use, conservation, and development of the waterway for beneficial public purposes.

LICENSE TERM

Pursuant to Section 15(e) of the FPA,⁷¹ relicense terms shall not be less than 30 years nor more than 50 years from the date on which the license is issued. Our general policy is to establish 30, 40, and 50-year terms for projects with, respectively, little,

⁷⁰ To set the value of the alternative generating resources, the FEIS used BPA's "New Resource Rate" for wholesale power. For the current year analysis, the base values are 40.6 mills per kWh for energy and \$0.87 per kW-year for capacity.

⁷¹ 16 U.S.C. § 808(e).

moderate, or extensive redevelopment, new construction, new capacity, or additional environmental measures.⁷²

In our policy statement on Use of Reserved Authority in Hydropower Licenses to Ameliorate Cumulative Impacts,⁷³ we stated that, in issuing both new and original licenses, the Commission will coordinate the expiration dates of licenses to the maximum extent possible, to maximize future consideration of cumulative impacts at the same time in contemporaneous proceedings at relicensing. The Commission's intention is to consider cumulative impacts, to the extent practicable, at the time of licensing and relicensing, and to eliminate the need to resort to the use of reserved authority. The license for the Cowlitz Falls Project No. 2833, located immediately upstream of the Cowlitz River Project, expires May 31, 2036. The effects of the two projects on fish passage and the measures employed by Lewis County PUD, BPA, and Tacoma to restore salmon in the basin are interrelated, and cumulatively affect fishery resources in the basin.

In order to facilitate parallel timing for expiration of these licenses, a 35-year license is appropriate.⁷⁴ Accordingly, the new license term for the Cowlitz River Project will be 35 years, effective April 12, 2002.

The Commission orders:

(A) This license is issued to the City of Tacoma (licensee) for a period of 35 years, effective April 12, 2002, to operate and maintain the Cowlitz River Project No. 2016. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

⁷² See *Consumers Power Company*, 68 FERC ¶ 61,077 at pp. 61,383-84 (1994).

⁷³ 59 FR 66718, 1994.

⁷⁴ While a 35-year license term would not cause the license expiration of the two projects to coincide exactly, they are reasonably close to facilitate future coordinated treatment of the Cowlitz Falls and Cowlitz River Projects. Furthermore, while the parties to the Agreement did not agree to a specific term of the new license, they indicated they would not object to a term between 35 and 40 years (see section 10.2.1 of the Agreement).

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by exhibit G included in the application for new license, filed on December 27, 1999:

Exhibits G-	FERC Drawing No. 2016-	Showing
1 of 18	1022	Project boundary
2 of 18	1023	Project boundary
3 of 18	1024	Project boundary
4 of 18	1025	Project boundary
5 of 18	1026	Project boundary
6 of 18	1027	Project boundary
7 of 18	1028	Project boundary
8 of 18	1029	Project boundary
9 of 18	1030	Project boundary
10 of 18	1031	Project boundary
11 of 18	1032	Project boundary
12 of 18	1033	Project boundary
13 of 18	1034	Project boundary
14 of 18	1035	Project boundary
15 of 18	1036	Project boundary
16 of 18	1037	Project boundary
17 of 18	1038	Project boundary
18 of 18	1039	Project boundary

(2) Project works consisting of two developments: Mossyrock and Mayfield developments; the Cowlitz Salmon Hatchery and Barrier Dam; and the Cowlitz Trout Hatchery.

The Mossyrock development consists of the following facilities: (1) a 606-foot-high (365 feet above the riverbed), 1,300-foot-long, double curvature concrete arch dam, with two 300-foot-long gravity-type concrete wing walls; (2) a rockfill embankment on the left abutment; (3) four spillway crest gates having a combined discharge capacity of 240,000 cubic feet per second (cfs) at the maximum operating pool elevation of 778.5 feet; (4) a 23.5-mile-long, 11,830-acre reservoir (Riffe Lake) at the maximum operating pool elevation of 778.5 feet, that provides a usable storage capacity of about 1,394,000 acre-feet and gross storage capacity of 1,685,100 acre-feet at the maximum designed surcharged pool elevation of 778.5 feet; (5) three steel penstocks varying in length from 248 to 285 feet; (6) a powerhouse located near the base of the dam on the right abutment that contains two 150,000 kilowatt (kW) vertical Francis turbines with a rated output of 206,000 horsepower (hp) for an installed capacity of 300 MW; (7) generator leads and transformers carrying project power from the generating units to the 230 kilovolt (kV)

bus in the Mossyrock switchyard which is part of the interconnected power system; and (8) appurtenant facilities.

The Mayfield development consists of the following facilities: (1) a 250-foot-high (200 feet above the riverbed), 850-foot-long, concrete arch and gravity dam, (2) with a 205-foot-long overflow spillway section that contains five radial gates having a combined discharge capacity of 203,000 cfs at a pool elevation of 425 feet; (3) a 13-mile-long, 2,250-acre reservoir (Mayfield Lake) at the maximum operating pool elevation of 425 feet, that provides a gross storage capacity of 133,700 acre-feet and a usable storage of 21,378 acre-feet between the maximum and minimum (415 feet) operating levels; (4) an intake tunnel contained within a separate structure located upstream of the dam on the right abutment; a 37-foot-diameter, 854-foot-long power tunnel that passes through the right abutment of the dam and terminating at a concrete forebay structure; (5) four steel penstocks varying in length from 235 to 278 feet; (6) a powerhouse located downstream of the dam on the right abutment that contains four 40,500-kW vertical Francis turbines with a rated output of 55,000 hp for an installed capacity of 162 MW; (7) a non-functioning upstream fish passage facility consisting of a 25-foot-high barrier dam that directs fish into a collection channel in the lower level of the powerhouse; (8) a fish ladder that directs fish into a 1,500-gallon hopper, in which fish were hauled to the top of a tramway on a railed carriage and discharged into the reservoir through a pipe; (9) a functioning downstream fish passage facility consisting of a series of vertical louvers constructed in a V-formation within the intake; (10) a bypass channel that directs the fish to a secondary separator, where they are guided through the dam to a holding/counting facility and emptied into the river below the powerhouse through a pipe and chute; (11) generator leads and transformers carrying project power from the generating units to the 230-kV bus in the Mayfield switchyard which is part of the interconnected power system; and (12) appurtenant facilities.

The Cowlitz Salmon Hatchery includes a fish barrier dam, fish ladder, sorting facilities, trap and haul facilities, and a hatchery complex. The fish barrier dam consists of a 400-foot-long, 28-foot-high earthen embankment connecting to a 320-foot-long, 12-foot-high, run-of-river reinforced concrete fish barrier spanning the Cowlitz River (Barrier Dam). The hatchery complex consists of a fish ladder, a fish transport channel, separation facilities, 36 holding and rearing ponds, 18 fry kettles, a surface water pumping plant, well water supply, pollution abatement ponds, visitor facilities, vehicle maintenance and garage buildings, residences, and recently constructed holding ponds for fish transported downstream from the Cowlitz Falls Hydroelectric Project (operated by Lewis County PUD, FERC No. 2833). There are right and left bank entrances to the fish ladder and an under-spillway transport channel connecting the two ladder entrances; neither the transport channel nor left bank entrance are in use because of design problems with the attraction flow.

Project No. 2016-044-37 -

The Cowlitz Trout Hatchery includes 30 raceways, three 5-acre and one 2.55-acre rearing ponds, two pollution abatement ponds, three adult holding raceways, a surface water pumping plant, well water supply, ozonation plant, and a hatchery building with 104 troughs.

The project works generally described above are more specifically shown and described by the following exhibits that also form a part of the application for license:

Exhibit A: sections 1 through 5

Exhibit F:

Exhibit F-	FERC Drawing No.2016 -	Showing
1 of 31	1001	Project vicinity map
2 of 31	1002	Mayfield general plan
3 of 31	1003	Mayfield arch and thrust blocks; plan and sections
4 of 31	1004	Mayfield cross section through the spillway
5 of 31	1005	Mayfield gravity wall
6 of 31	1006	Mayfield powerhouse at elevation 280.0
7 of 31	1007	Mayfield powerhouse at elevation 261.0
8 of 31	1008	Mayfield powerhouse longitudinal section
9 of 31	1009	Mayfield forebay & powerhouse section
10 of 31	1010	Mayfield powerhouse section through unit 4
11 of 31	1011	Mayfield fish facilities downstream migratory functional layout
12 of 31	1012	Mayfield fish facilities downstream migratory counting and holding facility

Project No. 2016-044-38 -

13 of 31	1013	Mayfield switchyard general arrangement
14 of 31	1014	Mossyrock general arrangement
15 of 31	1015	Mossyrock general sections
16 of 31	1016	Mossyrock powerhouse plan at elevation 475.0
17 of 31	1017	Mossyrock powerhouse plan at elevation 455.0
18 of 31	1018	Mossyrock powerhouse plan at elevation 433.0
19 of 31	1019	Mossyrock powerhouse plan at elevation 395.0
20 of 31	1020	Mossyrock powerhouse longitudinal section
21 of 31	1021	Mossyrock powerhouse transverse section
22 of 31	1022	Mossyrock powerhouse general arrangement
23 of 31	1023	Cowlitz transmission system one line diagram
24 of 31	1024	Cowlitz salmon hatchery site plan, sheet 1 of 2
25 of 31	1025	Cowlitz salmon hatchery site plan, sheet 2 of 2
26 of 31	1026	Salmon hatchery barrier- plan
27 of 31	1027	Cowlitz salmon hatchery plan
28 of 31	1028	Cowlitz salmon hatchery sections
29 of 31	1029	Cowlitz trout hatchery site plan
30 of 31	1030	Cowlitz trout hatchery south well facilities site plan and typical details
31 of 31	1031	Swofford Valley rearing pond

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

(C) Exhibits A, F, and G, as designated in ordering paragraph (B) above, are approved and made part of the license.

(D) This license is subject to the Settlement Agreement conditions set forth in Appendix A to this order.

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

(F) This license is subject to the conditions submitted by the Washington Department of Ecology under Section 401 of the Clean Water Act, as those conditions are set forth in Appendix C to this order.

(G) This license is subject to the conditions submitted by the U.S. Department of the Interior on September 29, 2000, and by the U.S. Department of Commerce on August 15, 2000, under Section 18 of the FPA, as those conditions are set forth in Appendix D to this order.

(H) This license is subject to the articles set forth in Form L-5 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States," 54 FPC 1792, 1799 (October 1975), and the following additional articles:

Article 201. The licensee shall pay the United States the following annual charges as determined by the Commission, effective the first day of the month in which this license is issued for the purposes of:

(A) Reimbursing the United States for the cost of administration of Part I of the Act. This annual charge will be a reasonable amount as determined in accordance with the Commission's regulations in effect from time to time. The authorized existing installed capacity for that purpose is 462 megawatts.

(B) Recompensing the United States for the use, occupancy and enjoyment of 63.87 acres of its lands, other than for transmission line right-of-way.

Article 202. Within forty-five days of the effective date of the license, the licensee shall file three sets of aperture cards of the approved Exhibit F and G drawings. The drawings must be reproduced on silver or gelatin 35 mm microfilm. All microfilm must be mounted on type D (3-1/4" x 7-3/8") aperture cards.

Prior to microfilming, the FERC Drawing Number (2016-1001 through 2016-1037) shall be shown in the margin below the title block on the approved drawing. After mounting, the FERC Drawing Number must 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 must be typed on the upper left corner of each aperture card.

Two sets of aperture cards must be filed with the Secretary of the Commission, ATTN: OEP/Division of Hydropower Administration and Compliance. A third set of aperture cards shall be filed with the Commission's Portland Regional Office.

Article 203. If the licensee's project was directly benefitted 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. Within ninety days of completion of construction of the fish passage and recreation facilities directed by any article of this license, the licensee shall file for Commission approval revised Exhibits A, F, and G, as appropriate, to show those project facilities as built.

Article 302. The licensee shall, at least 60 days prior to the commencement of construction activities under Settlement Agreement articles 1, 2 and 3, submit to the Division of Dam Safety and Inspections, Portland Regional Engineer, three copies of the final contract plans and specifications and a Quality Control Inspection Program (QCIP). The Commission may require changes in the plans and specifications and QCIP to ensure construction is conducted in a safe and environmentally sound manner. Construction may not commence until the Portland Regional Engineer authorizes the start of construction. The licensee shall file, no later than three months following completion of construction, revised exhibits and project description showing the fish passage facilities.

Article 303. The Licensee shall reserve in Mossyrock Reservoir between elevation 778.5 feet and 645.5 feet adequate space to regulate Cowlitz River floods equal to or less than the magnitude of the December 1933 flood to 70,000 cfs or less at Castle Rock, Washington. However, it is recognized that a flow of 70,000 cfs is considered to be bankfull conditions at Castle Rock. Unregulated tributary flows downstream from Mossyrock can exceed 70,000 cfs at Castle Rock, and even termination of discharge from Mossyrock will not guarantee that flows at Castle Rock will be 70,000 cfs or less. Maximum scheduled pool levels and flood regulation procedures for Mossyrock Reservoir are prescribed in the following paragraphs:

a) Beginning on October 1, Mossyrock Reservoir shall be gradually lowered from elevation 778.5 feet to reach 745.5 feet on or before December 1. At no time during that two-month period shall the pool be higher than the elevation represented by uniform evacuation of the reservoir, except temporarily when regulating a flood. Between December 1 and January 31, the reservoir shall be maintained at elevation 745.5 feet or

below, except when storage space is used to regulate floods. Between February 1 and June 1, the reservoir may be filled gradually to elevation 778.5 feet.

b) The procedure for flood operations will be, to the fullest extent feasible, to regulate the flow at Castle Rock so as not to exceed 70,000 cfs. Except as further set forth herein, discharges from Mossyrock shall not exceed equivalent maximum sustained turbine capacity, and discharges should be adjusted in conjunction with the Mayfield development in an effort not to exceed a flow of 70,000 cfs at Castle Rock. Equivalent maximum sustained turbine capacity at Mossyrock is understood to be the outflow from two turbines each operating at a unit load of 160 MW (320 MW combined load from both turbines). If less than two turbines are operational then additional discharges must be provided by the regulating outlets or spill to provide the equivalent maximum sustained discharge.

c) For post-flood evacuation, stored waters in Mossyrock Reservoir above elevation 770 feet shall be evacuated as fast as downstream channel conditions will permit, preferably not to exceed 50,000 cfs at Castle Rock, or at a lesser rate if the evacuation can be accomplished in less than three days. However, should a 50,000 cfs flow at Castle Rock jeopardize the evacuation of the storage space above elevation 770 feet, the regulated flow at Castle Rock may be increased to 70,000 cfs, the scheduled maximum. Stored flood waters at Mossyrock that have to be evacuated below elevation 770 feet shall be made at the equivalent maximum sustained turbine capacity at Mossyrock. In the case of approaching storms or other flood situations, it may be necessary to release more than the equivalent maximum sustained turbine capacity to reach the required flood control pool. The Corp of Engineers will then have the authority to request a higher discharge.

Adjustments in the operation specified by the criteria in this article may be made subject to prior approval of the authorized representatives of the Licensee and the Corps of Engineers, Department of the Army. The Licensee shall notify the Commission of any such adjustments.

The Licensee shall also provide data to the Corps of Engineers for the regulation of the Mossyrock and Mayfield developments. The Licensee shall consult with the Corps of Engineers for their data needs to assist in project flood control.

Article 401.

(a) Requirement to File Plans for Commission Approval:

Settlement Agreement Articles 1, 2 and 3 (Appendix A) require the licensee to prepare plans regarding fish passage in consultation with the Fisheries Technical Committee or, if the Agreement has become void, the U.S. Fish and Wildlife Service,

Project No. 2016-044-42 -

National Marine Fisheries Service, Washington Department of Fish and Wildlife, and Washington Department of Ecology (FTC or agencies). Each such plan shall also be submitted to the Commission for approval. These plans are listed below in the approximate sequence we anticipate they would be filed.

Settlement Article No.	Facility or Activity	Due Date from License Issuance or Otherwise Specified
Article 1	Plan for downstream fish passage and collection facilities and measures at Riffe Lake or Cowlitz Falls (if Lewis County Public Utility District concurs).	6 months
Article 2	Study plan or study results evaluating turbine mortality and the effectiveness of existing louver system at Mayfield Dam.	6 months
Article 3	Plan for studies to evaluate whether criteria for implementing effective upstream volitional passage facilities have been met.	6 months
Article 1	If necessary, a plan for further improvements to downstream passage facilities or measures at Riffe Lake or Cowlitz Falls (if Lewis County Public Utility District concurs) most likely to reach 95% FPS, based on effectiveness studies, and continued monitoring and evaluation of those facilities.	18 months from completion of new or modified facilities.
Article 2	Plan for improvements to downstream fish passage at Mayfield Dam.	3 years
Article 2	If 95% FPS has not been achieved at Mayfield Dam, plans to further improve the effectiveness of the facilities or measures, or to substitute other measures.	18 months from completion of downstream passage improvements, with additional plans at 18-month intervals if recommended by FTC.
Article 3	Design and schedule for constructing volitional upstream passage facilities.	In the first annual report filed within the first 12 years that indicates that, within the next 3 years or less, volitional passage criteria will be met for (1) any species originating in

		<p>the Tilton basin and (2) either spring chinook or late winter steelhead originating above Mossyrock Dam.</p> <p>By the end of year 12, if volitional passage criteria have been or will be met for any salmonid species in the Tilton River by year 15.</p>
Article 3	Plan to abandon volitional upstream fish passage and expend the \$15 million in the fish passage escrow account.	By year 14, if determined by the FTC or agencies and affected tribes that expenditure of escrow funds on additional measures in lieu of volitional passage is necessary and appropriate to achieve natural stock restoration.

For each plan, the licensee shall submit to the Commission 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 or changes in the project operations or facilities, including any changes required by the Commission.

(b) Requirement to File Amendment Applications:

Certain license conditions contemplate unspecified long-term changes to project operations or facilities for the purpose of mitigating environmental impacts. 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.

Settlement Article No.	Modification
Article 15 and	Modification of instream flows or pulsing flows for channel

Article 402. The Licensee shall file an annual monitoring report by December 31 of each year following license issuance that contains the provisional USGS or equivalent daily flow records for USGS gage 14238000 and a written explanation of any instream flow deficiencies from those required by Agreement Articles 13 and 14 (Appendix A) that have occurred within the year. The report should show the actual flow versus the required flow and an explanation for any deviation. If any violation of the agreement is noted, the report should discuss this in detail. The frequency and detail of the flow record reports may be modified with Commission approval and in accordance with any recommended modifications resulting from the fish monitoring plan required by Agreement Article 15 or the instream flow implementation report required by Agreement Article 16, or as otherwise provided for in Agreement Articles 13 and 14.

Article 403. The Licensee shall implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Washington Office of Archaeology and Historic Preservation, for Historic Properties that May be Affected by a License Issuing to Tacoma Power for the Continued Operation of the Cowlitz River Hydroelectric Power Project in Lewis County, Washington (FERC No. 2016)," executed on October 22, 2001, including, but not limited, to the Cultural Resources Management Plan for the project. In the event that the Programmatic Agreement is terminated, the Licensee shall continue to implement the provisions of its approved Cultural Resources Management Plan. The Commission reserves the authority to require changes to the Cultural Resources Management Plan at any time during the term of the license. If the Programmatic Agreement is terminated, the Licensee shall obtain approvals from or notify the Commission or State Historic Preservation Officer where the Cultural Resources Management Plan calls upon the Licensee to do so.

Article 404. Within one year of license issuance the Licensee shall file for Commission approval a monitoring plan that describes the methods and intervals at which an archaeologist will examine archaeological sites and areas that could be affected by erosion, motorized vehicle traffic, and vandalism as specified in Section 7.7 of the Cultural Resources Management Plan approved by Article 403 above. The Licensee shall consult with Washington Office of Archaeology and Historic Preservation, the Cowlitz Tribe and the Yakama Nation in the preparation of the plan. The Licensee will allow the agencies and Tribes 30 days to comment on the plan before filing it with the Commission for approval. The Licensee shall include in the filing to the Commission 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 or changes in the project operations or facilities, including any changes required by the Commission.

Article 405. Within six months of licensee issuance, the Licensee shall file for Commission approval, a Public Information Management Plan that describes how the Licensee will share and disseminate information and solicit public comment on implementing the provisions of the Settlement Agreement. Information to be provided shall include any recommendations and reports produced by the Fisheries Technical Committee and Habitat Advisory Group. The Licensee shall consult with parties to the Agreement and the FTC in the preparation of the plan. The Licensee shall allow the parties 30 days to comment on the plan before filing it with the Commission for approval. The Licensee shall include in the filing to the Commission 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.

Article 406. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for construction, operation, and maintenance of, such fish passage facilities as may be prescribed by the Secretaries of the Interior or Commerce under Section 18 of the Federal Power Act.

Article 407. (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 types of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the 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 (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality

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

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

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

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved 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 or K 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 or K 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.

Article 501. (1) The licensee, within 4 months of the effective date of this license, shall file a Hydropower Compliance Management Program (HCMP) for Commission approval. The HCMP shall include the following elements for each license requirement.

a. The identification of, and a schedule for, each action necessary to complete the license requirements;

b. A schedule for the start and completion of the consultation process with each resource agency required to be consulted for each action necessary to complete the license requirements; and

c. The identification of specific individuals in each agency that need to be consulted on each action necessary to complete the license requirements.

(2) The licensee shall file an annual report with the Commission on or before each anniversary of the issuance date of this license, that demonstrates the progress made toward completion of each license requirement under the schedules presented in the HCMP.

Eight copies of all submissions under this article must be filed with the Secretary of the Commission. One copy of each submission must also be filed with any agency consulted under element (1)b above.

(I) 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.

(J) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the Federal Power Act. The filing of a request for rehearing does not operate as a stay of the effective date of this

license or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this license.

By the Commission.

(S E A L)

Magalie R. Salas,
Secretary.

APPENDIX A

SETTLEMENT AGREEMENT LICENSE ARTICLES

Article 1. Downstream Fish Passage: Riffe Lake and Cowlitz Falls Collection and Passage.

a) Within six (6) months of license issuance, Licensee shall develop and submit a plan for downstream fish passage and collection at Riffe Lake and Cowlitz Falls. The Licensee shall prepare the plan in collaboration with, and subject to approval by, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. The plan shall include: 1) a report on the results of negotiations among the Licensee, Lewis County Public Utility District (licensee for the Cowlitz Falls Project, FERC No. 2833) and the Bonneville Power Administration regarding shared funding of cooperative efforts to improve downstream passage and collection effectiveness at or near Cowlitz Falls; 2) proposed facilities and measures most likely to achieve the goal of 95% Fish Passage Survival (“FPS”), as defined in the August 2000 Settlement Agreement, to be funded by the Licensee to contribute to effective downstream passage and collection at or near Cowlitz Falls and/or to be constructed by the Licensee downstream of Cowlitz Falls Dam at Riffe Lake; 3) plans to support the on-going operation and maintenance of facilities and measures for downstream passage and collection at or near Cowlitz Falls and/or at Riffe Lake each year for the term of the license; 4) plans for monitoring and evaluation of effectiveness, including determination of the combined FPS of the existing, proposed new and/or improved facilities at or near Cowlitz Falls and/or Riffe Lake; and 5) a construction and implementation timeline not to exceed 12 months from plan approval by the Commission, unless the Licensee can establish good cause for additional time. The draft plan shall be provided for 30-day review and comment to the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, to the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan either on its own or pursuant to an agreement reached among the Licensee, Bonneville Power Administration and Lewis County Public Utility District to fund cooperative efforts for passage improvements at or near Cowlitz Falls.

b) Within eighteen (18) months of completion of the new and/or modified Riffe Lake/Cowlitz Falls downstream fish passage/collection facilities required above, the Licensee shall file a report on the effectiveness of the Riffe Lake/Cowlitz Falls

downstream fish passage/collection facilities and measures, including an evaluation of the FPS achieved by the facilities and measures. If the FPS achieved has not reached 95%, the report shall include a plan and schedule providing for any further improvements to downstream passage facilities or measures as are determined by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to be most likely successful in reaching 95% FPS. The Licensee shall prepare and file the plan for further improvements in accordance with the consultation, review and approval procedures set forth above, and upon approval by the NMFS and USFWS and filing with the Commission, shall implement, or support implementation of, the improvements provided for in the plan. The plan and schedule shall provide for continued monitoring and evaluation of fish passage effectiveness. The monitoring and evaluation results shall be provided to the FTC or the agencies in a timely manner.

c) The Licensee shall implement, or support implementation of, additional downstream passage facility improvements and file additional reports at 18 month intervals in accordance with the preceding paragraph until the Licensee has employed the best available technology and achieved at least 75% FPS for all species.

Article 2. Downstream Fish Passage: Mayfield.

a) Within six (6) months of license issuance, the Licensee shall develop and file with the Commission, a study plan or study results evaluating turbine mortality and the effectiveness of the existing louver system at Mayfield Dam. The studies shall be designed and results reviewed in consultation with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The Licensee shall include with the study plan and results documentation of consultation and copies of comments and recommendations on the plan and descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall conduct the studies.

b) Within three (3) years of license issuance, the Licensee shall develop and file with the Commission, a plan for improvements to downstream fish passage at Mayfield Dam. The plan shall be developed in consultation with the FTC or agencies and shall be based upon, but not limited to, the 90% Fish Passage Report (filed as supplemental information by the Licensee in February 2000). It shall include: 1) the results of studies of turbine mortality and effectiveness of the existing louvers; 2) plans for debris handling modifications; 3) plans for changes to the bypass system; 4) a comparison of the proposed improvements with those identified in the 90% Fish Passage Report along with

a justification for any proposed improvements not included in the 90% Fish Passage Report; 5) a statement of how the proposed improvements will achieve increased Fish Guidance Efficiency (“FGE”), as defined in the August 2000 Settlement Agreement, and survival at Mayfield Dam to a level of downstream fish passage survival rate, also as defined in the August 2000 Settlement Agreement, of greater than or equal to 95% for anadromous stocks; 6) a construction and implementation schedule not to exceed one year from the date of plan approval, unless there is good cause for extending the period beyond one year; and 7) plans to evaluate the effectiveness of downstream fish passage, including FGE and the downstream passage survival rate at Mayfield Dam, upon completion of the proposed improvements. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.

c) Within eighteen months of the completion of construction of the improvements to downstream fish passage at Mayfield Dam as provided in the approved schedule, the Licensee shall file a report on the effectiveness of the modifications, including a calculation of the downstream fish passage survival rate and FGE achieved by the facility. If the downstream fish passage survival rate at Mayfield Dam has not achieved 95%, the report shall also include plans to further improve the effectiveness of the facilities and measures or to substitute other measures as described in paragraph (d) below, and to continue monitoring their effectiveness, including continued monitoring of FGE and the downstream fish passage survival rate. The Licensee shall prepare and file the plan for further improvements in accordance with the consultation, review and approval procedures set forth above. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the further improvements provided for in the plan.

d) Tacoma shall implement additional downstream passage facility modifications or measures and file additional reports at 18 month intervals in accordance with the preceding paragraph until either: 1) a 95% downstream fish passage survival rate is achieved; or 2) the National Marine Fisheries Service and U.S. Fish and Wildlife Service, in consultation with the FTC or agencies, determine that passage effectiveness and survival are high enough to support self-sustaining populations of anadromous fish stocks; that protection of anadromous fish migrating downstream at Mayfield Dam has been maximized by all reasonable measures and that adjustments to hatchery production (using then-existing facilities) and/or habitat measures will be required in lieu of further attempts to improve downstream passage at Mayfield Dam. If NMFS and USFWS elect to pursue other measures in lieu of further downstream passage improvements, the Licensee, in consultation with the FTC or agencies, shall prepare a draft plan for other

actions designed to mitigate for continued juvenile mortality at Mayfield Dam. The draft plan shall be submitted to the FTC or agencies for 30-day review and comment. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Commission reserves the right to require changes to the plan. Upon Commission approval, the Licensee shall implement the plan.

e) Tacoma shall monitor proper operation of passage facilities and evaluate effects of changed conditions on FGE and downstream fish passage survival, with a summary of results to be submitted annually to the FTC or agencies. Tacoma shall immediately report to the FTC or agencies any results indicating a significant reduction in passage effectiveness or survival, and consult with the FTC or agencies on any further improvements that may be required to maintain consistently high levels of passage effectiveness and survival in accordance with the above performance standards.

Article 3. Upstream Fish Passage: Barrier, Mayfield and Mossyrock.

a) The Licensee, in consultation with the National Marine Fisheries Service and U.S. Fish and Wildlife Service shall provide and maintain effective upstream fish passage at the Barrier Dam, Mayfield Dam and Mossyrock Dam through trap and haul facilities immediately upon license issuance, and continuing until volitional upstream passage systems have been implemented in accordance with this article.

b) Within six months of license issuance, or as soon as practicable thereafter depending on the availability of marked fish, and updated on an annual basis thereafter, the Licensee shall file with the Commission a report on adult anadromous fish traveling through the Cowlitz River Project, prepared in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as "the FTC or agencies"). The report shall include: 1) the most recent version of Tables 3, 4, and 5 from the report entitled *Contribution Rate Benchmarks for Future Runs of Spring Chinook, Fall Chinook, and Coho Produced at the Cowlitz Salmon Hatchery* that provide estimated age 3 recruits and survival equivalency that enables comparison of future broods to the benchmark run year and survival rate for each of these species, dated June 28, 2000 and filed with the Commission concurrently with the August 2000 Cowlitz River Hydroelectric Project Settlement Agreement; 2) tables estimating the annual number of adult recruits originating from the Cowlitz River basin upstream of the Toutle River, and including steelhead, cutthroat trout, and all other indigenous stocks that are produced at the hatcheries, along with an index of each stock to its benchmark values, or if not otherwise agreed, a default index of "1"; 3) a plan and schedule for studies, to be conducted at

regular intervals, to evaluate whether the following criteria for implementing effective upstream passage through volitional facilities have been met: A) adult fish in Mayfield Lake are able to choose their tributary of origin and survive Mayfield Lake transit at rates determined by NMFS and USFWS, in consultation with the FTC or agencies, to be sufficient to achieve effective upstream passage through volitional facilities; and B) as determined based on the above-described tables with respect to: (I) the number of pre-spawners arriving at the Barrier Dam, in at least 3 of 5 consecutive brood years measured, and based on the 5-year rolling average, exceeds an abundance level which indicates natural recruitment above Mayfield Dam has achieved self-sustaining levels, as determined by the National Marine Fisheries Service in consultation with the FTC or agencies; (ii) the productivity level in 3 of 5 years and the 5-year rolling average, as measured at the Barrier Dam or other Cowlitz River fish counting facilities by the recruit/pre-spawner ratio, exceeds 1.0; and (iii) the disease management plan required by Article 8 has been implemented.

c) For any annual report filed within 12 years of license issuance in which the results of the studies indicate that, within the next three years or less, the above criteria for volitional upstream passage will be met with respect to any salmonid species originating in the Tilton basin and with respect to either spring chinook salmon or late winter steelhead originating above Mossyrock Dam, the Licensee shall also include proposed preliminary designs and schedules for the construction of upstream passage systems for the Project. In the case of Barrier Dam, the proposed modifications shall provide for breaching the Barrier Dam. In lieu of breaching, a fish ladder may be constructed only if NMFS and USFWS determine, in consultation with the FTC or agencies, that a ladder is more appropriate than breaching for effective upstream passage. The proposed modifications for the Barrier Dam shall also include steps to disable the electrical field in the event of fish ladder construction or breaching the dam. In the case of Mayfield Dam, the upstream passage system proposed shall be a ladder with sorting facilities, unless prior to filing the report the NMFS and USFWS determine that a tram is more appropriate than a ladder for effective upstream passage, in which case the system proposed shall be a tram with sorting facilities. In the case of Mossyrock Dam, the passage system proposed shall be an adult trap and haul facility to facilitate adult transit above Cowlitz Falls Dam to be built before or concurrently with the upstream passage system at Mayfield Dam, unless prior to filing the report the USFWS and NMFS determine that a comparably-priced tram is more appropriate than a trap and haul facility based on studies that show fish are able to migrate through Riffe Lake, and it has also been determined that an adult upstream passage facility will be developed at Cowlitz Falls Dam. A draft report shall be provided to the FTC or agencies for review and comment. The Licensee shall include with the report documentation of consultation and copies of comments and recommendations on the report, and specific descriptions of how the FTC's and agencies' comments are accommodated by the report. The Licensee shall submit the final report to the NMFS and USFWS for approval prior to filing with the

Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the proposals in the report.

d) Upon meeting the criteria above for the construction of volitional upstream passage systems, the Licensee shall proceed expeditiously to complete the final design, permitting and construction of upstream passage systems. The final design shall be subject to the same review and approval process described in paragraph c) above. Once the report containing the final design and implementation schedule for the construction of upstream fish passage systems is approved by NMFS and USFWS and filed with the Commission, volitional upstream passage facilities shall be completed and made operational within one (1) year of meeting the criteria or approval of the final design, whichever is later, unless there is good cause for extending the period beyond one year.

e) Within five years of license issuance, the Licensee shall establish an interest-bearing escrow account in the amount of \$15 million to contribute to the total cost of constructing volitional upstream fish passage facilities. To minimize administrative cost and allow conservative growth, said escrow account may be held by the Licensee as a separate account (with Licensee being obligated to treat said account substantially similar to an escrow account), and said account may be invested, consistent with investment limitations on public agencies within the State of Washington.

f) If at any time the Licensee files a report indicating that the above criteria are not likely to be met within 15 years following license issuance with respect to listed chinook salmon or steelhead originating above Mayfield Dam, the Licensee shall consult with the FTC or agencies, using the best available data at the time, regarding factors that may be contributing to the failure to meet such criteria, and the likelihood or not that such criteria will be met for the listed stocks in the foreseeable future.

g) If preliminary or final upstream volitional fish passage design plans and implementation schedules have not been approved and filed with the Commission at the end of year 12, the Licensee must prepare and submit preliminary design plans and schedules in accordance with paragraphs c) and d) if the volitional upstream passage criteria set forth in paragraphs b) and c) have been met or are likely to be met for any salmonid species in the Tilton by year 15. The Licensee shall proceed expeditiously with final design and construction of volitional upstream passage facilities, unless otherwise directed under paragraph h) below.

h) If within 14 years of license issuance the criteria for volitional upstream passage facilities, described in b), c) and g) above, have not been met and it is determined by the FTC or agencies, and affected Tribes, with the concurrence of NMFS and USFWS, that measures in addition to those provided for in the August 2000 Settlement Agreement are necessary to restore self-sustaining, natural production of ESA-listed stocks in the Cowlitz River basin, and that expenditure of the escrow fund on such additional measures in lieu of volitional upstream facilities is necessary and appropriate to achieve natural

stock restoration, consistent with the express purpose of the license and the Settlement Agreement, and with applicable recovery plans for the listed Cowlitz River stocks, the Licensee shall submit to the Commission a plan to abandon volitional upstream passage and expend the funds in the escrow account for the purposes of protecting and promoting restoration and recovery of listed Cowlitz River stocks. The draft plan shall be submitted to the FTC or agencies for 30-day review and comment period. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Commission reserves the right to require changes to the plan. Upon Commission approval, the Licensee shall implement the plan. If the above criteria have not been met for any salmonid species in the Tilton by year 15, the Licensee shall continue monitoring fishery conditions for future construction of upstream volitional fish passage, until either the criteria are met or a decision is made to abandon upstream volitional passage and fund other necessary and appropriate measures in accordance with this paragraph.

I) Following construction of volitional upstream passage facilities, the Licensee, in consultation with the FTC or the agencies, shall monitor the effectiveness of the facilities. As deemed necessary by NMFS and USFWS, after consultation with the FTC, the Licensee shall implement such reasonable modifications as may be necessary to improve passage effectiveness.

j) Any plan required to be filed pursuant to this article shall be prepared in consultation with the FTC or agencies. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Licensee shall submit the plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.

Article 4. Juvenile Tagging and Monitoring.

The Licensee shall contribute up to \$40,000 per year (adjusted for inflation), for a freshwater juvenile tagging and monitoring program required for estimating: the number of juveniles arriving at transport facilities; their origin (natural or hatchery); the number of juveniles transported (by species); and adults arriving and transported to the upper basin. Data from the program shall be reviewed annually by the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as "the FTC or the agencies") annually and filed with the Commission after review. Funding of the tagging and monitoring program shall

continue until implementation of the Fisheries and Hatchery Management Plan, provided for in Article 6.

Article 5. Fish Production and Hatcheries.

a) The Licensee shall be responsible for funding the operation and maintenance of the Cowlitz Hatchery Complex consisting of the remodeled Cowlitz Salmon Hatchery, the remodeled Cowlitz Trout Hatchery, and three satellite rearing facilities, for the duration of this license. The principal stocks of fish to be produced are the indigenous stocks of spring chinook, fall chinook, coho, sea-run cutthroat trout, and late winter-run steelhead. Non-indigenous stocks, such as early winter and summer steelhead, may be produced, provided that production shall emphasize the recovery of indigenous stocks, and production and management of all stocks shall be consistent with that goal. The remodeled hatchery complex will accommodate a range of possible production levels, up to 800,000 pounds, and the current upper bound permitted by the ESA of 771,500 pounds. The total production level within the remodeled hatchery complex will not exceed 650,000 pounds per year for all stocks until and unless a decision has been made pursuant to Article 3 to not construct volitional upstream passage during the remaining term of the license, at which time hatchery production may be considered as part of the plan to expend the funds in the escrow account for the purposes of protecting and promoting recovery of listed stocks. The 650,000 pound limit does not include upper basin pre-smolts that are reared and ponded in the hatchery complex to avoid conflicts with listed stocks. During remodeling of the hatchery complex provided by Article 6, production will approximate the maximum possible within remodeling constraints and ESA requirements. Total annual production levels during remodeling will be established through the planning process delineated in Article 5. Any variations to these transitional production levels during the time period between license issuance and the completion of the remodeled hatchery complex will be prepared in consultation with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or the agencies”). The Licensee shall also be responsible for funding any monitoring required for adaptive management at the hatcheries, as included in the Fisheries and Hatchery Management Plan required by Article 6.

b) Through 2004, the Licensee will provide funding for 50,000 pounds of trout production. Subsequent to 2004, future trout production will be based upon a review by the FTC of the success or failure of the program and any impacts to listed stocks.

Article 6. Fisheries and Hatchery Management Plan.

Within 9 months of license issuance, the Licensee shall submit a Fisheries and Hatchery Management Plan. The plan shall be updated every 6 years, starting in year 7, of the license. The plan shall identify: a) the quantity and size of fish to be produced at the Cowlitz Hatchery Complex; b) rearing and release strategies for each stock, including upward and downward production adjustments to accommodate recovery of indigenous stocks; c) credit mechanisms for production of high quality natural stocks; d) plans for Licensee-funded on-going monitoring and evaluation; and e) a fisheries management strategy consistent with the priority objective of maximizing the natural production of wild indigenous fish stocks and species in the basin. The Licensee shall prepare the plan in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all 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 the plan. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 7. Hatchery Complex Remodel and Phase-In Plan.

Within 18 months of license issuance the Licensee shall submit a plan for the Hatchery Complex remodel. The plan shall include: a) hatchery design drawings that include decreased rearing densities and innovative practices to replicate historic out-migration size and timing; b) plans for construction scheduling; c) provision for hatchery water supply that maximizes water from existing groundwater wells and, if necessary, provides for treatment of up to 10 cfs additional river water; and d) a plan for gradual transition to innovative rearing practices. The Licensee shall prepare the plan in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all 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 require changes to the plan. Upon Commission approval, the Licensee shall implement the plan, including

any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 8. Disease Management Plan.

Within five (5) years of license issuance, the Licensee shall submit a Fisheries Disease Management Plan that defines an acceptable level of risk from *Ceratomyxa shasta* ©. *shasta*) and other diseases, and allows adult fish to be upstream of Barrier Dam. The Fisheries Disease Management Plan shall be designed to allow an appropriate level of pathogens. The plan shall include criteria for determining success or failure, as well as a review every five (5) years to see that the criteria for success are being met and a procedure and schedule for amending the plan if the criteria are not met. Plan amendments could include, but not be limited to: changes in the Fisheries and Hatchery Management Plan and changes to the hatchery water quality and/or quantity. The Licensee shall consult with fish pathology experts from the National Marine Fisheries Service, U.S. Fish and Wildlife Service and Washington Department of Fish and Wildlife and shall prepare the plan in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all 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 require changes to the plan. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 9. Large Woody Debris.

Within 1 year of license issuance, the Licensee shall submit a plan to continue to make large woody debris available for fish habitat restoration projects in the Cowlitz River basin. The large woody debris plan shall include: a) a description of the source/s of large woody debris to be made available; b) measures for transporting and delivering large woody debris within the Cowlitz River basin; c) guidelines for the use and disbursement of large woody debris for restoration projects, giving first priority to projects within the lower basin, second priority to upper basin projects, and third priority to projects outside the basin; and d) provisions for storage of large woody debris and for disposal of unused debris. The Licensee shall prepare the plan in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement

Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife, U.S. Forest Service and Washington Department of Ecology (referred to as “the FTC or agencies”). When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all 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 require changes to the plan. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 10. Gravel Augmentation.

Within 9 months of license issuance, the Licensee shall file for Commission approval a plan to augment spawning gravel below the Barrier Dam to enhance salmonid spawning habitat. The source of gravel, to the extent reasonably available, shall be just upstream of Barrier Dam. The gravel augmentation plan shall include: a) a description of plans to monitor and evaluate the effectiveness of gravel augmentation, including parameters that will be measured to determine the value of gravel placements to salmonid fish reproduction and the stability and life expectancy of such placements, and b) a plan for the discontinuation of gravel augmentation if Barrier Dam is breached, including plans to monitor the post-breach adequacy of gravel supplies and mitigate for any identified gravel shortfalls in the affected reach (Mayfield Dam to the Toutle River). The Licensee shall prepare the plan in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all 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 require changes to the plan. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 11. Fish Habitat Fund.

Within 6 months of license issuance, the Licensee shall establish a habitat fund in the amount of \$3.0 million for the purpose of fisheries habitat protection, restoration, and enhancement through acquisition, easements or restoration projects. The habitat fund may be a special or separate account held by Licensee with all accrued interest being credited to the fund. Within one year of license issuance, the Licensee shall file with the Commission a plan for the uses of the habitat fund, including: a) a statement of the priority uses and criteria for disbursement of the funds, identifying acquisition by Tacoma in fee title or by conservation easements of riparian habitat along side channels below Barrier Dam as first priority; b) a description of efforts the Licensee will make in concert with other entities to leverage the habitat fund as matching funds for other salmon recovery funding opportunities; c) plans to coordinate with Lewis County on purchases of land or easements, including any plans to fund Lewis County personnel to conduct the acquisition of land rights; d) procedures for conservation groups and others to request the Licensee's participation in restoration projects along with criteria for such participation; and e) a statement of what, if any, additional lands acquired through the habitat fund will be included within the Project boundary. The Licensee shall prepare the plan in consultation with a Habitat Advisory Group provided for in the August 2000 Settlement Agreement, or, if the Settlement Agreement has become void, in consultation with U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife, U.S. Forest Service and Lewis County. When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all 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 require changes to the plan. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 12. Coordination with Wildlife Settlement Wetlands Acquisition Fund.

Within one year of license issuance, the Licensee shall file with the Commission a report on its efforts to encourage the expeditious expenditure of remaining funds previously allocated by the Licensee in a manner consistent with the purposes of the Wildlife Settlement Agreement of 1993 (continued compliance with which is required by Article 24, below) for lowlands and wetlands acquisition and restoration and for operations and maintenance, in a manner that enhances the overall goals of fish and wildlife habitat protection and restoration. The Licensee shall prepare the report in consultation with the signatories to the 1993 Wildlife Settlement Agreement (also referred to as the Cowlitz Wildlife Coordinating Committee). The Licensee shall include with the report documentation of consultation and copies of comments and recommendations on the report. The Commission reserves the right to require the Licensee to take such additional

steps as may be appropriate in light of the report to promote habitat protection and restoration goals.

Article 13. Instream Flows.

The Licensee shall release minimum flows from the Project into the Cowlitz River for the protection and enhancement of fish and wildlife resources, riparian vegetation, aesthetic resources and water quality. Flows shall be released as follows:

a) March 1 – June 30

Minimum flow releases from Mayfield Dam shall be 5,000 cfs, unless the March 1 or later inflow forecasts indicate that this flow cannot be achieved and assure reservoir refill. A decision to reduce flows shall only be made after Tacoma has consulted with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). Once per week from March through the end of June, or as otherwise agreed with the FTC or agencies, Tacoma will conduct a 12-hour release at the lesser of 8,000 cfs or 120% of the preceding flows for juvenile fish transport flows. Natural flows (e.g., from the Tilton River) that provide the same magnitude of flow pulse may substitute for artificial flow pulsing.

b) July 1 - August 14

Minimum flow releases from Mayfield Dam shall be 2,000 cfs during this period.

c) August 15 - September 30

Minimum flow releases from Mayfield Dam shall be 2,000 cfs during this period. If Mayfield releases meet or exceed 5,000 cfs for a consecutive 5-day period as measured by daily mean flows, then flows will not be decreased below 5,000 cfs until a spawning survey, documenting redd numbers and locations in key side-channel areas at River Mile 42 and River Mile 47.5, or two other representative sites as selected by the FTC or agencies, has been performed. If the survey shows that redds are present, the level of minimum flows necessary for the remainder of the period will be established after consultation with the FTC or agencies. The established minimum flows for incubation shall not exceed the lesser of: a) eight inches of river stage height below the highest consecutive 5-day average flow as measured at the USGS gauge (Station #14238000) below Mayfield Dam, or b) 5,000 cfs.

d) October 1 - November 20

Minimum flow releases below Mayfield Dam shall be subject to the following requirements:

1) At no time shall flows released from Mayfield Dam be less than 3,500 cfs;

2) Flow releases from Mayfield Dam always shall be at a quantity adequate to provide incubation protection to redds established during the period of August 15 - September 30, as defined in Section 3 below;

3) When releases during the August 15 - September 30 period meet or exceed 5,000 cfs for a consecutive five-day period as measured by the daily mean flows, minimum flows shall be maintained at the lesser of (A) or (B) below:

A) 5,000 cfs

B) Eight inches of river stage height below the highest consecutive 5-day average flow during which active spawning occurred, as measured at the USGS gauge (Station #14238000) below Mayfield Dam.

Flow releases less than those described in Section 3 above may be established upon agreement by the FTC or agencies, following review of spawning survey data for the August 15 - September 30 period.

Tacoma shall make a good faith attempt to provide flows for the purpose of protecting spawning habitat (5,000 to 8,000 cfs) from November 1 until either November 20 or the completion of spawning, whichever comes first.

e) November 21 – February 28

Minimum flow releases from Mayfield Dam will be maintained at the lesser of:

1) eight inches of river stage height below the highest consecutive 5-day average flow during which active spawning occurred, as measured at the USGS gauge (Station #14238000) below

Mayfield Dam, or

2) 5,000 cfs, or

3) a lower flow authorized by the FTC or agencies based upon the results of spawning surveys.

Instream flows shall be monitored at the USGS gauge (Station #14238000) below Mayfield Dam or via other approved means. Results of monitoring shall be available to FERC or resource agency staff upon request from the U.S. Geological Survey (USGS) or as otherwise approved. The minimum release required may be reduced, in consultation with the FTC or agencies, when such reduction can be shown not to impact downstream salmonid redds. Flows may be temporarily modified if required by operating emergencies beyond the control of the Licensee that threaten the safety and/or stability of Project facilities, and for short periods upon agreement between the Licensee and the Washington Department of Ecology. If the flow is so modified, the Licensee shall notify the Commission and the Washington Department of Ecology as soon as practicable, but no later than ten (10) days after each such incident.

Article 14. Ramping Rate Conditions.

The Licensee shall operate the Project within the following ramping rate restrictions. Ramping rate refers to the rate of allowable stage decline. These rates apply to flows less than 6,000 cfs. The ramping rate restrictions may be modified based upon further study

and approval by the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”).

Time of Year	Daylight Rates*	Night Rates**
February 16 to June 15	No Ramping	2 inches per hour
June 16 to October 31	1 inch per hour	1 inch per hour
November 1 to February 15	2 inches per hour	2 inches per hour

*Daylight shall be defined as one hour before sunrise to one hour after sunset. This is for the protection of salmon fry.

** Night shall be defined as one hour after sunset to one hour before sunrise. This is for the protection of trout and steelhead fry.

These time restrictions will account for the lag time it takes for the fluctuation to pass through all affected fish habitat downstream to the confluence of the Cowlitz and Toutle rivers. Flow is to be measured at the USGS gauge (Station #14238000) below Mayfield Dam.

Article 15. Fish Monitoring Plan.

Within one year of license issuance, the Licensee shall develop and submit a monitoring plan to evaluate the effects of the instream flow requirements, including pulsing or channel maintenance flows, upon the fish of the Cowlitz River, in consultation with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). When a draft plan has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final plan documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final plan accommodates all comments and recommendations. If the Licensee does not adopt a recommendation, the filing shall include the Licensee’s reasons, based on Project-specific information. Upon filing, the Licensee shall implement the plan to the extent that such implementation is not contrary to Commission order or regulation and is in conformity with the CWA Section 401 water quality certification. The Commission and WDOE reserve the right to require changes to the plan. Upon Commission and WDOE approval, the Licensee shall fully implement the plan, including any changes required by the Commission or WDOE. Following Commission and WDOE approval, the plan becomes a requirement of the license, enforceable by the Commission and WDOE. If monitoring indicates that instream flows or pulsing flows for channel maintenance are inadequate, the Commission and WDOE separately reserve the right to

require modifications to the flow regime, either on their own motion or upon request of state or federal resource agencies.

Article 16. Instream Flow Implementation.

Within two years of license issuance, the Licensee shall prepare and submit a report on implementation of instream flows containing a description of measures taken to ensure compliance, including preparation and use of a training manual for licensee's staff, and any recommended modifications to operating procedures. The report shall be prepared in consultation with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as "the FTC or agencies"). When a draft report has been prepared, it shall be provided to all affected agencies and Tribes for 30-day review and comment. The Licensee shall include with the final report documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final report accommodates all comments and recommendations. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on Project-specific information. Upon filing, the Licensee shall implement any recommended modifications to the extent that such implementation is not contrary to Commission order or regulation and is in conformity with the CWA Section 401 water quality certification. The Commission and WDOE reserve the right to require changes to the recommended modifications. Upon Commission and WDOE approval, the Licensee shall fully implement the recommended modifications, including any changes required by the Commission or WDOE. Following Commission and WDOE approval, the recommended modifications become a requirement of the license, enforceable by the Commission and WDOE. If monitoring indicates that instream flows or pulsing flows for channel maintenance are inadequate, the Commission and WDOE separately reserve the right to require modifications to the flow regime, either on their own motion or upon request of state or federal resource agencies.

Article 17. Recreation Facilities.

Within one year of license issuance, the Licensee shall file with the Commission for approval, a recreation plan for the Cowlitz River Project. The plan shall include, but not be limited to, the following specific items:

- (a) A trail system on Peterman Hill built to accepted standards, of not less than 20 miles. The trail will serve non-motorized users and include parking, sanitation facilities, interpretive and regulatory signage and brochures.
- (b) A 2-mile non-motorized loop trail near Mossyrock Park, part of which will (to the extent feasible) be made ADA accessible.

- (c) An extension of the Mossyrock Park boat launch with mooring dock, including provision for seasonal ADA accessibility.
- (d) A low water boat launch at the east end of Riffe Lake.
- (e) An ADA accessible fishing platform in the vicinity of Barrier Dam.
- (f) 50 additional campsites at Taidnapam Park to be provided during years 7 to 12 of the license term.
- (g) Improvements to the road from Highway 12 to Taidnapam Park.
- (h) Add 50 additional campsites at Mossyrock Park during years 19 to 24 of the license term.
- (I) Recreation improvements to be undertaken by the State of Washington for capital improvements at Ike Kinswa State Park using \$500,000 provided by the Licensee.
- (j) Unidentified recreation improvements in the Project area undertaken by the State of Washington using \$100,000 provided by the Licensee.

The plan shall be developed in collaboration with the Interagency Committee for Outdoor Recreation, the U.S. Fish and Wildlife Service, the U.S. Forest Service, Lewis County, Washington State Parks and Recreation Commission, and the Washington Department of Fish and Wildlife. With respect to item (a), the Peterman Hill trail, the Cowlitz Wildlife Coordinating Committee, established pursuant to the 1993 Wildlife Settlement Agreement (referred to in Article 24) will provide oversight and approval of trail planning, location, construction, management and allowable impacts. The plan shall include provisions for monitoring of recreational use impacts to wildlife along and in the vicinity of this trail and define benchmarks for unacceptable wildlife impacts. The Licensee shall allow a minimum of 30 days for affected agencies and Tribes 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, and specific descriptions of how the agencies' comments are addressed by the plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons. The Commission reserves the right to require changes to the plan. No land clearing or land-disturbing activities shall begin until the Licensee is notified by the Commission that the plan has been approved and has received all necessary permits and certifications. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 18. Recreation Operation, Maintenance and Safety.

Within one year of license issuance, the Licensee shall file with the Commission an operation, maintenance and safety plan for the recreation facilities for the Cowlitz River Project. The plan shall include, but not be limited to:

- (a) A description of the oversight for trail construction and management to be provided by the Cowlitz Wildlife Area Wildlife Management Coordinating Committee, as established by the 1993 Wildlife Settlement Agreement.
- (b) A plan to work with the Lewis County Sheriff's office to improve boating safety.
- (c) An Americans with Disabilities Act (ADA) transition plan specifying improvements to be made to existing facilities to comply with ADA.
- (d) A plan for Licensee to assume ownership and all responsibility for maintenance and operation of Mayfield Lake County Park from Lewis County.

The plan shall be developed in collaboration with the Interagency Committee for Outdoor Recreation, the U.S. Forest Service, U.S. Fish and Wildlife Service, Lewis County, Washington State Parks and Recreation Commission and the Washington Department of Fish and Wildlife. The Licensee shall allow a minimum of 30 days for affected agencies and Tribes 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, and specific descriptions of how the agencies' comments are accommodated by the plan. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on Project-specific information. The Commission reserves the right to require changes to the plan. No land clearing or land-disturbing activities shall begin until the Licensee is notified by the Commission that the plan has been approved and has received all necessary permits and certifications. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 19. Water Access Facilities.

The Licensee shall file with the Commission for approval, plans for expenditure of \$67,000 in each of years four, seven and thirteen for additional facilities to improve water access, such as parking, trails to water, ramps and piers. The plans shall be developed in collaboration with the Interagency Committee for Outdoor Recreation, the U.S. Forest Service, the U.S. Fish and Wildlife Service, Lewis County, Washington State Parks and Recreation Commission and Washington Department of Fish and Wildlife. The Licensee shall allow a minimum of 30 days for affected agencies and Tribes to comment and to make recommendations prior to filing the plans with the Commission. The Licensee shall include with the plans documentation of consultation and copies of comments and recommendations, and specific descriptions of how the agencies' comments are accommodated by the plans. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on Project-specific information. The Commission reserves the right to require changes to the plans. No land clearing or land-disturbing activities shall begin until the Licensee is notified by the Commission that the plans have been approved and has received all necessary permits and certifications. Upon Commission approval, the Licensee shall implement the plans, including any

changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 20. Recreation Reporting.

The Licensee shall monitor recreation use of the Project area using protocols developed in consultation with the Interagency Committee for Outdoor Recreation, the U.S. Forest Service and Lewis County. The recreation survey shall begin within six (6) years of the issuance date of this license and be conducted every six (6) years thereafter during the term of the license and shall, at a minimum, include the collection of one calendar year of annual recreation use data every six (6) years. The Licensee shall file on April 1 of every sixth (6th) year after the initial filings, a report with the Commission on the monitoring results. The Licensee shall allow a minimum of 30 days for affected agencies and Tribes to comment and to make recommendations prior to filing the report with the Commission. The report shall satisfy the Commission's requirements for filing the Form 80 recreation report (18 CFR Section 8.11).

Article 21. Forest Service Facilities.

Licensee shall pay annually to the U.S. Forest Service the amount of \$5,500 by October 1 of each year in compensation for impacts to recreation facilities in the Gifford Pinchot National Forest. Beginning in the seventh (7th) year of the license term, and every 6 years thereafter, this amount shall be adjusted for inflation as provided in the August 2000 Settlement Agreement. Upon agreement between the Forest Service and Licensee, services equivalent in value may be provided in lieu of the annual compensation payment. Licensee shall file with the Commission an annual report documenting its contribution to Forest Service recreation facilities during the preceding year, which report shall be based on information from the Forest Service regarding the use of funds and/or services for these facilities.

Article 22. Forest Service Report.

Within one year of license issuance, the Licensee shall file with the Commission a report, prepared in consultation with the Forest Service, documenting Licensee's efforts to negotiate the transfer of Forest Service and other lands for the purpose of consolidating land ownership within the Cowlitz River Project area. The Commission reserves the right to require additional reports on the progress of such negotiations should they not be concluded within one year of license issuance.

Article 23. Cultural and Historic Resources.

Within 1 year of license issuance, the Licensee shall file for Commission approval a Cultural Resource Management Plan prepared by a qualified cultural resource specialist after having consulted with the SHPO and affected Indian tribes. The plan shall include the following items: a) a description of each discovered property indicating whether it is listed on or eligible to be listed on the National Register of Historic Places; b) a description of the potential effect on each discovered property; c) proposed measures for avoiding or mitigating effects; d) documentation of the nature and extent of consultation; and e) a schedule for mitigating effects and conducting additional studies. The Commission reserves the right to require changes to the plan. The Licensee shall not begin land-clearing or land-disturbing activities, other than those specifically authorized in this license until informed by the Commission that the requirements of this article have been fulfilled. The Commission reserves the right to require changes to the proposed modifications or measures. Upon Commission approval, the Licensee shall implement the proposed modifications or measures, including any changes required by the Commission. Following Commission approval, the plan becomes a requirement of the license, enforceable by the Commission.

Article 24. Wildlife.

The Licensee shall comply with the terms of the settlement agreement among the City of Tacoma, the State of Washington Department of Wildlife (now the Washington Department of Fish and Wildlife), and the U.S. Fish and Wildlife Service regarding wildlife mitigation for the Cowlitz River Project as set forth in the Licensee's October 24, 1994 filing. The Licensee shall file a monitoring report by May 1 annually, which shall incorporate a report from the Washington Department of Fish and Wildlife, as manager of the lands, describing the implementation of its current management plan. Monitoring reports shall contain any proposed significant changes to the plan for Commission approval. Prior to filing annual reports with the Commission, the Licensee shall provide a draft copy of the report to the Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service and Lewis County and give these agencies and Lewis County at least 30 days to review and make comments and recommendations on the report. The report shall contain copies of the Licensee's transmittal cover letters to the agencies and Lewis County requesting comments and any comments provided. Should the Licensee disagree with a comment or recommendation, the Licensee shall explain its disagreement in its report based on Project-specific information.

Article 25. Reservation of Commission Authority.

The Commission reserves the authority to order, upon its own motion or upon the recommendation of federal and state fish and wildlife agencies, affected Indian Tribes, and the Northwest Power Planning Council, alterations of Project structures and operations to take into account to the fullest extent practicable the regional fish and

Project No. 2016-044-70 -

wildlife program developed and amended pursuant to the Pacific Northwest Electric Power Planning and Conservation Act.

APPENDIX B

FPA SECTION 4(e) TERMS and CONDITIONS

I. GENERAL

License articles contained in the Federal Energy Regulatory Commission's Standard Form L- 2 issued by Order No. 540, dated October 31, 1975, cover those general requirements that the Secretary of Agriculture, acting by and through the Forest Service, considers necessary for adequate protection and utilization of the land and related resources of the Gifford Pinchot National Forest. Under authority of section 4(e) of the Federal Power Act (16 U.S.C. 797(e)), the following terms and conditions are deemed necessary for adequate protection and utilization of Gifford Pinchot National Forest System lands and resources. These terms and conditions are based on those resources and management requirements enumerated in the Organic Administration Act of 1897 (30 Stat. 1 1), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), and any other law specifically establishing a unit of the National Forest System or prescribing the management thereof (such as the Wilderness Act or Wild and Scenic Rivers Act), as such laws may be amended from time to time, and as implemented by regulations and approved Land and Resource Management Plans prepared in accordance with the National Forest Management Act. Therefore, pursuant to section 4(e) of the Federal Power Act, the following conditions covering specific requirements for the protection and utilization of National Forest System lands shall also be included in any license issued.

II. FOREST SERVICE PROVISIONS

Condition No. 1 - Settlement Agreement

The licensee shall completely and fully comply with all the terms of the Cowlitz River Hydroelectric Project Settlement Agreement. This condition is premised on the expectation that the Commission will incorporate the settlement agreement, substantially unmodified, into the new license. The Forest Service reserves the authority to issue additional terms and conditions in the event the settlement is not incorporated into the new license.

Condition No. 2 - Implementation and Modification of Forest Service Conditions

The licensee shall not commence implementation of ground disturbing activities authorized by the license on National Forest System Lands of the Gifford Pinchot National Forest until Forest Service completion any administrative appeal filed under 36 CFR Part 215 regarding terms and conditions issued by the Forest Service under Section 4(e) of the Federal Power Act. providing appeal rights of Forest Service 4(e) conditions.

Project No. 2016-044-72 -

The Forest Service may require modification of its 4(e) conditions as a result of the final agency decision regarding such an appeal.

Condition No. 3 - Forest Service Approval of Final Design

Before the Licensee implements any ground disturbing activities on National Forest System land, the Licensee shall obtain the prior written approval of the Forest Service. As part of such prior written approval, the Forest Service may require adjustments in final plans and facility locations to preclude or mitigate impacts and to assure that the project is compatible with on-the-ground conditions. Should such adjustments deemed necessary by the Forest Service, the Commission, or the Licensee constitute a substantial change, the licensee shall follow the procedures of Article 2 of the license. Any changes to the license made for any reason pursuant to Article 2 or Article 3 shall be made subject to any new terms and conditions of the Secretary of Agriculture made pursuant to section 4(e) of the Federal Power Act.

Condition No. 4 Approval of Changes After Initial Construction

Notwithstanding any license authorization to make changes to the project, the licensee shall secure written approval from the Forest Service prior to making any changes in the location of any constructed project features or facilities, or in the uses of project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission that are located on or otherwise directly impact National Forest System Lands. Following receipt of such approval from the Forest Service, and at least 60 days prior to initiating any such changes or departure, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the Forest Service for such changes. The licensee shall file an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This condition does not relieve the Licensee from the requirements of final USDA Forest Service Term and Condition Number 2 or 3 set out above.

Condition No. 5 - Consultation

Each year during the 60 days preceding the anniversary date of the license, the Licensee shall consult with the Forest Service with regard to measures needed to ensure protection and development of the natural resource values of the project area on or affecting National Forest System lands of the Gifford Pinchot National Forest. Within 60 days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the Forest Service.

Condition No. 6 - Project Surrender or Abandonment and Restoration of National Forest System Lands

Prior to any surrender of this license, the licensee shall remove facilities sited on National Forest System Lands and restore National Forest System lands and resources to a condition satisfactory to the Forest Service. Within one year of filing for surrender of license, or within 90 additional days after project generation has ceased for a period exceeding one year, the Licensee shall prepare in consultation with the Forest Service, and file with the Director, Office of Hydropower Licensing, a facilities removal and restoration plan approved by the Forest Service. The plan shall include an implementation schedule and shall identify the measures to be taken to remove all project facilities and fully restore National Forest System lands and resources to a condition satisfactory to the Forest Service and shall establish a surety bond to ensure performance of the removal and restoration measures.

The licensee shall implement the plan in accordance with the approved schedule. Failure to immediately initiate removal or restoration measures, or to otherwise complete actions within the time frame established by the authorized Forest Service officer is cause for the Forest Service to issue a demand letter to the Surety for the amount due under the bond. Payment by the surety of the amount required by the bond is due upon receipt of the demand letter. In lieu of payment, the Surety may perform the remediation work required under the written instructions from the authorized Forest Service officer within the time frame set forth in the schedule.

APPENDIX C

WASHINGTON DEPARTMENT OF ECOLOGY
WATER QUALITY CERTIFICATION CONDITIONS

In view of the foregoing and in accordance with 33 U.S.C. 1341, Chapter 90.48 RCW and Chapter 173-201A WAC, certification is granted to the Applicant subject to the following conditions:

A. Water Quality Standard Conditions:

1. Nothing in this certification shall absolve the Applicant from liability for pollution and any subsequent cleanup of surface waters or sediments occurring as a result of project construction or operations.
2. The Cowlitz River waterbody segment from the mouth of the Cowlitz to the base of Mayfield Lake Dam (RM 52.0) is a Class A water of the state. Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC) or sediment quality standards (Chapter 173-204 WAC) unless otherwise authorized by Ecology.
3. The Cowlitz River waterbody segment from the upstream end of Riffe Lake dam (RM 52.0) to the headwaters is a Class AA water of the state. Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (173-201A WAC) or sediment quality standards (173-204 WAC) unless otherwise authorized by Ecology.
4. Riffe Lake Reservoir and Mayfield Lake Reservoir are Lake Class waters of the state. Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (173-201A WAC) or sediment quality standards (173-204 WAC) unless otherwise authorized by Ecology.
5. The Cowlitz River, waterbody segment #WA-26-1040, has been identified on the current 303(d) list as exceeding state water quality standards for arsenic. Operation of the proposed Project shall not result in further exceedances of this standard.
6. In the event of changes in or amendments to the state water quality standards, Chapter 173-201A, or changes in or amendments to the state Water Pollution Control Act, Chapter 90.48, or changes in or amendments to the Federal Clean Water Act, such provisions, standards, criteria or

requirements shall also apply to this Project and any attendant agreements, orders, or permits.

7. The Applicant shall operate this project in a manner to comply with the Agreement including but not limited to required instream flows as described in the Agreement and so as to support fisheries in the river.

B Notification Conditions:

1. The Applicant shall notify Ecology's SWRO Federal Permit Coordinator, PO Box 47775, Olympia WA 98504-7775, 360.407.6926, in the event that the Agreement is reopened for any reason.
2. The Applicant shall immediately notify Ecology in the event of a spill of hazardous substances or the discharge of polluting matter. Notification shall be made to Ecology's SWRO Spill Response Team, (360) 407-6300.
3. The Applicant shall immediately notify Ecology's SWRO Federal Permit Coordinator of any and all violations of state water quality standards. The notification shall include a description of the possible cause(s) of the exceedance, measures taken to reduce or eliminate the exceedance, and actions planned or underway to prevent reoccurrence.

C. Duration of Certification:

1. The Applicant shall reapply with an updated application if the information contained in the Public Notice is voided by subsequent submittals to the federal agency. Any future action at this Project location, emergency or otherwise, that is not defined in the public notice, or has not been approved by Ecology, is not authorized by this Order. All future actions shall be coordinated with Ecology for approval prior to implementation of such action.

D. Further Actions Not Covered by This Notice:

1. Any future action at this Project location, emergency or otherwise, that is not defined in the public notice, has not been approved by Ecology as having reasonable assurance of compliance with water quality requirements.

E. Monitoring Conditions:

1. All monitoring shall be conducted as detailed in the Agreement and shall include monitoring for water quality of total dissolved gas, dissolved oxygen, temperature, and pH at a minimum. Additional monitoring may be required by Ecology based on the results of monitoring and for site-specific projects and fisheries issues as necessary as set out in Article 15 of the Agreement.
2. The Applicant shall submit all Water Quality Assurance Project Plans or monitoring plans to Ecology's SWRO Federal Permit Coordinator. Plans should be submitted at least thirty (30) days prior to the start of the monitoring in order to give Ecology sufficient time for review and approval. These plans shall include the following information at a minimum:
 - a) Map of sample locations (background, and distance in feet upstream and downstream of Project facilities);
 - b) parameter(s) to be monitored;
 - c) sample methodology;
 - d) units of measurement; and,
 - e) sample frequency.

Any changes to the water quality monitoring plan requirements must be approved in writing by Ecology. The Applicant shall submit all Water Quality Assurance Project Plans to Ecology's SWRO Federal Permit Coordinator. Proposed changes should be submitted at least thirty (30) days prior to the start of the monitoring in order to give Ecology sufficient time for review and approval.

F. Reporting Conditions:

1. The Applicant shall provide to Ecology on an annual basis or as necessary, a report on all water quality monitoring, sampling and analysis conducted in association with the project. The reports shall be submitted to Ecology's SWRO Federal Permit Coordinator.

G. Construction Conditions:

While the existing Project in and of itself will not require construction, all site-specific development or mitigation projects proposed under this relicensing must meet the conditions below unless covered under a separate 401 water quality certification:

1. A Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control (ESC) Plan must be developed prior to commencement of construction activities. During construction adjustments to the plan(s) and Best Management Practices (BMPs) may be necessary to successfully control off-site movement of material.
2. All projects must apply for an NPDES permit for construction activities as required by Washington law, including RCW 90.48.
3. The development site shall be clearly marked/staked prior to construction. Clearing limits, travel corridors and stockpile sites shall be clearly marked. Sensitive areas to be protected from disturbance shall be delineated so as to be clearly visible to equipment operators. Equipment shall enter and operate only within the delineated clearing limits, corridors and stockpile areas.
4. Work in or near the waterbody shall be done using Best Management Practices so as to minimize turbidity, erosion, and other water quality impacts.
5. Erosion control devices (e.g., filter fences, hay bales, etc.) suitable to prevent exceedance of state water quality standards shall be in place before starting project construction and shall be maintained throughout construction.
6. Periodic inspection and maintenance of all erosion control structures shall be conducted no less than every 7 days from the start of the project to site stabilization. Additional inspections shall be conducted during and/or after rainfall events to ensure erosion control measures are working properly. Any damaged structures shall be immediately repaired. If it is determined during the inspection that additional measures are needed to control stormwater and erosion, they shall be implemented immediately.
7. A contingency plan shall be developed detailing actions to be taken in the event of adverse weather conditions or other foreseeable undesirable conditions.

8. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working areas shall not be discharged into state waters. The Applicant shall set up a designated area for washing down equipment.
9. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in order to prevent contamination of surface waters.
10. The Applicant shall comply with all water quality-related requirements and Best Management Practices included in any other required permit or Order.
11. All excavated material shall be disposed of above the 100-year floodplain and shall be contained so as to prevent its re-entry into waters of the state.
12. Turbid water generated from construction activities, including turbid dewatering water, shall not be discharged directly to waters of the state. Turbid water shall be pumped to an upland area to allow the turbid water to settle or filter into the ground. The discharge from the upland areas shall meet state water quality criteria at the point of discharge.
13. Temporary sediment traps shall be periodically cleaned out and the settled sediments removed from the stream channel before removing any stream diversion system and returning the flow of the Cowlitz River to its natural channel. Settled sediments shall not be allowed to enter the Cowlitz River due to water or runoff flows that may occur after construction is completed.
14. The waters of the Cowlitz River and tributaries, Riffe Lake, and Mayfield Lake shall not come in contact with the concrete outlet structure while the concrete is curing. All concrete shall be poured in the dry, or within the confined waters not being dewatered. Any diversion system shall not be removed until after the concrete has cured for at least 7 days.
15. A separate area shall be set aside, which does not have any possibility of draining to surface waters, for the wash out of concrete delivery trucks, pumping equipment, and tools.
16. All earth areas adjacent to the Cowlitz River, Riffe Lake, or Mayfield Lake which have been exposed or disturbed are to be graded to a stable grade, seeded with a suitable erosion control seed mix which includes native grasses and forbs, and protected from erosion with straw mulch or equivalent within seven (7) days of project completion. Native trees and shrubs are also recommended for slope stabilization.

17. All stormwater facilities shall be designed to the standards contained in the most recent version of the Ecology “Stormwater Management Manual for Western Washington”.

H. Emergency/Contingency Measures:

All site-specific projects proposed under this relicensing must meet the conditions unless covered under a separate 401 water quality certification:

1. The Applicant shall develop spill prevention and containment plans for the projects, and shall have spill cleanup materials available on site.
2. 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.
3. If at any time during work the Applicant finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the Applicant shall immediately notify the Ecology’s Southwest Regional Spill Response Office at (360) 407-6300.
4. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant shall immediately take the following actions:
 - a) Cease the activity causing the pollution.
 - b) Assess the possible cause(s) of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
 - c) In the event of finding distressed or dying fish, the Applicant shall collect fish specimens and water samples in the affected area and, within the first hour of such conditions, make every effort to have the water samples analyzed for dissolved oxygen and total sulfides.
 - d) 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 cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall

include proper disposal of any spilled material and used cleanup materials.

- e) In the event of a fish kill, immediately notify Ecology's Southwest Regional Spill Response Office at (360) 407-6300, the SWRO Federal Permit Coordinator, and Washington Department of Fish and Wildlife. Notification shall include a description of the nature and extent of the problem, any actions taken to correct the problem, and any proposed changes in operations to prevent further problems.

I. General Conditions:

1. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in this Order.
2. Ecology retains continuing jurisdiction to make modifications hereto through supplemental or amended Order, if it appears necessary to further protect the public interest and as stated in Section 11.3 of the Agreement.
3. The Applicant shall construct and operate the project in a manner consistent with the project description contained in the Public Notice for certification, or as otherwise approved by Ecology.
4. A full-time Pollution Control inspector shall be on-site, or on-call and readily accessible to the site, at all times while construction activities are occurring that may affect the quality of ground and surface waters of the state.
5. The Pollution Control inspector shall have adequate authority to ensure proper implementation of the SWPPP and Erosion and Sediment Control Plans, as well as immediate corrective actions necessary because of changing field conditions. If the Pollution Control Officer issues an order necessary to implement a portion of the SWPPP or to prevent pollution to the river, all personnel on site, including the construction contractor and the contractor's employees, shall immediately comply with this order.
6. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology or WDFW personnel for site inspections, monitoring, necessary data collection, or to ensure that conditions of this Order are being met.

7. Copies of this Order and all related permits, approvals, and documents shall be kept on site and readily available for reference by the project managers, construction managers and foremen, other employees and contractors of the Applicant, and state agency personnel.
8. Any person who fails to comply with any provision of this Order shall be liable for a penalty of up to ten thousand dollars (\$10,000) per violation for each day of continuing noncompliance.

APPENDIX D

SECTION 18 PRESCRIPTIONS

B. U.S. Department of the Interior, Section 18 Prescriptions for Fishways

1. Downstream Fish Passage: Riffe Lake and Cowlitz Falls Collection and Passage (Settlement Agreement Article 1).

a) Within six (6) months of license issuance, Licensee shall develop and submit a plan for downstream fish passage and collection at Riffe Lake and Cowlitz Falls. The Licensee shall prepare the plan in collaboration with, and subject to approval by, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. The plan shall include:

1) a report on the results of negotiations among the Licensee, Lewis County Public Utility District (licensee for the Cowlitz Falls Project, FERC No. 2833) and the Bonneville Power Administration regarding shared funding of cooperative efforts to improve downstream passage and collection effectiveness at or near Cowlitz Falls;

2) proposed facilities and measures most likely to achieve the goal of 95% Fish Passage Survival ("FPS"), as defined in the August 2000 Settlement Agreement, to be funded by the Licensee to contribute to effective downstream passage and collection at or near Cowlitz Falls and/or to be constructed by the Licensee downstream of Cowlitz Falls Dam at Riffe Lake;

- 3) plans to support the on-going operation and maintenance of facilities and measures for downstream passage and collection at or near Cowlitz Falls and/or at Riffe Lake each year for the term of the license;
- 4) plans for monitoring and evaluation of effectiveness, including determination of the combined FPS of the existing, proposed new and/or improved facilities at or near Cowlitz Falls and/or Riffe Lake; and
- 5) a construction and implementation timeline not to exceed 12 months from plan approval by the Commission, unless the Licensee can establish good cause for additional time.

The draft plan shall be provided for 30-day review and comment to the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, to the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan either on its own or pursuant to an agreement reached among the Licensee, Bonneville Power Administration and Lewis County Public Utility District to fund cooperative efforts for passage improvements at or near Cowlitz Falls.

b) Within eighteen (18) months of completion of the new and/or modified Riffe Lake/Cowlitz Falls downstream fish passage/collection facilities required above, the Licensee shall file a report on the effectiveness of the Riffe Lake/Cowlitz Falls downstream fish passage/collection facilities and measures, including an evaluation of the FPS achieved by the facilities and measures. If the FPS achieved has not reached 95%, the report shall include a plan and schedule providing for any further improvements to downstream passage facilities or measures as are determined by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to be most likely successful in reaching 95% FPS. The Licensee shall prepare and file the plan for further improvements in accordance with the consultation, review and approval procedures set forth above, and upon approval by the NMFS and USFWS and filing with the Commission, shall implement, or support implementation of, the improvements provided for in the plan. The plan and schedule shall provide for continued monitoring and evaluation of fish passage effectiveness. The monitoring and evaluation results shall be provided to the FTC or the agencies in a timely manner.

c) The Licensee shall implement, or support implementation of, additional downstream passage facility improvements and file additional reports at 18 month intervals in

accordance with the preceding paragraph until the Licensee has employed the best available technology and achieved at least 75% FPS for all species.

1. Downstream Fish Passage: Mayfield (Settlement Agreement Article 2)

a) Within six (6) months of license issuance, the Licensee shall develop and file with the Commission, a study plan or study results evaluating turbine mortality and the effectiveness of the existing louver system at Mayfield Dam. The studies shall be designed and results reviewed in consultation with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The Licensee shall include with the study plan and results documentation of consultation and copies of comments and recommendations on the plan and descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall conduct the studies.

b) Within three (3) years of license issuance, the Licensee shall develop and file with the Commission, a plan for improvements to downstream fish passage at Mayfield Dam. The plan shall be developed in consultation with the FTC or agencies and shall be based upon, but not limited to, the 90% Fish Passage Report (filed as supplemental information by the Licensee in February 2000). It shall include:

- 1) the results of studies of turbine mortality and effectiveness of the existing louvers;
- 2) plans for debris handling modifications;
- 3) plans for changes to the bypass system;
- 4) a comparison of the proposed improvements with those identified in the 90% Fish Passage Report along with a justification for any proposed improvements not included in the 90% Fish Passage Report;
- 5) a statement of how the proposed improvements will achieve increased Fish Guidance Efficiency (“FGE”), as defined in the August 2000 Settlement Agreement, and survival at Mayfield Dam to a level of downstream fish passage survival rate, also as defined in the August 2000 Settlement Agreement, of greater than or equal to 95% for anadromous stocks;
- 6) a construction and implementation schedule not to exceed one year from the date of plan approval, unless there is good cause for extending the period beyond one year; and

7) plans to evaluate the effectiveness of downstream fish passage, including FGE and the downstream passage survival rate at Mayfield Dam, upon completion of the proposed improvements.

The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.

c) Within eighteen months of the completion of construction of the improvements to downstream fish passage at Mayfield Dam as provided in the approved schedule, the Licensee shall file a report on the effectiveness of the modifications, including a calculation of the downstream fish passage survival rate and FGE achieved by the facility. If the downstream fish passage survival rate at Mayfield Dam has not achieved 95%, the report shall also include plans to further improve the effectiveness of the facilities and measures or to substitute other measures as described in paragraph (d) below, and to continue monitoring their effectiveness, including continued monitoring of FGE and the downstream fish passage survival rate. The Licensee shall prepare and file the plan for further improvements in accordance with the consultation, review and approval procedures set forth above. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the further improvements provided for in the plan.

d) Tacoma shall implement additional downstream passage facility modifications or measures and file additional reports at 18 month intervals in accordance with the preceding paragraph until either: 1) a 95% downstream fish passage survival rate is achieved; or 2) the National Marine Fisheries Service and U.S. Fish and Wildlife Service, in consultation with the FTC or agencies, determine that passage effectiveness and survival are high enough to support self-sustaining populations of anadromous fish stocks; that protection of anadromous fish migrating downstream at Mayfield Dam has been maximized by all reasonable measures and that adjustments to hatchery production (using then-existing facilities) and/or habitat measures will be required in lieu of further attempts to improve downstream passage at Mayfield Dam. If NMFS and USFWS elect to pursue other measures in lieu of further downstream passage improvements, the Licensee, in consultation with the FTC or agencies, shall prepare a draft plan for other actions designed to mitigate for continued juvenile mortality at Mayfield Dam. The draft plan shall be submitted to the FTC or agencies for 30-day review and comment. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for

approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.

e) Tacoma shall monitor proper operation of passage facilities and evaluate effects of changed conditions on FGE and downstream fish passage survival, with a summary of results to be submitted annually to the FTC or agencies. Tacoma shall immediately report to the FTC or agencies any results indicating a significant reduction in passage effectiveness or survival, and consult with the FTC or agencies on any further improvements that may be required to maintain consistently high levels of passage effectiveness and survival in accordance with the above performance standards.

2. Upstream Fish Passage: Barrier, Mayfield and Mossyrock. (Settlement Agreement Article 3)

a) The Licensee, in consultation with the National Marine Fisheries Service and U.S. Fish and Wildlife Service shall provide and maintain effective upstream fish passage at the Barrier Dam, Mayfield Dam and Mossyrock Dam through trap and haul facilities immediately upon license issuance, and continuing until volitional upstream passage systems have been implemented in accordance with this article.

b) Within six months of license issuance, or as soon as practicable thereafter depending on the availability of marked fish, and updated on an annual basis thereafter, the Licensee shall file with the Commission a report on adult anadromous fish traveling through the Cowlitz River Project, prepared in collaboration with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The report shall include: 1) the most recent version of Tables 3, 4, and 5 from the report entitled *Contribution Rate Benchmarks for Future Runs of Spring Chinook, Fall Chinook, and Coho Produced at the Cowlitz Salmon Hatchery* that provide estimated age 3 recruits and survival equivalency that enables comparison of future broods to the benchmark run year and survival rate for each of these species, dated June 28, 2000 and filed with the Commission concurrently with the August 2000 Cowlitz River Hydroelectric Project Settlement Agreement; 2) tables estimating the annual number of adult recruits originating from the Cowlitz River basin upstream of the Toutle River, and including steelhead, cutthroat trout, and all other indigenous stocks that are produced at the hatcheries, along with an index of each stock to its benchmark values, or if not otherwise agreed, a default index of “1”; 3) a plan and schedule for studies, to be conducted at regular intervals, to evaluate whether the following criteria for implementing effective upstream passage through volitional facilities have been met: A) adult fish in Mayfield Lake are able to choose their tributary of origin and survive Mayfield Lake transit at rates determined by NMFS and USFWS, in consultation with the FTC or agencies, to be

sufficient to achieve effective upstream passage through volitional facilities; and B) as determined based on the above-described tables with respect to: (I) the number of pre-spawners arriving at the Barrier Dam, in at least 3 of 5 consecutive brood years measured, and based on the 5-year rolling average, exceeds an abundance level which indicates natural recruitment above Mayfield Dam has achieved self-sustaining levels, as determined by the National Marine Fisheries Service in consultation with the FTC or agencies; (ii) the productivity level in 3 of 5 years and the 5-year rolling average, as measured at the Barrier Dam or other Cowlitz River fish counting facilities by the recruit/pre-spawner ratio, exceeds 1.0; and (iii) the disease management plan required by Article 8 has been implemented.

c) For any annual report filed within 12 years of license issuance in which the results of the studies indicate that, within the next three years or less, the above criteria for volitional upstream passage will be met with respect to any salmonid species originating in the Tilton basin and with respect to either spring chinook salmon or late winter steelhead originating above Mossyrock Dam, the Licensee shall also include proposed preliminary designs and schedules for the construction of upstream passage systems for the Project. In the case of Barrier Dam, the proposed modifications shall provide for breaching the Barrier Dam. In lieu of breaching, a fish ladder may be constructed only if NMFS and USFWS determine, in consultation with the FTC or agencies, that a ladder is more appropriate than breaching for effective upstream passage. The proposed modifications for the Barrier Dam shall also include steps to disable the electrical field in the event of fish ladder construction or breaching the dam. In the case of Mayfield Dam, the upstream passage system proposed shall be a ladder with sorting facilities, unless prior to filing the report the NMFS and USFWS determine that a tram is more appropriate than a ladder for effective upstream passage, in which case the system proposed shall be a tram with sorting facilities. In the case of Mossyrock Dam, the passage system proposed shall be an adult trap and haul facility to facilitate adult transit above Cowlitz Falls Dam to be built before or concurrently with the upstream passage system at Mayfield Dam, unless prior to filing the report the USFWS and NMFS determine that a comparably-priced tram is more appropriate than a trap and haul facility based on studies that show fish are able to migrate through Riffe Lake, and it has also been determined that an adult upstream passage facility will be developed at Cowlitz Falls Dam. A draft report shall be provided to the FTC or agencies for review and comment. The Licensee shall include with the report documentation of consultation and copies of comments and recommendations on the report, and specific descriptions of how the FTC's and agencies' comments are accommodated by the report. The Licensee shall submit the final report to the NMFS and USFWS for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the proposals in the report.

d) Upon meeting the criteria above for the construction of volitional upstream passage systems, the Licensee shall proceed expeditiously to complete the final design, permitting

and construction of upstream passage systems. The final design shall be subject to the same review and approval process described in paragraph c) above. Once the report containing the final design and implementation schedule for the construction of upstream fish passage systems is approved by NMFS and USFWS and filed with the Commission, volitional upstream passage facilities shall be completed and made operational within one (1) year of meeting the criteria or approval of the final design, whichever is later, unless there is good cause for extending the period beyond one year.

e) Within five years of license issuance, the Licensee shall establish an interest-bearing escrow account in the amount of \$15 million to contribute to the total cost of constructing volitional upstream fish passage facilities. To minimize administrative cost and allow conservative growth, said escrow account may be held by the Licensee as a separate account (with Licensee being obligated to treat said account substantially similar to an escrow account), and said account may be invested, consistent with investment limitations on public agencies within the State of Washington.

f) If at any time the Licensee files a report indicating that the above criteria are not likely to be met within 15 years following license issuance with respect to listed chinook salmon or steelhead originating above Mayfield Dam, the Licensee shall consult with the FTC or agencies, using the best available data at the time, regarding factors that may be contributing to the failure to meet such criteria, and the likelihood or not that such criteria will be met for the listed stocks in the foreseeable future.

g) If preliminary or final upstream volitional fish passage design plans and implementation schedules have not been approved and filed with the Commission at the end of year 12, the Licensee must prepare and submit preliminary design plans and schedules in accordance with paragraphs c) and d) if the volitional upstream passage criteria set forth in paragraphs b) and c) have been met or are likely to be met for any salmonid species in the Tilton by year 15. The Licensee shall proceed expeditiously with final design and construction of volitional upstream passage facilities, unless otherwise directed under paragraph h) below.

h) If within 14 years of license issuance the criteria for volitional upstream passage facilities, described in b), c) and g) above, have not been met and it is determined by the FTC or agencies, and affected Tribes, with the concurrence of NMFS and USFWS, that measures in addition to those provided for in the August 2000 Settlement Agreement are necessary to restore self-sustaining, natural production of ESA-listed stocks in the Cowlitz River basin, and that expenditure of the escrow fund on such additional measures in lieu of volitional upstream facilities is necessary and appropriate to achieve natural stock restoration, consistent with the express purpose of the license and the Settlement Agreement, and with applicable recovery plans for the listed Cowlitz River stocks, the Licensee shall submit to the Commission a plan to abandon volitional upstream passage and expend the funds in the escrow account for the purposes of protecting and promoting

restoration and recovery of listed Cowlitz River stocks. The draft plan shall be submitted to the FTC or agencies for 30-day review and comment period. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Commission reserves the right to require changes to the plan. Upon Commission approval, the Licensee shall implement the plan. If the above criteria have not been met for any salmonid species in the Tilton by year 15, the Licensee shall continue monitoring fishery conditions for future construction of upstream volitional fish passage, until either the criteria are met or a decision is made to abandon upstream volitional passage and fund other necessary and appropriate measures in accordance with this paragraph.

I) Following construction of volitional upstream passage facilities, the Licensee, in consultation with the FTC or the agencies, shall monitor the effectiveness of the facilities. As deemed necessary by NMFS and USFWS, after consultation with the FTC, the Licensee shall implement such reasonable modifications as may be necessary to improve passage effectiveness.

j) Any plan required to be filed pursuant to this article shall be prepared in consultation with the FTC or agencies. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Licensee shall submit the plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.

A. U.S. Department of Commerce Section 18 Prescriptions

B. Downstream Fish Passage: Mossyrock Dam.

ARTICLE X. a) Within six (6) months of license issuance, Licensee shall develop and submit a plan for downstream fish passage and collection at Riffe Lake and Cowlitz Falls. The Licensee shall prepare the plan in collaboration with, and subject to approval by, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. The plan shall include: 1) a report on the results of negotiations among the Licensee, Lewis County Public Utility District (licensee for the Cowlitz Falls Project, FERC No. 2833) and the Bonneville Power Administration regarding shared funding of cooperative efforts to improve downstream passage and collection effectiveness at or near Cowlitz Falls; 2) proposed facilities and measures most likely to achieve the goal of 95% Fish Passage Survival ("FPS"), as defined in the August 2000 Settlement Agreement, to be funded by the Licensee to contribute to effective downstream passage and collection at or near Cowlitz Falls and/or to be constructed by the Licensee downstream of Cowlitz Falls Dam

at Riffe Lake; 3) plans to support the on-going operation and maintenance of facilities and measures for downstream passage and collection at or near Cowlitz Falls and/or at Riffe Lake each year for the term of the license; 4) plans for monitoring and evaluation of effectiveness, including determination of the combined FPS of the existing, proposed new and/or improved facilities at or near Cowlitz Falls and/or Riffe Lake; and 5) a construction and implementation timeline not to exceed 12 months from plan approval by the Commission, unless the Licensee can establish good cause for additional time. The draft plan shall be provided for 30-day review and comment to the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, to the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan either on its own or pursuant to an agreement reached among the Licensee, Bonneville Power Administration and Lewis County Public Utility District to fund cooperative efforts for passage improvements at or near Cowlitz Falls.

b) Within eighteen (18) months of completion of the new and/or modified Riffe Lake/Cowlitz Falls downstream fish passage/collection facilities required above, the Licensee shall file a report on the effectiveness of the Riffe Lake/Cowlitz Falls downstream fish passage/collection facilities and measures, including an evaluation of the FPS achieved by the facilities and measures. If the FPS achieved has not reached 95%, the report shall include a plan and schedule providing for any further improvements to downstream passage facilities or measures as are determined by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to be most likely successful in reaching 95% FPS. The Licensee shall prepare and file the plan for further improvements in accordance with the consultation, review and approval procedures set forth above, and upon approval by the NMFS and USFWS and filing with the Commission, shall implement, or support implementation of, the improvements provided for in the plan. The plan and schedule shall provide for continued monitoring and evaluation of fish passage effectiveness. The monitoring and evaluation results shall be provided to the FTC or the agencies in a timely manner.

c) The Licensee shall implement, or support implementation of, additional downstream passage facility improvements and file additional reports at 18 month intervals in accordance with the preceding paragraph until the Licensee has employed the best available technology and achieved at least 75% FPS for all species.

A. Downstream Fish Passage: Mayfield Dam.

ARTICLE XI. a) Within six (6) months of license issuance, the Licensee shall develop and file with the Commission, a study plan or study results evaluating turbine mortality and the effectiveness of the existing louver system at Mayfield Dam. The studies shall be designed and results reviewed in consultation with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The Licensee shall include with the study plan and results documentation of consultation and copies of comments and recommendations on the plan and descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall conduct the studies.

b) Within three (3) years of license issuance, the Licensee shall develop and file with the Commission, a plan for improvements to downstream fish passage at Mayfield Dam. The plan shall be developed in consultation with the FTC or agencies and shall be based upon the 90% Fish Passage Report (filed as supplemental information by the Licensee in February 2000). It shall include: 1) the results of studies of turbine mortality and effectiveness of the existing louvers; 2) plans for debris handling modifications; 3) plans for changes to the bypass system; 4) a comparison of the proposed improvements with those identified in the 90% Fish Passage Report along with a justification for any proposed improvements not included in the 90% Fish Passage Report; 5) a statement of how the proposed improvements will achieve increased Fish Guidance Efficiency (“FGE”), as defined in the August 2000 Settlement Agreement, and survival at Mayfield Dam to a level of downstream fish passage survival rate, also as defined in the August 2000 Settlement Agreement, of greater than or equal to 95% for anadromous stocks; 6) a construction and implementation schedule not to exceed one year from the date of plan approval, unless there is good cause for extending the period beyond one year; and 7) plans to evaluate the effectiveness of downstream fish passage, including FGE and the downstream passage survival rate at Mayfield Dam, upon completion of the proposed improvements. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC’s or agencies’ comments are accommodated by the plan. The Licensee shall submit the final plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.

c) Within eighteen months of the completion of construction of the improvements to downstream fish passage at Mayfield Dam as provided in the approved schedule, the

Licensee shall file a report on the effectiveness of the modifications, including a calculation of the downstream fish passage survival rate and FGE achieved by the facility. If the downstream fish passage survival rate at Mayfield Dam has not achieved 95%, the report shall also include plans to further improve the effectiveness of the facilities and measures or to substitute other measures as described in paragraph (d) below, and to continue monitoring their effectiveness, including continued monitoring of FGE and the downstream fish passage survival rate. The Licensee shall prepare and file the plan for further improvements in accordance with the consultation, review and approval procedures set forth above. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the further improvements provided for in the plan.

d) Tacoma shall implement additional downstream passage facility modifications or measures and file additional reports at 18 month intervals in accordance with the preceding paragraph until either: 1) a 95% downstream fish passage survival rate is achieved; or 2) the National Marine Fisheries Service and U.S. Fish and Wildlife Service, in consultation with the FTC or agencies, determine that passage effectiveness and survival are high enough to support self-sustaining populations of anadromous fish stocks; that protection of anadromous fish migrating downstream at Mayfield Dam has been maximized by all reasonable measures and that adjustments to hatchery production (using then-existing facilities) and/or habitat measures will be required in lieu of further attempts to improve downstream passage at Mayfield Dam.

e) Tacoma shall monitor proper operation of passage facilities and evaluate effects of changed conditions on FGE and downstream fish passage survival, with a summary of results to be submitted annually to the FTC or agencies. Tacoma shall immediately report to the FTC or agencies any results indicating a significant reduction in passage effectiveness or survival, and consult with the FTC or agencies on any further improvements that may be required to maintain consistently high levels of passage effectiveness and survival in accordance with the above performance standards.

B. Upstream passage, Barrier, Mayfield and Mossyrock.

ARTICLE XII. a) The Licensee, in consultation with the National Marine Fisheries Service and U.S. Fish and Wildlife Service shall provide and maintain effective upstream fish passage at the Barrier Dam, Mayfield Dam and Mossyrock Dam through trap and haul facilities immediately upon license issuance, and continuing until volitional upstream passage systems have been implemented in accordance with this article.

b) Within six months of license issuance, or as soon as practicable thereafter depending on the availability of marked fish, and updated on an annual basis thereafter, the Licensee shall file with the Commission a report on adult anadromous fish traveling through the Cowlitz River Project, prepared in collaboration with the Fisheries Technical Committee

provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). The report shall include: 1) the most recent version of Tables 3, 4, and 5 from the report entitled *Contribution Rate Benchmarks for Future Runs of Spring Chinook, Fall Chinook, and Coho Produced at the Cowlitz Salmon Hatchery* that provide estimated age 3 recruits and survival equivalency that enables comparison of future broods to the benchmark run year and survival rate for each of these species, dated June 28, 2000 and filed with the Commission concurrently with the August 2000 Cowlitz River Hydroelectric Project Settlement Agreement; 2) tables estimating the annual number of adult recruits originating from the Cowlitz River basin upstream of the Toutle River, and including steelhead, cutthroat trout, and all other indigenous stocks that are produced at the hatcheries, along with an index of each stock to its benchmark values, or if not otherwise agreed, a default index of “1”; 3) a plan and schedule for studies, to be conducted at regular intervals, to evaluate whether the following criteria for implementing effective upstream passage through volitional facilities have been met: A) adult fish in Mayfield Lake are able to choose their tributary of origin and survive Mayfield Lake transit at rates determined by NMFS and USFWS, in consultation with the FTC or agencies, to be sufficient to achieve effective upstream passage through volitional facilities; and B) as determined based on the above-described tables with respect to: (I) the number of pre-spawners arriving at the Barrier Dam, in at least 3 of 5 consecutive brood years measured, and based on the 5-year rolling average, exceeds an abundance level which indicates natural recruitment above Mayfield Dam has achieved self-sustaining levels, as determined by the National Marine Fisheries Service in consultation with the FTC or agencies; (ii) the productivity level in 3 of 5 years and the 5-year rolling average, as measured at the Barrier Dam or other Cowlitz River fish counting facilities by the recruit/pre-spawner ratio, exceeds 1.0; and (iii) the disease management plan required by Article 8 has been implemented.

c) For any annual report filed within 12 years of license issuance in which the results of the studies indicate that, within the next three years or less, the above criteria for volitional upstream passage will be met with respect to any salmonid species originating in the Tilton basin and with respect to either spring chinook salmon or late winter steelhead originating above Mossyrock Dam, the Licensee shall also include proposed preliminary designs and schedules for the construction of upstream passage systems for the Project. In the case of Barrier Dam, the proposed modifications shall provide for breaching the Barrier Dam. In lieu of breaching, a fish ladder may be constructed only if NMFS and USFWS determine, in consultation with the FTC or agencies, that a ladder is more appropriate than breaching for effective upstream passage. The proposed modifications for the Barrier Dam shall also include steps to disable the electrical field in the event of fish ladder construction or breaching the dam. In the case of Mayfield Dam, the upstream passage system proposed shall be a ladder with sorting facilities, unless prior to filing the report the NMFS and USFWS determine that a tram is more

appropriate than a ladder for effective upstream passage, in which case the system proposed shall be a tram with sorting facilities. In the case of Mossyrock Dam, the passage system proposed shall be an adult trap and haul facility to facilitate adult transit above Cowlitz Falls Dam to be built before or concurrently with the upstream passage system at Mayfield Dam, unless prior to filing the report the USFWS and NMFS determine that a comparably-priced tram is more appropriate than a trap and haul facility based on studies that show fish are able to migrate through Riffe Lake, and it has also been determined that an adult upstream passage facility will be developed at Cowlitz Falls Dam. A draft report shall be provided to the FTC or agencies for review and comment. The Licensee shall include with the report documentation of consultation and copies of comments and recommendations on the report, and specific descriptions of how the FTC's and agencies' comments are accommodated by the report. The Licensee shall submit the final report to the NMFS and USFWS for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the proposals in the report.

d) Upon meeting the criteria above for the construction of volitional upstream passage systems, the Licensee shall proceed expeditiously to complete the final design, permitting and construction of upstream passage systems. The final design shall be subject to the same review and approval process described in paragraph c) above. Once the report containing the final design and implementation schedule for the construction of upstream fish passage systems is approved by NMFS and USFWS and filed with the Commission, volitional upstream passage facilities shall be completed and made operational within one (1) year of meeting the criteria or approval of the final design, whichever is later, unless there is good cause for extending the period beyond one year.

e) Within five years of license issuance, the Licensee shall establish an interest-bearing escrow account in the amount of \$15 million to contribute to the total cost of constructing volitional upstream fish passage facilities. To minimize administrative cost and allow conservative growth, said escrow account may be held by the Licensee as a separate account (with Licensee being obligated to treat said account substantially similar to an escrow account), and said account may be invested, consistent with investment limitations on public agencies within the State of Washington.

f) If at any time the Licensee files a report indicating that the above criteria are not likely to be met within 15 years following license issuance with respect to listed chinook salmon or steelhead originating above Mayfield Dam, the Licensee shall consult with the FTC or agencies, using the best available data at the time, regarding factors that may be contributing to the failure to meet such criteria, and the likelihood or not that such criteria will be met for the listed stocks in the foreseeable future.

g) If preliminary or final upstream volitional fish passage design plans and implementation schedules have not been approved and filed with the Commission at the

end of year 12, the Licensee must prepare and submit preliminary design plans and schedules in accordance with paragraphs c) and d) if the volitional upstream passage criteria set forth in paragraphs b) and c) have been met or are likely to be met for any salmonid species in the Tilton by year 15. The Licensee shall proceed expeditiously with final design and construction of volitional upstream passage facilities, unless otherwise directed under paragraph h) below.

h) If within 14 years of license issuance the criteria for volitional upstream passage facilities, described in b), c) and g) above, have not been met and it is determined by the FTC or agencies, and affected Tribes, with the concurrence of NMFS and USFWS, that measures in addition to those provided for in the August 2000 Settlement Agreement are necessary to restore self-sustaining, natural production of ESA-listed stocks in the Cowlitz River basin, and that expenditure of the escrow fund on such additional measures in lieu of volitional upstream facilities is necessary and appropriate to achieve natural stock restoration, consistent with the express purpose of the license and the Settlement Agreement, and with applicable recovery plans for the listed Cowlitz River stocks, the Licensee shall submit to the Commission a plan to abandon volitional upstream passage and expend the funds in the escrow account for the purposes of protecting and promoting restoration and recovery of listed Cowlitz River stocks. If the above criteria have not been met for any salmonid species in the Tilton by year 15, the Licensee shall continue monitoring fishery conditions for future construction of upstream volitional fish passage, until either the criteria are met or a decision is made to abandon upstream volitional passage and fund other necessary and appropriate measures in accordance with this paragraph.

I) Following construction of volitional upstream passage facilities, the Licensee, in consultation with the FTC or the agencies, shall monitor the effectiveness of the facilities. As deemed necessary by NMFS and USFWS, after consultation with the FTC, the Licensee shall implement such reasonable modifications as may be necessary to improve passage effectiveness.

j) Any plan required to be filed pursuant to this article shall be prepared in consultation with the FTC or agencies. The Licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the plan, and specific descriptions of how the FTC's or agencies' comments are accommodated by the plan. The Licensee shall submit the plan to the National Marine Fisheries Service and U.S. Fish and Wildlife Service for approval prior to filing with the Commission. Upon approval by NMFS and USFWS and filing with the Commission, the Licensee shall implement the plan.