

GABRIELA GOLDFARB CONSULTING

503.238.1711 ■ GABRIELA@GOLDFARBCONSULTING.COM ■ PORTLAND, OREGON

March 16, 2007

Fred Ayer, Executive Director
Low Impact Hydropower Institute
34 Providence St.
Portland, ME 04103

Subject: Final Application Reviewer Report for the Pelton Round Butte Hydroelectric Project

Dear Fred:

Attached please find my final reviewer's report on the application by the Portland General Electric Company and the Confederated Tribes of the Warm Springs Reservation of Oregon for certification of the Pelton Round Butte Hydroelectric Project by the Low Impact Hydropower Institute (LIHI). Please contact me if you have any questions or concerns about the report.

Best regards,

s//Gabriela

Gabriela Goldfarb

Attachment: as described.

Review of Low Impact Hydropower Institute Application for Certification: Pelton-Round Butte Hydroelectric Project

Introduction and Overview

This report reviews the application submitted by Portland General Electric Company and the Confederated Tribes of the Warm Springs Reservation of Oregon (applicant) to the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification for the Pelton Round Butte Hydroelectric Project (project or facility) located on the Deschutes, Metolius, and Crooked Rivers in Jefferson County, Oregon. The Federal Energy Regulatory Commission (FERC) issued the project a 50-year license in 2005 (FERC 2030-036) for the operation and maintenance of the 366.82 megawatt project, described as operating on a “modified run-of-river” basis. The license incorporated most, but not all the provisions of a wide-ranging settlement agreement among 22 organizations and government agencies covering operating conditions and long-term resource protection, mitigation, and enhancement measures at the project.

Project and site characteristics. The project, which is jointly owned and operated by Portland General Electric Company and the Confederated Tribes of the Warm Springs Reservation of Oregon, is located on the Deschutes River, a tributary to the Columbia River whose watershed drains 10,500 square mile region in north central Oregon. The project impounds approximately 9 miles of the Deschutes River, 7 miles of the Crooked River, and 13 miles of the Metolius River. The Project boundary encompasses a total of approximately 14,300 acres, with nearly 10,800 acres of that being undeveloped uplands managed for wildlife habitat. The majority of all project lands are federal, administered by the U.S. Forest Service and Bureau of Land Management, and tribal, mostly within the Warm Springs Reservation. Other property owners include Portland General Electric, the State of Oregon, and private citizens. Considering only shoreline along the project’s three impoundments, 55% is publicly-owned, 30% is owned by the Tribes, 5% is owned jointly by the applicants, and 10% is owned by private parties other than the applicants.

The Deschutes River and its tributaries are used by fall Chinook, spring Chinook, steelhead, kokanee, bull trout, Pacific lamprey, redband trout, and other fish species. The steelhead, bull trout, and Chinook that use the Deschutes River and its tributaries have been listed as threatened species pursuant to the federal Endangered Species Act (ESA).

The project consists of three developments located in sequence from upstream to downstream: the Round Butte, Pelton, and Reregulating developments, each with a powerhouse integral to its associated dam, and no bypassed reaches. (See below for more detailed information.) The Round Butte and Pelton developments are operated as peaking facilities, typically generating between the hours of 6 a.m. and 11 p.m. daily. The Reregulating development is operated to attenuate high and low peak flows produced by the upstream developments. Flow releases are controlled to maintain an average daily flow in the Deschutes River downstream of the Reregulating Dam that approximates the average daily inflow to the project.

Development & river mile	Dam	Impoundment	Powerhouse	Other
Round Butte (RM 110.4)	1,382-foot-long, 440-foot-high compacted, rock-filled embankment dam	4000 acre (535,000 acre-foot) reservoir, Lake Billy Chinook on the Metolius, Crooked, and Deschutes Rivers	Three 82.35-MW turbine generating units and one 70-kilowatt generating unit; total installed capacity: 247.12 MW.	Fish hatchery (Round Butte Hatchery) located adjacent to the dam.

Development & river mile	Dam	Impoundment	Powerhouse	Other
Pelton (RM 103.4)	636-foot-long, 204-foot-high concrete arch dam with a crest elevation of 1,585 feet mean sea level (msl);	7-mile-long, 540-acre (31,000 acre-feet) reservoir Lake Simtustus on the Deschutes River	Three turbine generating units with a total installed capacity of 100.8 MW.	n/a
Reregulating (RM 100.1)	1,067-foot-long, 88-foot-high rock-filled embankment dam with a spillway crest elevation of 1,402 feet msl;	2.5-mile-long, 190-acre (3,500 acre-feet) reservoir	One 18.9-MW, bulb-type turbine generating unit.	Non-operating 3-mile-long fishway extending from the tailrace upstream to the Pelton forebay.

Settlement agreement. As part of the relicensing the applicant and a group of 20 stakeholders signed in 2004 a negotiated a Settlement Agreement establishing the applicant’s obligations for the protection, mitigation and enhancement of natural resources, water quality, recreation, and cultural and historic resources affected by the project under the new license. The agreement also specifies procedures to be used among the all the parties to the Settlement Agreement to ensure the implementation of the new license consistent with the agreement, and with other legal and regulatory mandates. The stakeholder group consisted of:

- | | |
|--------------------------------------|--------------------------|
| US DOI Bureau of Indian Affairs | Jefferson County, Oregon |
| US DOI Bureau of Land Management | City of Bend, Oregon |
| US DOI Fish & Wildlife Service | City of Madras, Oregon |
| National Marine Fisheries Service | City of Redmond, Oregon |
| USDA Forest Service | Avion Water Company |
| Oregon Dpt. of Environmental Quality | American Rivers |
| Oregon Dpt. of Fish and Wildlife | The Native Fish Society |
| Oregon Water Resources Dpt. | Oregon Trout |
| Oregon Parks and Recreation Dpt. | Trout Unlimited |
| Deschutes County, Oregon | Waterwatch of Oregon |

The principal elements of the Settlement Agreement are:

- **General provisions** establishing the terms and conditions governing the relationship among the parties to the Settlement Agreement, including the establishment of a variety of implementation committees, an adaptive management framework to guide the implementation of untested mechanisms and approaches, and a dispute resolution process.
- **Operating conditions** setting stringent requirements for managing flows and reservoir levels, and monitoring and responding to long term low flow conditions primarily to benefit fishery resources and improve water quality.
- **Aquatic resources** requirements primarily to achieve fish passage and improve water quality, including many complex and experimental measures to be developed through an adaptive management process; the Fish Passage Plan with its requirement for a Selective Water Withdrawal Mechanism is the centerpiece of the aquatic resources provisions (see discussion below).
- **Terrestrial resource** management measures to achieve improvements to wildlife and watershed protection.
- **Recreation, aesthetic, and cultural resource** protection and improvement measures.
- **Lower Deschutes River** aquatic habitat improvements.
- **Establishment of a Pelton Round Butte Fund** to underwrite projects that produce instream flows that benefit aquatic habitat and for other mitigation and enhancement projects for fish and wildlife

resources and habitats affected by the project.

The mechanism at the heart of many of the environmental gains sought by the Settlement Agreement is the “Selective Water Withdrawal Facility” (SWW) to be constructed in Lake Billy Chinook approximately 700 feet upstream of Round Butte Dam. The SWW, which is called for in the context of the Settlement Agreement’s Fish Passage Plan, will be a 270-foot tall tower capped by an intake module that collects migrating fish and separately sends water to the generators. Construction of the SWW, estimated to cost \$60 million and currently in detailed engineering planning phase, is expected to begin in fall of 2008, and to be operational sometime in 2009. The SWW is projected to deliver numerous benefits, most of them deriving from the new ability to draw and blend a combination of water from the surface and at depth in the impoundment (instead of only at depth, which is currently the case), to alter the currents in Lake Billy Chinook, and to trap fish migrating downstream. The inability of fish to find their way downstream from the upper Deschutes, Metolius, and Crooked Rivers once they hit the swirling currents of Lake Billy Chinook is suspected as the reason downstream passage did not work in the past. The modeling studies carried out by the applicant and accepted by the resource agencies project that the SWW will:

- **Improve water quality in Lake Billy Chinook** by drawing warmer water off the surface to blend with cold water drawn at depth, cooling overall temperatures in the lake and improving dissolved oxygen levels in all the reservoirs. If needed, selective spills will be implemented at the Reregulating Dam to ensure that project discharges to the lower Deschutes River comply with dissolved oxygen standards.
- **Improve water quality below the project** by improving temperature and dissolved oxygen conditions in the lower Deschutes River and eliminating any project impact on these criteria in this reach. The SWW is expected to shift the annual temperature patterns of the water released from the project’s Reregulating Dam towards pre-project patterns, improving aquatic habitat in the project’s reservoirs and in the lower Deschutes River.
- **Achieve downstream passage of anadromous and riverine fish** by using an optimum “blend” of surface and deep water withdrawal that reorients reservoir currents in Lake Billy Chinook to guide downstream migrants to a collection facility prior to transport below the project.

An accompanying monitoring regime, specified in a Water Quality Management and Monitoring Plan called for in the Settlement Agreement and incorporated as a requirement of the FERC license, is designed to achieve five objectives:

1. To determine project compliance with state and tribal water quality standards and the Clean Water Act Section 401 certifications.
2. To collect water quality data to aid in the identification of adaptive management measures needed to ensure compliance with water quality standards and the 401 certifications.
3. To continue to collect water quality data at sites that have been used in other baseline studies to determine if trends exist related to the project or other sources of impacts.
4. To collect water quality data that can be used for other aquatic studies related to reintroduction of anadromous fish.
5. To collect data on *E. coli* that will be provided to the appropriate recreation facility managers.

Complementing the downstream passage aspects of the SWW are a number of other measures intended to achieve upstream passage of fish and their reintroduction, after 50 years, to 226 stream miles of habitat above the project (contingent in part on installation of a fish ladder at Opal Springs Dam on the Crooked River). The measures, also contained in the Settlement Agreement’s Fish Passage Plan, are intended to

secure the return of spring Chinook and sockeye salmon to the Metolius River and steelhead to the Crooked River (to Bowman Dam) and the Deschutes River (to Big Falls near Redmond), as well as the conversion of currently land-locked kokanee to sockeye salmon. Initially, adult salmon and steelhead returning to the Deschutes will be captured at the Reregulating Dam, then trucked upstream past the dams to an adult release facility at the Round Butte forebay. Once the SWW and associated permanent downstream passage facilities are completed, and if they are found to operate as anticipated, the applicant is to study the feasibility of replacing the trap-and-haul upstream system with mechanisms to achieve volitional upstream passage.

It is important to underscore the experimental nature of the measures called for in the agreement, and the reliance on adaptive management techniques to drive the evolution and implementation of the Fish Passage Plan and other plans. There are multiple decision points and fallback provisions, especially in regards to all the fishery provisions. Success (or failure) in this project has implications for fish restoration at high-head dams throughout the West.

Public comment and agency letters. LIHI received one comment letter jointly sent by American Rivers and Trout Unlimited, both signatories to the comprehensive settlement agreement for this project. The writers did not raise concerns about the applicant's conduct (their letter expressed support for the applicant's ongoing efforts to implement the agreement). Instead, they identified a potential concern in the context of this project and other certification applications LIHI may face in the future that include fish reintroduction programs which are in turn dependent in part on hatchery programs. The writers expressed concern that under LIHI's current criteria, reintroduction programs required by a settlement agreement may help a project meet LIHI criteria, but the hatchery elements which are an essential component of the reintroduction program may not have undergone regulatory review under the Endangered Species Act (ESA). Delays to the hatchery review process may delay the implementation of the fishery reintroduction program. The writers urged the LIHI board to "consider the relationship between reintroduction programs, which are often deemed critical for determinations regarding LIHI certification, and assurances provided by the ESA" and that the LIHI criteria be revised to address this tension. The letter raised no concerns in the context of this certification review.

General conclusions. The natural resource agencies and environmental organizations contacted in the course of reviewing this application for LIHI certification, all of them parties to the Settlement Agreement, were unanimous in commending the applicant for fidelity to the letter and the spirit of the agreement, and in confirming diligent implementation of the agreement's provisions. While acknowledging the rigorousness of Settlement Agreement negotiations, several stated that their experience working with the applicant was the most cooperative they had ever experienced in relicensing a project, and that they believe the applicant is committed to environmental protection and "doing the right thing." All noted implementation delays, but identified the causes as outside the applicant's control, including challenges arising from the complex and experimental nature of the fish reintroduction components of the project, a current difference of opinion among the stakeholders about one component of the reintroduction plan, and the need to negotiate terms for an alternative to an instream habitat improvement project specifically called for in the agreement that fell through because a neighboring landowner pulled out of the deal. Several said that they were very encouraged that the applicant has responded to these early "bumps" by working through them in collaboration with the resource agencies and the other stakeholders. At the same time, all those consulted suggested that because of the project's complexity, it would be important to monitor implementation in the future, with special attention to two elements:

- Timely completion of Endangered Species Act review of the hatchery-related components of the reintroduction plan.

- A continued ability to comply with the new operating requirements in the face of long term low flow conditions resulting from climate change and/or the effects of expanded water use in the upper Deschutes River basin due to population growth and attendant urbanization.

Recommendation. Based on my review of information submitted by the applicant, my review of additional documentation, and my consultations with resource agency staff and other stakeholders, I believe the Pelton Round Butte Hydroelectric Project meets all of the criteria to be certified and I recommend certification. In addition, the applicant has met the Watershed Protection criteria (section D below), and qualifies for an additional three years of certification.

Low Impact Certification Criteria

A. Flows

- 1) Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?**

YES

The FERC license incorporates strict requirements limiting stage changes, gaging of project inflow and outflow, procedures during long-term low flow conditions, and seasonal drawdown and fluctuation limits. These requirements constrain the project's ability to alter the flow patterns in the Deschutes River below the project. The relevant Settlement Agreement provisions incorporated in the FERC license were consistent with the conditions of two Clean Water Act Section 401 certifications, one issued by the Oregon Department of Environmental Quality (ODEQ) and the other by the Confederated Tribes of the Warm Springs Natural Resources Department, Water Control Board (WCB). Where the two certifications differed, the more stringent provisions were included. Resource agency staff consulted in the course of this review commented on the stringency of the operational requirements and diligence with which the applicants were complying with them. Key elements of the provisions include requirements to:

- Install new and upgraded gages to improve the accuracy of measurements.
- Maintain average minimum flows equal to specified monthly target flows, or inflow to Lake Billy Chinook, whichever is less.
- Adjust minimum outflows from the Reregulating Development on a daily basis.
- Maintain river flows downstream of the Reregulating Development to within plus or minus 10 percent of average daily inflow to Lake Billy Chinook under most circumstances.
- Augment outflows at specified levels when needed to benefit fall Chinook salmon.
- Track indicators of predicted long term low flow conditions in the lower Deschutes River to anticipate conditions lower than historically observed.
- Provide a specified allowance to refill Lake Billy Chinook (accounting for reduced inflows) to meet a summer operating policy for maintaining the lake's elevation between mid-May and mid-September.

If YES, go to B.

PASS.

B. Water Quality

1) Is the Facility either:

- a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or**
- b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?**

YES

ODEQ and WCB staff confirmed that to date the applicant is in compliance with all terms of the 401 certifications issued by each agency and incorporated into both the Settlement Agreement and FERC license articles.

If YES, go to B2.

- ### **2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?**

YES

In the State of Oregon's 2004/2006 Integrated Report and Section 303(d) list of water quality limited waters (submitted in May 2006 for approval to the Environmental Protection Agency, but not yet approved) Lake Billy Chinook and Lake Simtustus are both listed for chlorophyll (nuisance phytoplankton) and pH. The Deschutes River is listed as impaired for pH, temperature, and dissolved oxygen downstream of the project, and for temperature upstream of the project starting at river mile 110 (the Round Butte Development is at river mile 116).

If YES, go to B3.

- ### **3) If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?**

ODEQ and WCB staff have confirmed that the applicant is complying with all requirements of the 401 certifications to date; so long as that is the case, the project is deemed legally to be meeting state and tribal water quality standards.

Discussion:

Note that the listings cited above reflect those stretches and water bodies for which the regulatory agencies had data to support a listing. In reality, ODEQ staff, and the applicant itself in documentation submitted to LIHI, acknowledge that the project has historically affected other waters within the project area, citing in particular temperature and dissolved oxygen. However, the certifications, and the agency staff consulted in the course of this review, anticipate that, once constructed and operating, the Selective Water Withdrawal Facility will result in the project in fact meeting the temperature, dissolved oxygen, and pH criteria in the Deschutes River below the project.

Regarding pH in the impoundments, the WCB 401 certification observes that Lake Billy Chinook and Lake Simtustus are exempt from the pH standard:

...because the reservoirs existed as of January 1, 1996, and the exceedance of the pH standard occurs as a result of the impoundment in response to primary productivity supported by nutrients that arise from sources not associated with the impoundment. With the implementation of selective water withdrawal, the Joint Applicants will have taken all practicable measures to bring pH in the impounded waters into compliance with the criterion. The WCB is reasonably assured that the discussed pH criteria will be met with implementation of mitigation measures outlined above and with the implementation of the Water Quality Monitoring and Management Plan.

ODEQ staff noted that the impoundments retain the contributors to pH problems, preventing worse pH levels in the Deschutes River downstream of the Reregulating Development.

With regards to temperature, ODEQ staff consulted concurred with language in the WCB 401 certification stating that “naturally-occurring temperatures ... may be adversely and indirectly affecting water quality within and downstream of the Project.” The ODEQ staff person said that once the Selective Water Withdrawal facility is operating, the likelihood of the project being the source of temperature problems downstream will be further diminished.

If YES, go to C.

PASS.

C. Fish Passage and Protection

1) Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?

YES

All relevant resource agency staff consulted confirmed that the applicant is complying with requirements to develop passage facilities for anadromous fish. Species intended to benefit from those facilities are fall and spring Chinook salmon, sockeye salmon, summer-run steelhead trout, and Pacific lamprey. See discussion of the Settlement Agreement, above.

If YES, go to C5.

5) Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and/or downstream passage of *Riverine* fish?

YES

All relevant resource agency staff consulted confirmed that the applicant is complying with requirements to develop passage facilities for riverine fish. Species intended to benefit from those facilities include bull trout, inland redband trout, and mountain whitefish. See discussion of the Settlement Agreement, above.

If YES, go to C6.

6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?

YES

All relevant resource agency staff consulted confirmed that the applicant is complying with requirements for fish entrainment protection through a combination of upgrading existing and designing new mechanisms to prevent entrainment, and modifying operating practices (e.g., not operating a deep intake during the spring months that are the primary out-migration time for anadromous species).

If YES, go to D

PASS.

D. Watershed Protection

1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline

NO

While the applicant meets the overall watershed protection criteria through its compliance with criterion D.2. (see below), the case can be made that the combination of tribal, federal (U.S. Forest Service and Bureau of Land Management), and state (Oregon Parks and Recreation Department) ownership of the majority of project lands, including the shoreline, together with numerous resource management plans predating or resulting from the project's relicensing, provide protection equivalent to criterion D.1. Plans include pre-existing Warm Springs Reservation Integrated Resource Management Plans and USFS and BLM management plans, the 1999 Pelton-Round Butte Comprehensive Management Plan (a product of pre-relicensing consultation among federal, tribal, and state agencies having management responsibilities in the Project vicinity to promote coordination and improvements in addressing recreation, land use, and aesthetic/visual resource issues), and plans arising from the Settlement Agreement itself, including: Terrestrial Resources Management Plan, Shoreline Management Plan, Shoreline Erosion Plan, Law Enforcement Agreement, Lower River Gravel Study and Pilot Augmentation Plan, and Lower River Large Wood Management Plan.

If NO = go to D2

2) Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1., and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?

YES

Under the terms of the Settlement Agreement and the FERC license for the project, the applicant agreed

to make contributions totaling \$21.5 million (in 2003 dollars) over the term of the new license to establish the Pelton Round Butte Fund. This amount is to be divided among two components; a General Fund totaling \$11.5 million and a Water Rights Fund totaling \$10 million.

Expenditures from the General Fund must be approved by an 11-member Governing Board consisting of the applicant and representatives of parties to the Settlement Agreement. Grants are restricted to projects in the Deschutes River basin (including the middle and lower Deschutes River, the Crooked River, the Metolius River, and any tributaries to those river segments), and in general must meet one of the following criteria:

- Land acquisition or lease of riparian areas, wetlands, and uplands.
- Water rights acquisition.
- Water conservation projects that yield legally protected instream water rights.
- Acquisition and purchase of conservation easements.
- Construction of fish passage facilities and removal of fish passage barriers.
- Instream fish habitat improvements.
- Riparian and wetland protection and enhancement.
- Off-project recreation impacts.

General Fund projects will be identified, approved, and funded in the following order of priority:

1. Activities upstream of the project that will support the anadromous fish reintroduction program by helping to achieve a self-sustaining Chinook salmon population and a sustainable salmon harvest.
2. Activities in the lower Deschutes River mainstem and tributaries that increase the likelihood of adult and juvenile salmonid survival as the fish pass through the project to and from the upper basin.
3. Activities that enhance existing or reintroduced populations of resident and anadromous fish and terrestrial wildlife above and below the project.

The Water Rights Fund, with the same geographic restrictions, is to be used exclusively to acquire or lease instream water rights, or participate in water conservation projects that result in instream flows that benefit aquatic habitat. Water rights acquisitions must go instream at times and locations that improve aquatic habitat beyond existing conditions, and must result in a net benefit to aquatic resources. Unlike the General Fund, the Water Rights fund is to be administered by the applicant in consultation with appropriate resource agencies

If YES = Pass, go to E and receive 3 extra years of certification

PASS.

E. Threatened and Endangered Species Protection

1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?

YES

Resource agencies have determined that two species listed under federal and state endangered species laws, bull trout and steelhead trout, are subject to project-related adverse effects.

If YES, go to E2.

- 2) **If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?**

NOT APPLICABLE

There are no completed recovery plans for bull trout or steelhead trout.

If NOT APPLICABLE, go to E3.

- 3) **If the Facility has received authority to incidentally *Take* a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?**

YES

The project has received authority to incidentally take bull trout and steelhead as a result of U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) ESA Section 7 consultations with FERC in the course of the relicensing of the project. Agency officials report that the applicant is in compliance with all conditions pursuant to that authority and the biological opinions of each agency.

If YES, go to E4.

- 4) **If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:**
- a) **The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or**
 - b) **The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or**
 - c) **There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or**
 - d) **The recovery plan under active development will have no material effect on the Facility's operations?**

YES

The biological opinions of FWS and NMFS, both of which incorporated Settlement Agreement provisions, were accompanied by a FERC license.

If YES, go to F

PASS.

F. Cultural Resource Protection

- 1) **If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural**

Resource protection, mitigation or enhancement included in the FERC license or exemption?

YES

Both the Warm Springs Tribal Historic Preservation Officer and staff of the Oregon State Historic Preservation Office confirmed that the applicant is complying with the provisions of the Cultural Resources Management Plan and Programmatic Agreement among FERC, the Advisory Council on Historic Preservation, the Oregon State Historic Preservation Officer, and the Warm Springs Tribal Historic Preservation Officer for managing historic properties that may be affected by the project.

If YES, go to G.

PASS.

G. Recreation

1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?

YES

The FERC license incorporated most, but not all, of the recreation-related Settlement Agreement requirements, including the development of a Recreation Resources Implementation Plan in consultation with a Recreation Resources Working Group of stakeholders. The Plan defines the roles and responsibilities of the applicant and other recreation providers in the area for providing, enhancing, and managing recreation resources in the project area (primarily in and around Lake Billy Chinook and Lake Simtustus), and lists specific recreation measures and protocols for improving accessibility, operations and maintenance, management, and resource coordination over the term of the project license.

The Plan also seeks to ensure a stable level of recreation use of Lake Billy Chinook and Lake Simtustus and compatibility of recreation uses with other resource management objectives captured in a number of relicensing-related plans (e.g., Terrestrial Resources Management Plan, Shoreline Management Plan, Shoreline Erosion Plan), and the 1999 Pelton-Round Butte Comprehensive Management Plan (a product of pre-relicensing consultation among federal, tribal, and state agencies having management responsibilities in the Project vicinity to promote coordination and improvements in addressing recreation, land use, and aesthetic/visual resource issues).

The applicant and stakeholders are currently negotiating an agreement confirming the applicant's commitment to comply with elements of the Settlement Agreement that FERC did not include as license requirements. These include financial support for non-project recreational facilities that serve as alternative destinations away from the project, such as funding to USFS for use at Haystack Reservoir, located approximately 12 miles from the project, BLM for site improvement at several BLM-managed recreation areas on the lower Deschutes River, and both USFS and Jefferson County for road maintenance activities on roads affected by project-generated traffic (including recreation-related traffic).

If YES, go to G3.

3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?

YES

The applicant provides public access to project waters without fee or charge.

If YES, go to H.

PASS.

H. Facilities Recommended for Removal

1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?

NO

There is no resource agency recommendation for removal of the project.

If NO, facility is low impact.

PASS.

FACILITY IS LOW IMPACT

RECORD OF CONTACTS

Date of Conversation: February 27, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Paul DeVito, DEQ
Telephone/email: 541-388-6146 x257
Areas of Expertise: 401 Certification

Mr. DeVito wrote the 401 certification and primarily interfaces with the project through his participation on the Fish Committee. He reported that the applicant is on track with its compliance requirements, commenting particularly on the design of the SWW facility, collection facility, and gaging improvements. With respect to the collection facility, problems that became apparent with its design led to its redesign which will be an improvement over the original, and though it is causing a delay in the project, he believes the delay is justified because of that improvement. The 401 cert allows such delays for “good cause.” In general, and based on his experience working with other hydro projects, PGE stands out positively for its responsiveness and timely provision of good quality studies.

Date of Conversation: February 27, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Bill Bakke, Native Fish Society
Telephone/email: bmbakke@qwest.net
Areas of Expertise: Fisheries

In response to my voicemail message and follow up email, Mr. Bakke emailed me the following: “I was involved with this project, however, a better person for you to discuss this with would be Brett Swift of American Rivers. I work closely with her because she is our official representative on this project. I would be glad to speak with you, but you may get more satisfaction from Brett.” I responded that I would follow up with Brett.

Date of Conversation: March 6, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: John DeVoe, Waterwatch of Oregon
Telephone/email: john@waterwatch.org
Areas of Expertise: River protection

Mr. DeVoe sent the following email:

Unless there is some compelling need to interview WaterWatch on this, Brett Swift at American Rivers can serve as our proxy and you can direct whatever questions you had for us to her. Kimberley Priestley and Brett coordinate closely on PRB. Brett has been doing the lifting on this aspect of the PRB work for us.

Date of Conversation: March 7, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Jan Houck, Oregon Parks and Recreation Department
Telephone/email: 503-986-0742
Areas of Expertise: Rivers Program, Resource Management

Ms. Houck took over from the retired Steve Brutscher who was the OPRD staff directly involved in Pelton Round Butte Settlement Agreement negotiations. Ms. Houck said that at this point all the interaction with the applicant was process-oriented, in terms of setting up mechanisms for receiving payments, etc., but that so far everything appears to be on track for compliance with the Settlement Agreement from OPRD's perspective.

Date of Conversation: March 9, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Brett Swift, American Rivers, Kaitlin Lovell, Trout Unlimited
Telephone/email: (Brett) (503) 827-8648 and (Kaitlin) (503) 827-5700 ext. 13
Areas of Expertise: Fishery, river, watershed, hydro relicensing

Ms. Swift and Ms. Lovell both conveyed their belief that the applicant is executing the letter and spirit of the FERC license and the Settlement Agreement, including in negotiating a separate agreement confirming the applicant's intent to implement the elements of the Settlement Agreement that FERC did not incorporate in the license. Foremost among those elements is the agreement regarding alternative mitigation if the engineered solutions to overcome barriers to fish passage cannot be overcome. There have been some minor delays in implementation, but those have been for cause, in particular, the need to resolve technical issues deriving from the engineering challenges of the fish reintroduction elements of the project. Another example is the applicant's efforts to acquire water rights being stymied by problems in finding willing sellers. In general, the applicant is doing everything possible to comply with and implement the Settlement Agreement measures, but forces outside their control may at times slow compliance. One obstacle that seems to have been overcome is that a lack of clarity over who was to take the lead on the fish reintroduction project hampered progress. The applicant has now hired a facilitator (Debra Nudelman, who facilitated the Settlement Agreement) and technical consultant (Chuck Huntington, of Clearwater Biostudies) and Swift/Lovell expect expeditious progress. They reported that the Pelton Round Butte Fund is up and running and already awarded its first set of grants. They described the new flow regime as concentrating on controlling the rate of refilling the reservoir and drawdown, and identified the motivation behind the Long Term Low Flow trigger as being not only impact of climate change, but also population growth in the upper Deschutes basin (especially Redmond area) that might impact water availability in the Deschutes.

Date of Conversation: March 9, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Amy Stuart, ODFW
Telephone/email: 541-447-5111, ex 27 or cell 541-410-5473
Areas of Expertise: Fisheries

Ms. Stuart said that of all the licensees she has worked with, PGE has been excellent. She said PGE has been diligent in implementing its responsibilities under the Settlement Agreement and FERC license. She commented that agreement should be reached in the next month or two on a new agreement re-committing the parties to the elements of the Settlement Agreement that FERC did not incorporate in the

license. She described the fish reintroduction program as a “huge experiment” with many questions still to resolve, and expressed doubts about the long-term feasibility of trap-and-haul to address fish passage if the reintroduction plan for volitional passage does not work. She said that while all the stakeholders and the applicants share a common vision of restoring fish, some details are being bickered over, with the source being ODFW and the Tribe’s natural resource branch; she thinks issues will be resolved. She described the new flow requirements as being extremely tight, high standards that the applicant is meeting.

Date of Conversation: March 9, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Rod Bonacker, U.S. Forest Service
Telephone/email: 541-549-7729
Areas of Expertise: Fish, watershed, wildlife

Mr. Bonacker said that applicant is complying with the letter and the spirit of the Settlement Agreement, and everything implemented to date has gone by the book. He said that “compared to any other hydro project, PGE is the best partner we’ve ever had,” and that they have demonstrated a genuine concern and attention to the project’s effects on the environment. Where there have been issues open to interpretation, the applicant has opted for measures consistent with the spirit of the agreement. He is very impressed with the dedication of the applicant to meeting the very stringent new flow requirements. When asked if any of the Settlement Agreement parties are of a different opinion, he suggested that the Bureau of Indian Affairs, by virtue of their unique trust responsibilities to tribes, were put in the position during the Settlement Agreement negotiations of advocating for greater certainty, when other stakeholders were more comfortable with flexibility in allowing project details to be resolved through future negotiations/adaptive management processes necessitated by the experimental nature of the fish reintroduction program. When asked about any current problems in implementing the agreement, he said they were not serious and should be resolvable. One is a disagreement that had to be resolved about funding levels for an off-project Trout Creek in-stream habitat improvement project (PGE was going to pay \$1.5 million for a project involving land owned by PGE and by a neighboring landowner; at the last minute, the neighbor rejected the project; PGE found an alternative project with similar, though less benefits for \$750,000 and they and the stakeholders need to work out whether the applicants are responsible to invest an amount of money equivalent to the original project or not). The other issue has to do with a disagreement among the stakeholders about an element of the fish reintroduction program; ODFW and the tribes are questioning the approach to implement aspects of the agreement they are responsible for, and there is no consensus as yet among the rest of the stakeholders on the topic. In the face of disagreement among the stakeholders, the applicant is unwilling to deviate from the provisions of the Settlement Agreement. When asked about issues that should be monitored as potential problems in the future, he noted three: 1) the implications of any future change in ownership of PGE; 2) How the “Water Rights Fund” projects underwritten by the Pelton Round Butte Fund are implemented and monitored (see below); and 3) what will happen if there is a series of bad water years (low flows) that make it too difficult for the project to comply with the flow requirements, even with provisions built into the Settlement Agreement to address such a contingency. The Settlement Agreement and license require the applicants to make payments on a specified schedule to establish the Pelton Round Butte Fund. The fund is divided between “General Fund” projects approved by a Governing Board made up of the stakeholders, and a “Water Rights Fund” to be used by the applicant for projects that result in instream flows that benefit aquatic habitat. The Governing Board has no review or approval authority over water rights projects, though projects must meet criteria in the Settlement Agreement. Mr. Bonacker suggested the need to monitor the implementation to make sure that projects meet the intent of the Agreement.

Date of Conversation: March 9, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Scott Carlon, NMFS
Telephone/email: 503-231-2379
Areas of Expertise: Fisheries

Mr. Carlon believes that the applicants are meeting the spirit and the letter of the license and Settlement Agreement, and noted that difficulties that are arising are not related to the applicants. Those difficulties include: 1) technical challenges associated with a complex and experimental reintroduction program; 2) a dispute among stakeholders about a hatchery component of the reintroduction plan in which the tribal and state fish agency plans management of bull trout and kokanee differ from the Settlement Agreement. The Fish Committee established by the Settlement Agreement and license is working to resolve the disagreement and arrive at an approved reintroduction plan by the fall, when the applicant is required to comply with a FERC deadline to submit the plan. Mr. Carlon mentioned side agreements related to the implementation of the Trout Creek instream habitat improvement/water rights project (original project fell through, applicant and stakeholders are negotiating funding and other issues regarding a replacement project) and another agreement to incorporate elements of the Settlement Agreement that FERC did not include as license articles. In general, Mr. Carlon believes the applicant has worked hard to implement the agreement and “wants to do the right thing.”

Date of Conversation: March 12, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Peter Lickwar, U.S. Fish and Wildlife Service
Telephone/email: 541-312-6422
Areas of Expertise: Fisheries, threatened & endangered species

Mr. Lickwar confirmed that the applicant has done well in living up to the requirements of the Settlement Agreement/FERC license and FWS biological opinion for bull trout, the principal species of concern for FWS. He observed that there is “a lot to do,” and that the applicant has conscientiously carried out activities, but that in any endeavor so complicated there are bound to be unexpected problems. What is most important, in his opinion, is that the problems are worked through collaboratively and productively with the resource agencies and stakeholders, and so far the applicants have developed a good track record of doing just that. Regarding ways in which FWS priorities were affected by FERC not adopting Settlement Agreement in its entirety, Mr. Lickwar said that many elements were section 18 requirements, and so were mandatory. In general, because of overlapping authorities, he felt that if one agency wasn’t able to impose as a mandatory condition an element it wanted, another agency was able to do so under its authority. He also commented on the importance of the project as a demonstration of how to achieve passage over high-head dams; if Pelton Round Butte is successful, there are implications throughout the West for recovering salmonid habitat.

Date of Conversation: March 12, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Mary Graine, Oregon Department of Water Resources
Telephone/email: 503-986-0833
Areas of Expertise: Water quantity, water rights

Ms. Graine said she thought that so far the applicant was living up to the requirements of the Settlement Agreement. She explained that DWR's primary involvement was in the negotiation of the agreement, and that ODFW and DEQ are the state agencies with primary involvement in the implementation phase.

Date of Conversation: March 12, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Sally Bird, Cultural Resources Office, Confederated Tribes of the Warm Springs Reservation
Telephone/email: 541-553-3555, sbird@wstribes.org
Areas of Expertise: Tribal cultural resources

Ms. Bird confirmed that the applicants are complying with the cultural resource protection requirements of the project's FERC license and Settlement Agreement.

Date of Conversation: March 12, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Jennifer Frozena, NW Regional Office, Bureau of Indian Affairs
Telephone/email: 503-231-6750
Areas of Expertise: Tribal and natural resource issues.

Ms. Frozena was involved in the Settlement Agreement negotiations and FERC relicensing process both in her work for BIA and in a previous position with FWS. She noted frustration on BIA's part during the negotiation process over their interest in making the agreement less subject to interpretation (i.e., would have wanted provisions codified in 4(e) conditions). However, post-Settlement Agreement/FERC license she reported that in general the applicant has been forthcoming and is meeting all implementation responsibilities. She noted some process issues that needed attention: the applicant is in some cases handling implementation activities directly, and in other cases using hired facilitators.

Date of Conversation: March 13, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Paul DeVito, ODEQ (2nd call)
Telephone/email: 541-388-6146
Areas of Expertise: Water Quality

In a follow up phone call, Mr. DeVito responded to a series of questions with the following information:

- The downstream waters affected by the project vary depending on the parameter. The project affects temperatures below the Reregulating Development all the way to river mile 0, affects pH till somewhere between river mile 88 and river mile 50, and stops affecting dissolved oxygen by river mile 88.

- The upstream waters affected by the project include the Metolius River up to river mile 13, the Crooked River up to river mile 7, and the Deschutes River up to river mile 125 (9 miles upstream of the Round Butte Development at river mile 116).
 - Chlorophyll/nuisance phytoplankton in the impoundments is caused by nitrogen runoff from non-project upstream sources. Because the phytoplankton is retained in the impoundments, there is less problem with pH changes, which result from phytoplankton growth, below the project.
 - He agrees w/the Tribe's (Water Control Board) text in their 401 cert that temperatures below the project are likely high because of natural conditions characteristic of east side streams; little shade, lots of solar gain.
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Date of Conversation: March 13, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Dee Sehgal, Natural Resources Program, Confederated Tribes of the Warm Springs Reservation
Telephone/email: 541-553-2022
Areas of Expertise: Water quality, PRB Settlement Agreement

Mr. Sehgal confirmed that the applicant has, to date, complied with the terms of the 401 certification, which incorporated Settlement Agreement provisions, in particular those related to water quality, flows, and fishery restoration. He noted the incorporation of and respect for the Tribe's Integrated Natural Resources Management Plan as part of the Settlement Agreement and FERC license, and in general the collaborative nature of the relicensing process that resulted in what he believes is the best protection for natural resources affected by the project.

Date of Conversation: March 13 and 16, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Rosemary Mazaika, Bureau of Land Management, Oregon State Office (by way of Molly Brown, Deschutes Field Manager, Bureau of Land Management, Prineville District)
Telephone/email: (503) 808-6076, rmazaika@or.blm.gov and (541) 416-6766, Molly_Brown@blm.gov
Areas of Expertise: Fish and wildlife

Molly Brown forwarded an email with text from Rosemary Mazaika (Ms. Brown forwarded to Ms. Mazaika notes I provided from my conversation with Rod Bonacker, USFS). After further consultation with BLM counsel, Ms. Mazaika forwarded the following revised text:

The BLM agrees that PGE is upholding the spirit of the Settlement Agreement, convening stakeholders involved in the Pelton Round Butte relicensing and settlement negotiations at every phase of the FERC proceeding.

PGE has demonstrated a genuine concern and attention to the project's effects on the environment. Where there have been issues open to interpretation, the applicant has solicited stakeholder input again to assure mitigating measures are consistent with the spirit of the agreement.

The BLM expects other issues to arise under the Settlement Agreement, such as project ownership, implementation of the Water Rights Fund, and complications that might arise

if there is a series of bad water years. BLM expects to work with PGE and other parties to the Settlement to resolve these issues as they arise.

Date of Conversation: March 13, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Brett Brownscombe, Conservation Director, Oregon Trout
Telephone/email: brett@ortrout.org
Areas of Expertise: Fish and wildlife conservation

Mr. Brownscombe emailed the following:

I have been monitoring the settlement agreement / implementation thereof through Brett Swift. I read the documents when I can but generally defer to Brett S's recommendations. Although she checks in w/ me and makes sure we're informed before speaking for us, I would feel confident saying she represents OT's concerns and interests pretty well. The issues she and Kaitlin provided re. things to track into the future would . Only other things I can think of at the moment are: Kokanee populations in Lake Billy Chinook (need to address the issues there re. Bull Trout and population viability; I have enjoyed working w/ PGE's Don Ratliff; the ESA fish recovery plan issue / hatchery program issues are big ones.

Date of Conversation: March 13, 2007
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Sarah Jalving, CLG Coordinator, Review & Compliance
Oregon State Historic Preservation Office
Telephone/email: Sarah.Jalving@state.or.us
Areas of Expertise: Historic preservation

Ms. Jalving sent the following email:

I have searched our database concerning the Pelton Round Butte Hydro project, and the above-ground portion of the cultural resource review. It appears that PGE and the Tribe's compliance with the Pelton Round Butte Cultural Resources Management Plan and the programmatic agreement are in order. I am forwarding your email and my response to our staff archaeologists, so that they can comment on the project's archaeological concerns.