

## 2.0 PROPOSED ACTION AND ALTERNATIVES

### 2.1 NO-ACTION ALTERNATIVE

The Commission typically defines the no-action alternative as continuing to operate the project under the terms and conditions of the existing license, with no additional environmental protection, mitigation, or enhancement measures being implemented that would change the existing environmental conditions in the project area. Thus, the no-action alternative is intended to describe the environment as it exists today, and by which we judge the benefits and costs of any needed measures that would be applied under a new license.

In this instant case, the Commission recently amended the existing license (June 2004) to include the Anadromous Fish Agreement and Habitat Conservation Plan (HCP) for the Rocky Reach Project (see Appendix A).<sup>8</sup> In accordance with the amended license, Chelan PUD has begun to implement the HCP, but implementation is still in the early stages. Much of the cost of implementing the HCP is still to be expended and the expected benefits of the HCP have not begun to accrue; most of these costs and benefits would begin to accrue during the term of any new license that may be issued. Including future HCP measures as part of the no-action alternative would not reflect the environment as it exists today and would pre-judge the benefits and costs of including those measures in a new license.

Therefore, to accurately differentiate between the no-action alternative (baseline), the proposed action (Chelan PUD's proposal, which includes full implementation of the HCP), and any other alternatives, we define the no-action alternative as project operations as they stood on January 12, 2005, when the Commission issued its Ready for Environmental Analysis (REA) notice. Under the no-action alternative, the project would continue to operate as it did at that time, without implementation of future HCP-mandated measures. No additional change to the current environmental setting in the project area would occur, and power generation would remain the same. No additional alterations or enhancements to existing environmental conditions would occur. The no-action alternative is used to establish baseline environmental conditions for comparison with the other alternatives.

#### 2.1.1 Existing Project Facilities

The project is located on the Columbia River at river mile (RM) 473.7 in Chelan County, Washington, approximately 7 miles upstream of the city of Wenatchee. The project reservoir extends 43 miles upstream to the Public Utility District No. 1 of Douglas County's (Douglas PUD) Wells Project (FERC No. 2149). The project is a run-

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<sup>8</sup> 107 FERC ¶61,281.

of-river project, with run-of-river defined in this case as average daily inflow equaling the average daily outflow.

The initial application for the project was filed January 13, 1956. The license was issued by order dated July 11, 1957, and expires in 2006. Five amendments to the initial license had been approved at the time of Chelan PUD's submittal of its application for a new license.

The existing Rocky Reach Project consists of:

1. a reservoir, with a current normal maximum headwater elevation at the dam of 707 feet<sup>9</sup> above mean sea level (msl) and an average flow of about 115,400 cubic feet per second (cfs);
2. a 130-foot-high and 2,847-foot-long concrete-gravity dam (including the powerhouse);
3. a spillway that is integral to the dam with twelve 50-foot-wide bays separated by 10-foot-wide piers, with flows being controlled by a 58-foot-high radial gate;
4. a 1,088-foot-long, 206-foot-wide, 218-foot high indoor powerhouse with 11 generating units (Units 1 through 7 with installed capacities of 68,392 kilowatt (kW) each and Units 8 through 11 with installed capacities of 96,554 kW) each and a service bay;
5. transformers, located on the powerhouse intake deck, which step up from 14.8 kilovolts (kV) to 230 kV, and five sets of 230-kV transmission lines that convey power from the powerhouse to the switchyard;
6. a forebay wall, which is integral to the dam and is formed by 10 blocks varying in heights and widths between the powerhouse and west abutment;
7. two 125-foot-high by 60-foot-wide non-overflow east abutment blocks that are integral to the dam;
8. a roughly 2,000-foot-long by 200-foot-deep (maximum depth of the cutoff) east bank seepage cutoff, which is buried and extends from the east end of the concrete portions of the dam;
9. a fishway with three entrances (between spillway bays 8 and 9, at the center of the dam, and at the powerhouse service bay) to provide for upstream adult fish migration;

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<sup>9</sup> All elevations in this document are referenced to the National Geodetic Vertical Datum of 1929. To convert to the newer U.S. Coast and Geodetic Survey datum commonly used on the Columbia River, subtract 1.78 feet.

10. three hydraulic turbine-driven pumps with a total capacity of 3,500 cfs to provide attraction water for the fishway passages;
11. a juvenile fish bypass system with a surface collection system and a bypass conduit to provide downstream passage to juvenile salmon and steelhead;
12. an 800-kW small turbine generator in the existing attraction water drop structure that provides supplemental flow to the adult fishway spillway entrance (licensed and planned for completion in April 2007);
13. fish rearing facilities on Turtle Rock Island and near the dam's left abutment, both upstream and downstream of the dam;
14. recreation facilities, including a visitor's center, powerhouse galleries, and seven parks; and
15. public safety measures, including a boat barrier, log boom, fencing, and signs to restrict access to parts of the project facilities.

### **2.1.2 Current Project Operation**

Chelan PUD operates the project reservoir with a normal maximum headwater elevation of 707 feet. The minimum headwater level is at elevation 703 feet, and the maximum headwater level, available for passage of flood flows, is at elevation 710 feet. Project operation, including decisions to start, stop, and adjust the output of the 11 generating units, is completely automated. The project's automated functions are backed up with around-the-clock, on-duty plant operators who monitor operations and can override computer control if needed.

The project has usable storage capacity of 36,400 acre-feet between headwater elevations 707 feet and 703 feet.

Chelan PUD is a signatory to the 1997 Mid-Columbia Hourly Coordination Agreement (Hourly Coordination Agreement), along with Douglas PUD, Public Utility District No. 2 of Grant County (Grant PUD), the Bonneville Power Administration (BPA), the U.S. Army Corps of Engineers (Corps), the U.S. Bureau of Reclamation, and other Northwest utilities. The Hourly Coordination Agreement facilitates maintaining the mid-Columbia reservoirs<sup>10</sup> at or near their full levels. All power requests and non-power requirements are collected and tracked by a computer and power management personnel at Grant PUD's headquarters in Ephrata, Washington. At this headquarters, flows are allocated to maximize generation, keeping the reservoirs as full as possible while minimizing spill losses.

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<sup>10</sup> The Hourly Coordination Agreement applies to the Grand Coulee, Chief Joseph, Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids Hydroelectric Project reservoirs.

Because of operation under the Hourly Coordination Agreement, plant capacity at the project does not change significantly with flow. Currently, the project operates in the top foot of reservoir storage 73 percent of the time and within the top 2 feet 98 percent of the time. As flows reach and exceed 150,000 cfs, tailwater effects reduce plant capacity due to higher tailwater levels and lower available gross head. At average flows, the reservoir's active storage is sufficient to run the plant for about 2 hours without additional inflow.

Chelan PUD is also a signatory to the 2003 Hanford Reach Fall Chinook Protection Program Agreement (Hanford Reach Agreement), along with Grant PUD, BPA, Washington Department of Fish and Wildlife (WDFW), the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries), Douglas PUD, and the Colville Confederated Tribes. The Hanford Reach Agreement sets flow fluctuation limits for the protection of fall Chinook salmon.

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

### **2.1.3 Current Environmental Measures**

#### **2.1.3.1 Existing Fish Facilities and Programs**

##### **Upstream Passage**

The Rocky Reach dam is equipped with a fishway with entrances located between spillway bays 8 and 9, the center of the dam, and at the powerhouse service bay. Fish using these entrances follow passages to the center of the dam, and then along the downstream side of the powerhouse to a fish ladder along the forebay wall.

##### **Hatchery Programs and Fish Production Facilities**

The original FERC license for the project has provisions requiring Chelan PUD to construct, operate, and maintain facilities to conserve fish and wildlife resources. Ultimately, Chelan PUD entered into agreements with both the Washington Department of Fisheries and the Washington Department of Game, now merged and called WDFW, to develop facilities and programs for fish production (Chelan PUD, 1961, 1963a,b, 1965). The facilities constructed as a result of these and subsequent agreements include the Chelan Hatchery, Rocky Reach Hatchery, and Turtle Rock Hatchery.

Prior to implementation of the HCP, hatchery-based compensation program goals consisted of releases of summer/fall Chinook salmon (200,000 yearlings and up to 1,620,000 subyearlings), 200,000 steelhead, and 90,000 rainbow trout. Under the HCP, the 1.6 million subyearling Chinook salmon program has been converted to a program of 400,000 fish reared at 25 fish per pound and 660,000 fish released at 50 fish per pound. These production goals are subject to broodstock availability and other constraints related to changes in the genetic management for steelhead, which is listed under the Endangered Species Act (ESA).

WDFW operates the Chelan Hatchery, the Rocky Reach Hatchery, and the Turtle Rock Hatchery under yearly agreements. Chelan PUD, Indian tribes, and fishery agencies have agreed on an artificial production program to fully mitigate all spawning, rearing and passage effects on spring Chinook salmon and steelhead due to construction and operation of the project (FERC, 1995; Chelan PUD, 1961, 1963a,b). These programs would continue under the HCP.

### **Current Salmonid Fisheries Conservation Measures**

Current anadromous salmon and steelhead fisheries habitat conservation measures within the project area evolved through a number of processes that date back to 1979, when FERC initiated an administrative proceeding known as the Mid-Columbia Proceeding. The purpose of the Mid-Columbia Proceeding was to develop a systemwide approach to protect the downstream migration of salmon and steelhead in the mid-Columbia River in the area stretching from the tailrace of Chief Joseph dam downstream to the Hanford Reach; this area includes the project.

Over the years, a FERC administrative law judge approved several interim stipulations related solely to the Rocky Reach portion of the Mid-Columbia Proceeding. The most recent revised interim stipulation, approved on May 23, 1996, is the Fourth Interim Stipulation. In the Fourth Interim Stipulation, Chelan PUD agreed to: (1) develop fish protection measures (which can include guidance and bypass systems) to facilitate downstream fish migration; (2) evaluate the effectiveness of the fish protection measures; (3) provide hatchery fish production; and (4) work with interested parties concerning long-term compensation options.

The Fourth Interim Stipulation expired on December 31, 1998. Despite its expiration, the Fourth Interim Stipulation continued to guide project operations while negotiating parties tried to reach agreement on a Fifth Interim Stipulation and a final conservation plan for anadromous species. These discussions were concurrent with negotiations on the Rocky Reach HCP. For various reasons, the Fifth Interim Stipulation was not signed, and most parties agreed to defer to the HCP process.

The Rocky Reach HCP is a 50-year agreement to protect five species of Columbia River steelhead and salmon: spring and summer/fall Chinook salmon (*Oncorhynchus*

*tshawytscha*), sockeye salmon (*O. nerka*), coho salmon (*O. kisutch*), and steelhead (*O. mykiss*) (collectively, the Plan Species). Its goal is to result in no net impact on the Plan Species by using a combination of mitigation tools to improve fish passage survival rates and achieve a virtual 100 percent survival of fish passing the project. These mitigation tools include fish passage measures for juvenile and adult Plan Species, hatchery programs, and a fund for habitat improvements.

In August 2003, NOAA Fisheries issued an incidental take permit (ITP) for four of the Plan Species: Upper Columbia River spring-run Chinook salmon, Upper Columbia River summer/fall Chinook salmon, Okanogan River and Lake Wenatchee sockeye salmon (*O. nerka*), and Upper Columbia River steelhead. The permit would apply to non-listed Plan Species if and when such species are listed (68 FR 53351). Coho salmon are not included in the ITP because the native stock of this species was extirpated early in the 1900s.

On November 24, 2003, Chelan PUD and the HCP signatories filed the HCP with FERC as an amendment to be incorporated in the original project license, and as a settlement of the Rocky Reach portion of the Mid-Columbia Proceeding. The HCP amendment was approved by FERC in June 2004 and is referred to in this DEIS as part of Chelan PUD's proposal. The specific measures associated with the HCP are described in more detail in fisheries resource section 3.5.2, *Environmental Effects*.

### **2.1.3.2 Other Environmental Measures**

Other environmental measures that are part of Chelan PUD's ongoing operations include the following:

1. Managing spill to minimize total dissolved gas (TDG) while meeting fish survival goals;
2. Monitoring water temperatures;
3. Implementing a Spill Prevention Control and Countermeasure Plan;
4. Executing a fish predator control program;
5. Maintaining a fish counting program;
6. Stocking rainbow trout;
7. Funding periodic wildlife studies such as those related to mule deer, bald eagles, and goose nesting;
8. Operating and maintaining recreation facilities, including a visitor center, powerhouse galleries, educational and interpretative displays, and seven parks;
9. Maintaining a shoreline development tracking system;

10. Maintaining a milfoil harvest program; and
11. Maintaining public safety measures, including a boat barrier, log boom; fencing and signs to restrict access to parts of the project facilities.

#### **2.1.4 Current Project Boundary**

The current project boundary is defined by contour lines on each side of the reservoir beginning at elevation 707 feet at the project dam upstream to the Wells Project tailrace. The elevation of the boundary lines increases with distance upstream of the project dam to take into account the anticipated water level at high flows. The project boundary encompasses about 1,500 acres of land, of which Chelan PUD owns about 600 acres.

## **2.2 CHELAN PUD'S PROPOSAL**

### **2.2.1 Operational and Environmental Enhancement Measures**

Under Chelan PUD's proposal, as described in the license application and Preliminary Draft Environmental Assessment (PDEA) (Chelan PUD, 2004a), Chelan PUD proposes to implement the following operational and enhancement measures as part of a new license for the project, which Chelan PUD requests be a 50-year license:

1. develop and implement a Shoreline Erosion Management Plan that includes:
  - a. an erosion control demonstration project;
  - b. distribution of erosion control information;
  - c. a shoreline erosion control monitoring program; and
  - d. erosion control work at a BLM-owned site within the project boundary;
2. implement a Water Quality Management Plan that includes:
  - a. operating the project under the Hourly Coordination Agreement and the Hanford Reach Agreement;
  - b. monitoring water quality, as required in the 401 water quality certification of the Washington Department of Ecology (WDOE), to ensure that the Project does not impair water quality for parameters currently meeting water quality standards;
  - c. monitoring water temperatures in the project forebay, within the fishway and juvenile bypass system, and at the tailrace TDG monitoring site, with other temperature monitoring and modeling as required in any future WDOE 401 water quality certification order;
  - d. managing spill to minimize TDG while meeting fish survival goals, using gate sequences to minimize TDG, and adjusting spill to prevent high TDG levels based on in-season monitoring data;

- e. implementing potential reductions in voluntary spill for fish passage survival, based on fish survival studies and effectiveness of the juvenile bypass system;
  - f. performing studies to further investigate the feasibility of optimizing the use of spill through gates 2-12 during times when at least 50 thousand cubic feet per second (kcfs) is spilled;
  - g. developing a priority ranking for potential abatement measures for further exploration, including potential modeling and testing of specific technologies, if any are identified to be reasonable and feasible at the project once the long-term need for fish survival spill is determined;
  - h. investigating the reasonableness, feasibility and potential benefits (TDG abatement) and detriments (fish survival) of modifying the depth of the stilling basin and structure of dentates/baffle blocks in the stilling basin; and
  - i. continuing to implement and revise of the Spill Prevention Control and Countermeasure Plan for the project, and upgrading oil monitoring and separation equipment as needed when improved technology is available;
3. continue implementation of the HCP for Rocky Reach to protect salmon and steelhead;
  4. continue O&M of Rocky Reach anadromous fish passage facilities, including the new juvenile fish bypass system and the adult fish ladder;
  5. continue and enhance fish predator control programs at the project;
  6. develop and implement a Rocky Reach White Sturgeon Management Plan that may include:
    - a. a program to enhance white sturgeon populations through use of hatchery fish or other measures to achieve specific population goals that are consistent with the available sturgeon habitat in the project area;
    - b. a monitoring and evaluation program to evaluate plan effectiveness of the augmentation program and to adjust population targets; and
    - c. provisions for coordination with mid-Columbia and/or regional sturgeon planning groups;
  7. continue implementation of the Bull Trout Management Plan that includes<sup>11</sup>:

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<sup>11</sup> Subsequent to submitting its license application in June 2004, Chelan PUD submitted a final Bull Trout Management Plan to the Commission and the Commission approved that plan on April 19, 2005 (111 FERC ¶ 62,071). The Bull Trout Management Plan addressed in this DEIS is the Commission-approved plan.

- a. cooperation with implementation of the U.S. Fish and Wildlife Service (FWS) bull trout recovery plan for areas affected by project operations;
  - b. operation of upstream and downstream fish passage facilities in accordance with operation criteria for anadromous salmonids and compatible bull trout migration guidelines contained in the Rocky Reach Fish Passage Plan (Chelan PUD, 2003a);
  - c. expansion of video counts of fish passage to include off-season for an experimental period of one year to evaluate bull trout use of the fishway during periods outside the salmon migration period; and
  - d. implementation of a monitoring program for upstream and downstream bull trout passage;
8. implement a Pacific lamprey monitoring and evaluation program that includes:
- a. completion of adult radio telemetry studies to identify upstream fishway success and upstream passage success of Pacific lamprey in the Project area;
  - b. investigation of modifications used at lower Columbia River fishways for improving passage of Pacific lamprey to determine if these modifications may be applicable to project dam based on results of adult radio telemetry studies; and
  - c. implementation of reasonable and feasible adult fishway modifications, if any, and continued monitoring of fishway effectiveness;
9. implement a Resident Fish Management Plan that includes:
- a. continuing the current fish stocking program, which produces 90,000 rainbow trout for planting in local lakes;
  - b. the Twentyfive Mile Creek spawning channel program; and
  - c. providing \$6,000 annually to complete periodic resident fish monitoring and evaluation;
10. implement a Comprehensive Wildlife Management Plan (WMP) that includes:
- a. contributing funds for a mule deer study;
  - b. providing funds for each year of the license term to a contractor to implement an integrated noxious weed control program;
  - c. providing funds for each year of the license term to a contractor for noxious weed control in areas where *Spiranthes diluvialis* (Ute ladies'-tresses orchid) occurs in public lands adjacent to the project reservoir;
  - d. pursuing conservation easements on private lands where *Spiranthes diluvialis* occurs;
  - e. implementing a *S. diluvialis* monitoring program to evaluate the ongoing status of the populations;

- f. participating in a *S. diluvialis* recovery plan developed by the FWS;
  - g. continuing to conduct wildlife surveys similar to those conducted during the first license for the project for bald eagles and goose nesting;
  - h. integrating and promoting improved public access to public lands for short walks or hikes that provide opportunities for people to interact with nature; and
  - i. making funds available each year of the new license term for O&M and for habitat restoration of existing wildlife areas (WAs);
11. develop and implement a Historic Properties and Cultural Resources Management Plan (Cultural Plan), including cultural education and interpretation opportunities; and
12. implement a Recreation Resources Management Plan that includes:
- a. continued O&M of Rocky Reach Project reservoir park system;
  - b. expanding facilities at Lincoln Rock State Park to include group camping, in partnership with the Washington State Parks and Recreation Commission (Washington State Parks);
  - c. expanding facilities at Daroga State Park to include convenience camping (primitive cabins), in partnership with Washington State Parks;
  - d. working with Washington State Parks on a trail link from Lincoln Rock State Park to an education/interpretive trail being developed by Washington State Parks;
  - e. designing and implementing an irrigation system at Orondo Park;
  - f. providing opportunities for interpretive/nature trails on lands adjacent to Project waters, including an Entiatqua Trail and an interpretive trail at Daroga State Park and at Lincoln Rock State Park;
  - g. updating and implementing an Entiat Park master plan (addressing Chelan PUD expenditures for upgrades and enhancements):
    - provide funding for Entiat wastewater treatment plant upgrades associated with usage of Entiat Park;
    - provide funding for development of Entiat area ball fields;
    - trade-lease/purchase of 17.85 Entiat shoreline acres currently owned by Chelan PUD;
  - h. initiating a Recreation Enhancement Fund to provide public access, recreational enhancements and educational/interpretive opportunities along Project lands and waters;
  - i. conducting a Recreation Use Study no later than the 23<sup>rd</sup> year of the new license to define the existing recreational use in the Rocky Reach Project reservoir; and
  - j. monitoring and evaluating recreation needs as part of an advisory committee that meets on a regularly scheduled basis.

Detailed descriptions of these proposals are provided in section 3.0 of this document and the HCP is provided in its entirety in Appendix A.

### **2.2.2 Property Boundary Expansion**

In 1999, Chelan PUD hired a professional land surveyor to survey the project boundary for the project. As part of this process, Chelan PUD had a computer-based river flow analysis performed to verify flood elevations throughout the reservoir. This new analysis, that included aerial mapping techniques, updated riverbed cross-sections. It also included computer modeling that shows 100-year-flood elevations between Beebe Bridge and Wells Hydroelectric Project as several feet greater, in some locations, than those previously identified using earlier hand calculation methods.

The new calculated flood elevations are approximately 6 inches to 4 feet above the previously surveyed elevations, and Chelan PUD amended the License Application Exhibit G project boundary maps to accurately reflect these increases. Lands affected by this increase are located in rural areas that have minimal development. Chelan PUD is currently working with property owners to amend the necessary flowage easements. Table H-2 of the Final License Application for the Rocky Reach Project (Chelan PUD, 2004a) lists parcels of land being secured by Chelan PUD to amend flowage easements.

## **2.3 ALTERNATIVES TO CHELAN PUD'S PROPOSAL**

Pursuant to the REA notice issued January 12, 2005, various resource agencies and other interested parties provided comments and formal recommendations (see section 1.3). Chelan PUD responded with reply comments in letters filed with the Commission on April 27, 2005; May 11, 2005; and July 15, 2005.

### **2.3.1 Mandatory Conditions**

#### **2.3.1.1 Water Quality Certification**

Section 401(a)(1) of the Clean Water Act (CWA) requires an applicant for a federal license or permit for any activity that may result in any discharge into navigable waters to provide to the licensing or permitting agency a certification from the state in which the discharge originates that any such discharge will comply with certain sections of the CWA. On June 29, 2004, concurrently with the filing of its license application with the Commission, Chelan PUD requested a Section 401 water quality certificate from the WDOE. On June 13, 2005, Chelan PUD withdrew its June 29, 2004, request and reapplied for a Section 401 water quality certification with the understanding that WDOE and Chelan PUD would attempt to certify the project within 60 to 90 days. A decision by WDOE on the certification request is pending.

### **2.3.1.2 Section 18 of the Federal Power Act—Authority to Require Fishways**

Section 18 of the FPA, 16 USC § 811, states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of the U.S. Department of Commerce and the U.S. Department of the Interior (Interior) may prescribe. By letter dated March 8, 2005, NOAA Fisheries provided a preliminary fishway prescription requiring Chelan PUD to carry out its obligations, in their entirety, as set forth in the Rocky Reach HCP.

By letter dated March 14, 2005, Interior prescribed that Chelan PUD shall implement the construction, operation, maintenance, and effectiveness monitoring set forth in the Rocky Reach HCP. By letter dated June 1, 2005, Interior supplemented its prescription by prescribing upstream and downstream passage for bull trout and upstream passage for Pacific lamprey.

### **2.3.1.3 Section 4(e) Conditions**

Section 4(e) of the FPA gives the Secretaries of the Interior and Agriculture authority to impose conditions on licenses issued by the Commission for hydropower projects located on “reservations” under the respective Secretary’s supervision. See 16 U.S.C. §§ 796(2), 797(e).

By letter dated March 14, 2005, Interior on behalf of BLM submitted the following terms and conditions pursuant to Section 4(e):

1. Within 180 days from the effective date of the new license, develop a Protection, Mitigation, and Monitoring Plan for all cultural sites on BLM-administered lands adjacent to the Rocky Reach pool.
2. Within 180 days of the effective date of the new license, and by January 1 of each subsequent year, contribute to BLM a sum of \$20,000 and make available an additional sum of up to \$20,000 on a 50/50 matching basis for management of BLM lands within the Rocky Reach WA.
3. Within 180 days of the effective date of the new license, develop a Recreation Monitoring Plan for BLM-administered lands adjacent to the Rocky Reach pool. In the event that monitoring shows additional effects from the reservoir, develop and implement a protection and/or mitigation plan to address these effects; the plan is to approved by BLM prior to implementation.

By letter dated March 8, 2005, the Forest Service reserved its authority to issue revised terms and conditions in the event that Chelan PUD, the Forest Service, and other stakeholders enter into a settlement agreement.

Whether the Secretaries of Interior and Agriculture have authority to impose mandatory conditions pursuant to section 4(e) is a matter in dispute in this proceeding. We do not attempt to resolve that dispute in this NEPA document. Rather, we will analyze any purported section 4(e) conditions and make recommendations with respect to them as though they were recommendations made pursuant to FPA section 10(a). If section 4(e) authority issues are not resolved when the Commission is prepared to act on the license application, the Commission will take appropriate action at that time.

### **2.3.2 Staff Alternative**

After evaluating Chelan PUD's proposal and recommendations from resource agencies and other interested parties, we considered what environmental measures would be necessary or appropriate with continued operation of the project. We recommend including the following environmental measures proposed by Chelan PUD in any license issued for this project, but excluding certain specific elements of the measures, as noted:

1. Finalize and implement a Shoreline Erosion Management Plan;
2. Finalize and implement a Water Quality Plan;
3. Continue to implement the HCP for Rocky Reach to protect salmon and steelhead;
4. Continue to operate and maintain Rocky Reach anadromous fish passage facilities, including the new juvenile fish bypass system and the adult fish ladder;
5. Continue and enhance predator control programs at the project to minimize losses of anadromous fish to predation;
6. Finalize and implement a Rocky Reach White Sturgeon Management Plan (the timing of any hatchery construction would be established as part of the Plan);
7. Finalize and implement a Pacific Lamprey Management Plan;
8. Finalize and implement a Resident Fish Management Plan;
9. Continue to implement the Bull Trout Management Plan approved by the Commission on April 19, 2005;
10. Finalize and implement a Comprehensive WMP (not including habitat restoration and management at Chelan WMA or funding for BLM or Forest Service management);
11. Finalize and implement the Historic Properties and Cultural Resources Management Plan; and
12. Finalize and implement a Recreation Resources Management Plan (not including ballfield development or recreation fund).

In addition to Chelan PUD's proposed measures, we recommend the following refinements and additional environmental measures:

1. Conduct temperature monitoring from August through October for up to 3 years to facilitate modeling late summer and early fall temperature conditions;
2. Develop an operations plan and revise it annually until the state water quality standard for TDG is met to facilitate adaptively operating the project to benefit fisheries resources and reduce TDG;
3. Implement upstream Pacific lamprey passage activities, including annual passage counts and radiotelemetry counts every 10 years, and annually submit to the Commission a report summarizing results and offering proposals for fishway modifications if warranted to meet Pacific lamprey plan goals;
4. Develop and implement a plan to monitor and control aquatic invasive species;
5. Expand current eagle and goose nesting surveys to include other species and potential habitat enhancement projects;
6. Maintain the native habitat on Chelan PUD's Sun Cove properties in its current condition and bring the properties into the project boundary;
7. As an element of agency coordination under the Recreation Resources Management Plan, include provisions for WDFW recommendations for fencing at Lincoln Rock State Park and maintaining public overland access to the Eastbank hatchery outfall stream, using native plants for revegetation at Entiat State Park to the extent possible, and minimizing the removal of woody vegetation and impacts to riparian vegetation when siting the Entiatqua Trail;
8. Every 6 years, in concert with the FERC Form 80 filing, prepare a report summarizing the RR Recreation Forum and Forum subgroup discussions; submit the report to the stakeholders for comment; provide a response to any comments; and file the report with the Commission;
9. Include recreational use monitoring and ongoing assessment of other recreation-related effects on BLM lands within the project boundary as a component of the Recreation Resources Management Plan and every 6 years, in concert with the FERC Form 80 filing, include in the Recreation Forum report (see item 8 above) the results of recreation monitoring and proposals to mitigate any damage that can be substantively linked to project-related recreational use; and

10. Develop an information and education program as a component of the Recreation Resources Management Plan for project-related improvements to provide consistency for educational and interpretive opportunities developed as part of the Recreation Resources Management Plan.

## **2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY**

Other alternatives to the relicensing proposal were considered but eliminated from detailed study because they are not reasonable in this case. They are: (1) federal takeover and operation of the project; (2) issuance of a non-power license; and (3) project retirement.

### **2.4.1 Federal Takeover and Operation**

Federal takeover and operation of the project is not considered to be a reasonable alternative. Chelan PUD is a municipal entity, and therefore, federal takeover of the project was barred by Congress in the Act of August 15, 1953, 67 Stat. 587. Moreover, no party has suggested that a federal takeover would be appropriate, and no federal agency has expressed an interest in operating the project.

### **2.4.2 Nonpower License**

Issuing a nonpower license would not provide a long-term resolution of the issues presented. A nonpower license is a temporary license that the Commission would terminate whenever it determines that another government agency would assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. In this case, no agency has suggested its willingness or ability to do so. No party has sought a nonpower license, and the applicant has no basis for concluding that the project should no longer be used to produce power. Thus, in these circumstances, a nonpower license is not a realistic alternative to relicensing.

### **2.4.3 Project Retirement**

Project retirement could be accomplished with or without dam removal. Either alternative would involve denial of a license application and surrender or termination of an existing license with appropriate conditions. Dam removal has not been recommended by any party, and we have no basis for recommending it or studying it as an alternative.

The second project retirement alternative would involve retaining the dam and disabling or removing equipment that generates power. Project works would remain in place and could be used for historic or other purposes. This would require identifying another government agency with authority to assume regulatory control and supervision of the remaining facilities. No agency has advocated this alternative for the project,

though one interested party, the Columbia River Inter-Tribal Fish Commission (CRITFC), has recommended studying it. Because the power supplied by the project is needed in the region, a source of replacement power would have to be identified. In these circumstances, removal of the electric generating equipment is not considered a reasonable alternative.