

FISH PROPAGATION FACILITIES PLAN
Settlement Agreement Article 101
BAKER RIVER PROJECT, FERC No. 2150



Puget Sound Energy
Bellevue, Washington

31 August 2009



PUGET SOUND ENERGY
The Energy To Do Great Things

FISH PROPAGATION FACILITIES PLAN Settlement Agreement Article 101

BAKER RIVER PROJECT FERC No. 2150

Puget Sound Energy
10885 N.E. 4th Street
Bellevue, Washington
98004-5591

31 August 2009



CONTENTS

List of Figures iv

List of Tables iv

Acronyms and Abbreviations v

1.0 Executive Summary 1

2.0 Introduction 1

 2.1 Overview 1

3.0 Basis for the Plan 5

 3.1 SA 101 - Fish Propagation 5

 3.2 Relationship to Other Articles of the License and Settlement Agreement 7

4.0 Goals 8

 4.1 Key Elements of SA 101 8

5.0 Regulatory Reference and Definitions 9

 5.1 Federal Authority and Reference 9

 5.2 Washington State Authority and Reference 9

 5.3 Definitions 9

6.0 Plan Implementation 9

 6.1 Plan Area 9

 6.2 Funding 9

 6.3 Provisions for Development and Modification of the Fish Propagation Facilities Plan 9

 6.4 Procedures, Standards, and Criteria 10

 6.4.1 SA 101(a) Modify Sockeye Spawning Beach 4 10

 6.4.2 SA 101(b) Construct Additional Fish Culture Facilities at the Sulphur Springs site 11

 6.4.3 SA 101(c) Provide Operations to Sequentially Develop Sockeye Fry Production 12

 6.4.4 SA 101(d) Maintain, Then Restore Natural Conditions at Spawning Beaches 1, 2 and 3 13

 6.4.5 SA 101(e) Implement Fish Propagation Programs as Directed by the Fish Co-Managers 14

 6.4.6 SA 101(f) Reservoir Nutrient Enhancement Program 14

 6.4.7 SA 101(g) Fish Facility Operations Manual 15

 6.4.8 SA 101(h) Fisheries Enhancement Program Operational Protocols 15

 6.4.9 SA 101(i) Fisheries Enhancement Program On-site Manager 18

 6.5 Schedule 19

 6.6 Rationale 19

 6.7 Monitoring, Maintenance, and Management 20

7.0 Reporting 20

8.0 References and Literature Cited..... 21

9.0 Comments and Responses from the Formal Plan Review 22

 9.1 Plan Distribution for Review 22

 9.2 Document Review Cover Letter 24

 9.3 Reviewer Responses..... 25

 9.4 Summary of Settlement Party Comments and PSE Responses..... 25

 9.5 Comment Correspondence 28

List of Figures

Figure 1. Baker River Hydroelectric Project, Concrete, Washington. 4

Figure 2. Document review cover letter. 24

List of Tables

Table 1. Parties that were mailed the draft Fish Propagation Facility Plan as part of the formal review process..... 22

Table 2. Parties that received an informal courtesy copy. 23

Table 3. Summary table of Settlement Party Comments on the draft Fish Propagation Facility Plan and PSE response to those comments..... 25



Acronyms and Abbreviations

This abbreviation, acronym, or short name	Refers to
AI Program	Artificial Incubation Program
ARG	Aquatic Resources Group
BMP	Best Management Practice
BRCC	Baker River Coordinating Committee
FERC	Federal Energy Regulatory Commission
Fish Co-managers	WDFW, Upper Skagit Indian Tribal Community, Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community
FRP	Fish Resource Parties (USFWS, NOAA Fisheries, WDFW, Upper Skagit Indian Tribal Community, Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community)
FFFP	Fish Propagation Facilities Plan
GIS	Geographical Information System
HPA	Hydraulic Project Approval
IHN	Infectious Hematopoietic Necrosis (IHN)
JARPA	Joint Aquatic Resources Permit Application
NAVD 88	North American Vertical Datum. Unless specifically noted, all elevations refer to the GIS-based datum of 1988.
NOAA Fisheries	National Oceanic and Atmospheric Administration, [National Marine Fisheries Service]
NPDES	National Pollutant Discharge Elimination System
Parties	Signatory participants to the Baker River Project Comprehensive Settlement Agreement
PSE	Puget Sound Energy, Inc.
20K Program	20,000 lb. Production Cultured Fish Program
SA	Settlement Agreement
SB	Spawning Beach
SEPA	State Environmental Policy Act
USDA-FS	United States Department of Agriculture-Forest Service
USFWS	United States Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife

1.0 Executive Summary

This Fish Propagation Facilities Plan (FPFP) is prepared for the Baker River Hydroelectric Project (FERC No. P-2150) (Baker Project) pursuant to the Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot dated October 17, 2008 (License). Specifically, Settlement Agreement Article 101 Fish Propagation (SA 101) at Appendix A of the License sets forth the applicable requirements for this plan. SA 101 provides for renovation or construction of fish propagation facilities to improve functionality and productivity, and fisheries enhancement measures to meet management objectives identified by the Fish Co-managers.

The proposed facilities and measures are intended to support the spawning beach program, the artificial incubation program, and a 20,000 pound fish propagation facility, all of which will occur within the existing Sulphur Springs hatchery site. Actions under the spawning beach program will include improvements and operational tests of the production limits of Spawning Beach 4. The artificial incubation program proposes to expand production of sockeye salmon from an initial production goal of 7,000,000 fry up to a potential future production of 11,000,000 fry. This program will include the off-site trapping of adult brood stock, transport to the facility for spawning, incubation of eggs in the new hatchery building, and swim-up tanks for fry in the hatchery building. The 20,000 pound program proposes to expand ongoing sockeye salmon production by providing a maximum instantaneous capacity of 20,000 pounds of fish in the renovated hatchery facility. Production under the 20,000 pound program may include one species or a combination of several species selected by the Fish Co-managers during the life of the facility. When production from the new facilities is available, Spawning beaches at the Channel Creek site will be decommissioned and the site restored to natural conditions. Procedures and measures identified in the Fish Propagation Facilities Plan will be developed in accord with the general principles of proven low impact methods and successful and efficient supplementation methods.

2.0 Introduction

2.1 Overview

This FPFP has been prepared to comply with SA 101. This plan was prepared and reviewed in consultation with the Baker River Project Aquatic Resources Group (ARG), which includes representatives of PSE, the U.S. Department of Agriculture- Forest Service (USDA-FS), the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), Washington Department of Fish and Wildlife (WDFW), the Upper Skagit Indian Tribe, the Sauk-Suiattle Indian Tribe, the Swinomish Indian Tribal Community and other members of the ARG.

The Baker River Project consists of the Lower Baker Development completed in 1925, and the Upper Baker Development completed in 1959. The Project includes facilities located on and adjacent to the Baker River, occupying about 5,200 acres of land within the Mt. Baker-Snoqualmie Forest. The Lower Baker Dam forms Lake Shannon and is located near Concrete, Washington, near the confluence of the Baker and Skagit rivers. Lake Shannon is approximately seven miles long and covers about 2,278 acres at full

pool. The Upper Baker Dam forms Baker Lake, located in Whatcom County near the border with Skagit County. Baker Lake is approximately nine miles long and covers about 4,980 acres at full pool. The two existing hydroelectric facilities have been operating at a combined capacity of 170 megawatts.

Prior to Project construction, adult sockeye returned to the Baker River, migrated upstream to Baker Lake, spawned largely on submerged gravel bars along the south shore of the lake, and the progeny reared in Baker Lake before migrating downstream to feed and mature in the ocean. Adult Baker River sockeye now return to the lower Baker River, where they are trapped and transported above the Lower Baker and Upper Baker dams and released to spawn in artificial beaches provided with gravel substrate and upwelling spring water. If adult sockeye returns exceed spawner goals, the adults may be available for tribal ceremonial and subsistence uses, may be released into Baker Lake to spawn naturally, or an in-river recreational harvest may be prescribed by the Fish Co-Managers.

The artificial spawning beaches were constructed to replace and mitigate for lake shore spawning habitat lost as a result of the addition of the Upper Baker Hydroelectric Development. Sockeye Spawning Beaches 1, 2, and 3 are located on spring-fed Channel Creek, a tributary to upper end of Baker Lake. Spawning Beach 1 was first used in 1957, Spawning Beach 2 was completed in 1959, and Spawning Beach 3 was completed in 1966. Beaches 1 and 2 are in disrepair and no longer operational. Beach 3 is operational, but is affected by fluctuations in water quantity and quality. Due to concerns regarding the long-term viability of the Channel Creek site water supply, and flooding risks associated with the adjacent Baker River, Spawning Beach 4 was built at the mouth of Sulphur Creek downstream of Sulphur Springs. The Sulphur Springs site is at the upper end of Lake Shannon near the base of the Upper Baker Dam (figure 1). Beach 4 was first used for the 1990 brood of adult sockeye. The Sulphur Springs site contains Spawning Beach 4 and appurtenant fish culture facilities.

Beginning with the 2002 broodstock returns, a portion of the sockeye fry production was developed using vertical incubators. The use of egg incubators was implemented to maximize the survival potential to swim-up of Baker Lake sockeye fry. Due to an anticipated small adult return and the need to maintain better disease control, a portion of the production was dedicated to vertical incubators to provide a reserve egg bank and protect against catastrophic losses due to disease, siltation or flooding.

Historically, all fry produced at Spawning Beach 3 emigrated volitionally into Baker Lake via the spawning beach outlet and creek. In contrast, fry from Spawning Beach 4 are captured as they exit the beach, enumerated and hauled to one or more sites and released into Baker Lake to rear. Fry produced from the vertical incubators are planted into Baker Lake and/or Lake Shannon.

Under the terms of the License, PSE will renovate the existing Baker Fish Hatchery facilities and construct several new facilities. Renovations include a new hatchery building, adult holding facilities, outdoor rearing facilities, process water supply and drain systems, spawning beach renovation, and other miscellaneous facilities (HDR 2007). Renovations are intended to support a 20,000 pound production program, improve the spawning beach facility, and substantially increase production of the existing sockeye salmon artificial incubation program. In addition to renovating and constructing new facilities, fisheries enhancement measures will be implemented to utilize the productive capacity of the Project reservoirs to meet fish management objectives. This document describes relevant Project features, identifies responsibilities of various parties, the anticipated schedule of activities, and describes the administrative process that may be needed to construct and operate the facilities.

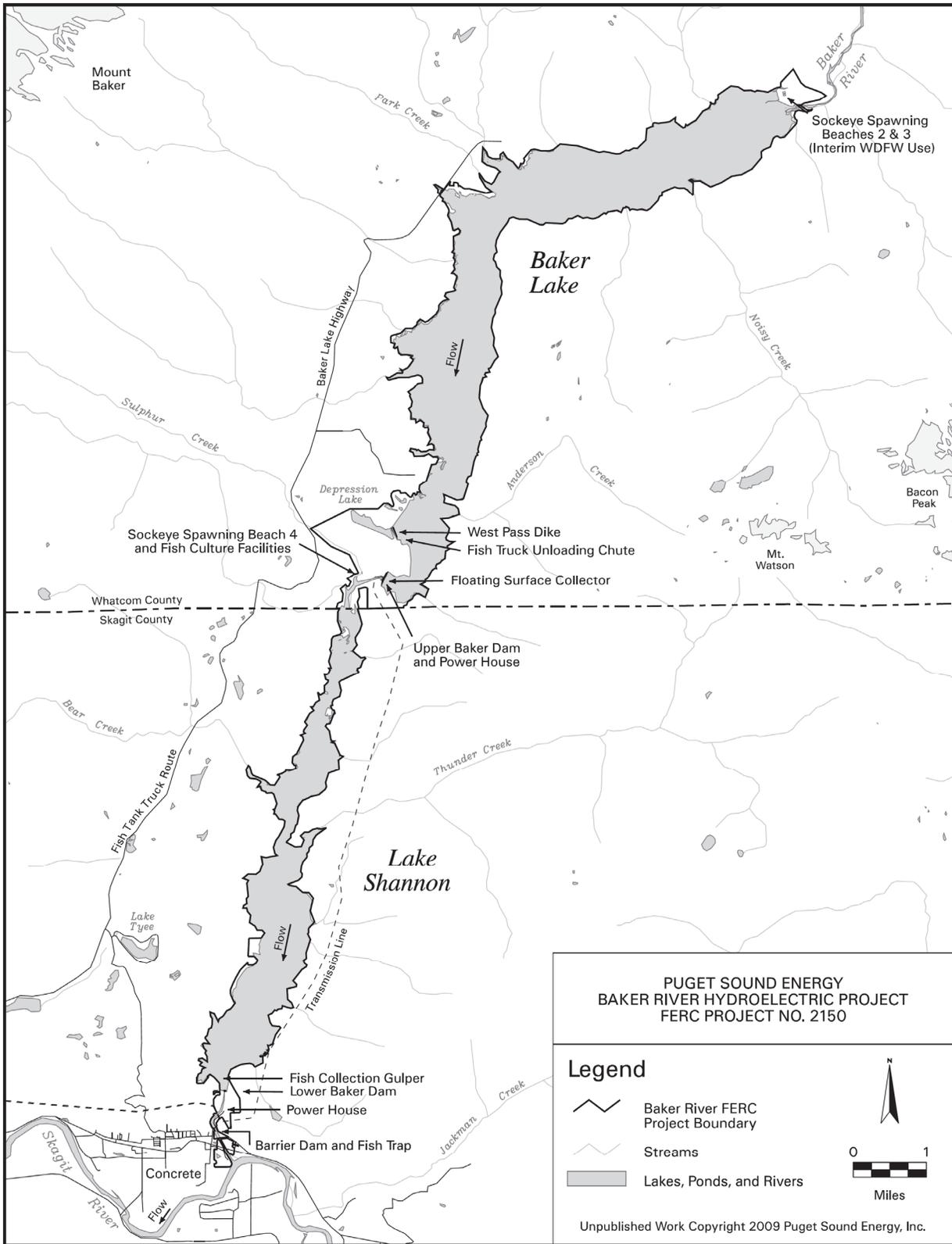


Figure 1. Baker River Hydroelectric Project, Concrete, Washington.

3.0 Basis for the Plan

On November 30, 2004, PSE filed a Comprehensive Settlement Agreement that resolved all issues among the parties related to the relicensing and ongoing operations of the Baker River Project. FERC approved the Settlement Agreement and incorporated the proposed license articles, including SA 101, into the License. SA 101 as approved by FERC is the basis for the FPPF.

3.1 SA 101 - Fish Propagation

SA 101 provides as follows:

“The licensee shall be responsible for fish propagation and enhancement programs and facilities at the Baker River Project during the term of the license, as described in this article.

Plan and Requirements. Within six months following license issuance, licensee shall, following consultation with USFWS, NOAA Fisheries, WDFW, the Upper Skagit Indian Tribe, the Sauk-Suiattle Indian Tribe, and the Swinomish Indian Tribal Community (“Fish Resource Parties”), and USDA-FS, develop a fish propagation Facilities Plan (“FPPF”) that contains detailed requirements for licensee’s implementation of the facilities and programs required by this article, including the following:

(a) Licensee shall construct ancillary facilities and/or modify Sockeye Spawning Beach 4 for improved functionality and productivity, by doing the following: 1) isolating the water supply to each of the existing segments, 2) installing concrete walls between segments, 3) improving alarm systems, and 4) reviewing conditions of Sulphur Springs water supply intake site and developing a plan to control sediment infusion that may include capping the intake area to prevent sliding material from moving into the water supply;

(b) Licensee shall construct additional fish culture facilities at the Sulphur Springs site, to provide for a total of 20,000 pounds of instantaneous cultured fish capacity (exclusive of eggs and anadromous adults) and 7,000 pounds of egg incubation capacity (including egg incubation capacity that may be provided in Beach 4), which shall include some or all of the following structures, facilities, and equipment necessary for adult holding, spawning, and egg incubation: water chiller(s), fry starter(s), troughs or ponds, rearing ponds, and loading facilities;

(c) Licensee shall provide for fishery facility operations in a manner that will enable the sequential development of population enhancement for sockeye, based upon: 1) a study completed no later than two years following license issuance evaluating and, if possible, determining the capacity of Baker Lake and Lake Shannon for the production of sockeye smolts from fry, 2) a phased approach for increasing sockeye fry capacity from production limits derived empirically from monitoring and analyses of returning broodstock and subsequent smolt production, and 3) operational tests of the limits of Sockeye Spawning Beach 4 productivity to optimize output toward the goal of producing approximately four (4) million fry;

(d) Licensee shall decommission the site of Sockeye Spawning Beaches 1, 2 and 3, in accordance with the following: 1) to the extent feasible, retain Beaches 2 and/or 3 until replacement production from new facilities required by this article are developed, which retention may require modifications, such as leak reduction, to keep them functional and improve their performance prior to decommissioning, 2)

decommissioning shall not occur until approval from the USDA-FS is obtained, and 3) decommissioning may include: configuring the ponds into a channel with a natural meander to optimize fish usage, removing existing structures and restoring landscaping, and initiating adult salmon returns to the site with a temporary supplementation program;

(e) Licensee shall continue the existing programs described in the schedule below, unless modified or terminated at the direction of the Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and Washington Department of Fish and Wildlife ("Fish Co-managers"). Licensee shall fund and implement fish propagation and enhancement programs, when and if directed by the Fish Co-managers according to the following: 1) fisheries management objectives provided to licensee by the Fish Co-managers, 2) weight and production targets established by the Fish Co-managers, within the capacity and production limits (maximum of 20,000 pounds for no more than three months annually) of the facilities required by this article, 3) species mix, life stages, and quantities, based on Fish Co-managers' direction, within the capacity and production limits of the facilities required by this article, and 4) facility production is limited to the space available at the Sulphur Springs site;

(f) Licensee shall, beginning no later than five years following license issuance, make funding available to the Fish Co-managers for the purpose of evaluation, planning, permitting and implementation of a reservoir nutrient enhancement program in an amount not to exceed \$60,000 annually during the term of the license. Any funds not expended in one year may be carried over into succeeding years, or, at the direction of the Fish Co-managers, due to program assessment potential or other relevant biological factors, may be transferred to the Habitat, Enhancement Restoration and Conservation (HERC) Fund;

(g) Within six months following license issuance for the existing facilities, and within six months following completion of construction of facilities required by this article, licensee shall prepare, and update periodically as needed, a fish facility operations manual that includes the following elements, as appropriate: facility layout, flow distribution schematic and plan, emergency response plan, emergency personnel call-out procedures, security plan, any current management protocols provided by the Fish Resource Parties, reporting procedures, any operations plan approved by the Fish Co-managers, an equipment and suppliers' list, any fish distribution plan approved by the Fish Co-managers, any spill containment plan approved by the Fish Co-managers, and any hygiene plan for disease control approved by the Fish Co-managers;

(h) Licensee shall develop and implement a set of operational protocols for the fisheries enhancement program to be approved by the Fish Co-managers that contains at least the following elements: 1) the method for selecting and engaging an annual contractor, who is required to be accountable to the Fish Co-managers and qualified to implement the program required by this article, 2) the form of annual contract and budget, to be issued for 5-year periods, with each 5-year contract commitment to be secured 12 months prior to the expiration of the current 5-year contract, 3) the process by which the Fish Co-managers will consider and approve studies to be performed by licensee or other entities to optimize fish program success, 4) the method for preparing an annual audit, to be provided to the Aquatics Resource Group ("ARG") December 31 of each year, of the operation of the facilities based on a June 1 to May 31 operating year, and 5) a method for developing a report format to include in the contract for facility operation by June 1

of each year, containing information regarding operations, problems, facility status, future need, and results of the program; and

(i) Licensee shall make funds available to the Fish Co-managers to hire an on-site manager for the fisheries enhancement program required by this article, following notification of selection of an on-site manager by the Fish Co-managers and based upon any agreement between the Fish Co-managers and the licensee. The manager will be selected by the Fish Co-managers.

After required consultation in the development of the FPDF, licensee shall provide a minimum of 30 days for the consulted parties and other members of the ARG to comment and to make recommendations before filing the FPDF with the Commission. The licensee shall include with the FPDF, documentation of consultation and copies of comments and recommendations on the FPDF after it has been prepared and provided to the consulted parties and other members of the ARG, and specific descriptions of how the comments are accommodated by the plan. If licensee does not accept a recommendation, the filing shall include the licensee's reasons, based on Project-specific information.

Schedule. Licensee shall comply with the requirements of this article according to the following initial schedule, which may be revised following consultation with the Fish Resource Parties:

Reporting. After consultation with the ARG, the WDFW, the Swinomish Indian Tribal Community, the Upper Skagit Indian Tribe and Sauk-Suiattle Indian Tribe, licensee shall submit a final annual report that includes an annual audit on fish propagation facilities and programs required by this article, based on a June 1 to May 31 operating year, which shall be submitted to the Commission in accordance with Article 102. For the purposes of this article, the audit shall involve a periodic review and report on operational indices that includes financial accounting, fish handling and disease management operations, hazardous materials handling, Spill Prevention and Control Countermeasures compliance, and other parameters that may be designated from time to time. The licensee shall allow a minimum of 30 days for the Parties to comment and to make recommendations before filing the report of operations with the Commission, and comments will be provided on or before November 30. The licensee shall include with the audit or report, documentation of comments and recommendations on the annual report, and specific descriptions of how any comments are accommodated in the report. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on Project-specific information."

3.2 Relationship to Other Articles of the License and Settlement Agreement

The FERC License and Settlement Agreement refers to the FPDF in several other articles. Under SA 102 Reporting, PSE will provide an annual report to the Parties per the schedule in SA 102 for 30 day review that includes a description of how PSE, agencies, and tribes coordinated the implementation of SA 101. Activities conducted during the previous 12 months (June 1 to May 31) and the status of development or implementation of measures will be summarized in each annual report.

4.0 Goals

The goals of the FPPF are to construct and/or modify fish propagation facilities for improved functionality and productivity, and to implement fisheries programs to enable the sequential development and enhancement of the Baker River sockeye population.

Fish production at the Sulphur Springs site will be consistent with fisheries management objectives provided by the Fish Co-managers and implemented to the capacity and production limits of the Sulphur Springs site as required by the article. Spawning Beaches 1, 2 and 3 at the Channel Creek site will be decommissioned and the site reconfigured and landscaped to restore fish use of natural stream conditions.

4.1 Key Elements of SA 101

Under SA 101, PSE will implement required facilities and programs as follows:

- Construct and/or modify Sockeye Spawning Beach 4 by isolating the water supply to each spawning beach segment, installing concrete walls between segments, improving the alarm systems, and developing a plan to control sediment in the facility water supply.
- Construct additional fish culture facilities at the Sulphur Springs site to provide a total cultured fish capacity of 20,000 pounds of fish and 7,000 pounds of egg incubation.
- Provide operations to sequentially develop sockeye populations by conducting a study to determine, if possible, the sockeye smolt capacity of Baker Lake and Lake Shannon, identify a phased approach for increasing sockeye fry capacity, and testing sockeye Spawning Beach 4 productivity limits.
- Retain Spawning Beach 3 until replacement production is available from new facilities, then restore Channel Creek site to natural conditions.
- Fund and implement programs to meet fisheries management objectives as directed by the Fish Co-managers within the capacity and limits of the Sulphur Springs facilities required by the article.
- Provide funding for a reservoir nutrient enhancement program not to exceed \$60,000 annually beginning post-licensing year five through 50.
- Prepare, and update as needed, a fish facility operations manual.
- Develop and implement operational protocols for the fisheries enhancement program as specified in SA 101.
- Provide funding for an on-site manager for the fisheries enhancement program required by the article.

5.0 Regulatory Reference and Definitions

The FPPF has been developed and will be implemented in a manner consistent with applicable local, state, and federal laws and regulations.

5.1 Federal Authority and Reference

The FPPF is prepared according to the authority under the License. The License incorporates U.S. Department of Interior, USFWS and U.S. Department of Commerce, NMFS conditions under section 7 of the Endangered Species Act, including minimizing the negative effects of increased sockeye propagation on bull trout, and developing the fish culture facility as described in SA 101.

5.2 Washington State Authority and Reference

The FPPF is prepared according to the authority under the License. The License incorporates requirements by Washington Department of Ecology under section 401 (a)(1) of the Clean Water Act, including preparation of a Water Quality Protection Plan for Project-related construction, maintenance and repair work; and preparation of a National Pollutant Discharge Elimination System (NPDES) fish hatchery permit should hatchery production increase to a level requiring permit compliance.

5.3 Definitions

A list of acronyms, abbreviations, and short names is provided following the Table of Contents.

6.0 Plan Implementation

This section outlines specific components of the Plan as defined in SA 101.

6.1 Plan Area

The Baker River watershed, which is U.S. Geological Survey Hydrologic Unit Code 17110005 (Upper Skagit) encompasses the plan area for SA 101. The plan area includes Baker Lake and Lake Shannon and their tributaries, and the lower Baker River downstream to the Skagit River.

6.2 Funding

PSE will fund implementation of the FPPF as specified by conditions in SA 101.

6.3 Provisions for Development and Modification of the Fish Propagation Facilities Plan

The licensee has prepared the FPPF in consultation with USFWS, NOAA Fisheries, WDFW, the Upper Skagit Indian Tribe, the Sauk-Suiattle Indian Tribe, and the Swinomish Indian Tribal Community, and USDA-FS. Consulted parties and other members of the ARG were provided a minimum of 30 days to comment and to make recommendations before this FPPF was filed with the Commission. Documentation of consultation and copies of comments and recommendations on the FPPF after it was prepared and provided to the consulted parties and other members of the ARG are

included in the FPPF, along with specific descriptions of how the comments are accommodated by the plan. Any recommendations not accepted by PSE have been identified, along with the licensee's reasons based on Project-specific information.

6.4 Procedures, Standards, and Criteria

The FPPF will provide for the construction and operation of fish propagation facilities in a manner that minimizes detrimental effects on other environmental resources. During Plan implementation, construction, and operation of facilities will be conducted using Best Management Practices and according to guidelines identified through the permitting process and through consultation with the ARG. Changes to standards and criteria will be reported in the annual report for SA 101. Elements of the implementation process are described in greater detail in the following sections. Documentation of implementation activities will be provided to the FERC as identified by open box bullets in the following sections. A summary list of these reporting items is provided in Section 6.0 Reporting.

6.4.1 SA 101(a) Modify Sockeye Spawning Beach 4

Under SA 101(a), the licensee will construct walls between the four Spawning Beach 4 segments and provide independent water control for each of the segments. During renovation of the spawning beach and fish culture facilities, measures will be installed to improve the hatchery alarm systems, and a plan developed to increase protection of the water supply.

The Baker Fish Hatchery Renovation includes the redesign of Spawning Beach 4 as described in the 100% Design Documentation Report (McMillen 2008). As part of the overall hatchery renovation, the design of the existing spawning beaches includes removing existing spawning beach materials and constructing new dividing walls and individual flow controls for each beach area. Measures will be installed to improve the hatchery alarm systems including intrusion, turbidity, water level alarms. As part of the design effort, conditions at the water supply intake at the Big Springs site were reviewed and several intake modifications were incorporated into the design document. In addition to intake modifications, sand separators will be installed to remove sand and suspended materials before the water enters the hatchery piping system.

The Design Documentation Report provides details for renovation and/or construction, including, but not limited to, the following elements.

- Intake box modifications
- Separator/head tank building
- Hatchery building
- Adult holding facilities
- 20k outdoor rearing
- Process water supply system
- Process drain water
- Clarifier

- Chemical treatment pond
- Spawning beach renovation
- Instrumentation and alarms
- Miscellaneous facilities

During the fish hatchery renovation design effort, design engineers consulted with members of the ARG and operators of the existing facility to review and incorporate design changes in response to comments and suggestions. The Design Criteria Package (HDR 2007) was reviewed and updated at the 30%, 60%, 90% and 100% levels of completion to fully document the criteria used to develop the hatchery design. The 100% Design Documentation Report was submitted to the ARG for final review in October 2008.

Documentation of the design and construction of the facilities will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- The 100% Design Documentation Report, including ARG comments and responses, will be provided in the first annual report.
- A construction update report will be provided on an annual basis.
- A Final Project Completion Report, including as-built design drawings, will be provided within 12 months following completion of the Baker Fish Hatchery Renovation.

6.4.2 SA 101(b) Construct Additional Fish Culture Facilities at the Sulphur Springs site

In addition to renovation or construction of facilities at Spawning Beach 4, SA 101(b) requires construction of additional fish culture facilities to provide a total of 20,000 pounds of instantaneous cultured fish capacity (exclusive of eggs and anadromous adults) and 7,000 lbs of egg incubation capacity, including the egg capacity provided in Spawning Beach 4. The Design Documentation Report (McMillen 2008) describes the design of the appropriate structures, facilities, and equipment necessary for adult holding, spawning, egg incubation and rearing. Support facilities including crowding and loading systems, chemical application and control systems, cleaning systems, and provisions for chilled water supply described in the 100% Design Documentation Report. Documentation of the design and construction of the facilities will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- The 100% Design Documentation Report, including ARG comments and responses, will be provided in the first annual report.
- Construction update reports will be provided on an annual basis.
- The Final Project Completion Report, including as-built design drawings, will be provided within 12 months following completion of the Baker River Fish Hatchery renovation.

6.4.3 SA 101(c) Provide Operations to Sequentially Develop Sockeye Fry Production

SA 101(c)(1) Sockeye Smolt Capacity Study

During pre-licensing studies, PSE collected water quality and zooplankton data which were used to estimate that Baker Lake could support increased sockeye smolt production. SA 101(c)(1) will provide for another opinion on the sockeye smolt capacity of Baker Lake and, if possible, will estimate the smolt capacity of Lake Shannon. In response, PSE developed a study approach to estimate the sockeye smolt capacity of the Project reservoirs in collaboration with members of the ARG. As part of the collaboration process, PSE submitted the study approach for approval by the ARG in December 2008 and received approval to implement the study. PSE will submit the final results of the study to the ARG and allow a minimum of 30 days before finalizing the report on or before October 1, 2010.

Documentation of the Sockeye Smolt Capacity Study will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- A Final Study Plan titled: "Proposed Study to Estimate the Sockeye Smolt Production Capacity for Baker Lake and Lake Shannon," presented and approved at the December 9, 2008, ARG meeting will be provided along with interim study progress updates; and a final report describing the results of the study, including ARG comments and recommendations, on or before October 1, 2010.

SA 101(c)(2) Empirically-Derived Production Estimates

Baker Basin sockeye production limits will be developed through empirical analysis. This measure will identify a phased approach where adult returns and the size and number of outmigrating smolts will be monitored to provide feedback on basin sockeye production limits. PSE will develop a study plan in collaboration with the ARG that identifies the number, type and frequency of adult and smolt data collection efforts. Documentation will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- A Final Study Plan on Empirically-Derived Sockeye Production Estimates, including ARG comments and PSE responses, will be provided consistent with a schedule to be determined through consultation with the ARG, along with interim study progress updates, and a final report describing the results of the study, including ARG comments and recommendations.

SA 101(c)(3) Sockeye Spawning Beach 4 Production Limits

Between 1992 and 2002, the production of fry from sockeye Spawning Beach 4 ranged from 997,432 fry in 1992 to 3,283,943 fry in 2000. Under SA 101(c)(3), the production limits of Spawning Beach 4 will be operationally tested to evaluate conditions towards a goal of annually producing approximately four million fry. Following completion of the Baker Fish Hatchery Renovation (see SA 101 Parts a and b) the productive capacity of Spawning Beach 4 will be tested following a study design to be developed in collaboration with the ARG. A draft study plan will be submitted to the ARG on or before final completion of the Baker River Hatchery Renovation. Documentation of SA 101(c)(3) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- A Final Study Plan on Sockeye Spawning Beach 4 Production Limits, including ARG comments and PSE responses, will be provided consistent with a schedule to be determined through consultation with the ARG, along with interim study progress updates, and a final report describing the results of the study, including ARG comments and recommendations.

6.4.4 SA 101(d) Maintain, Then Restore Natural Conditions at Spawning Beaches 1, 2 and 3

Sockeye Spawning Beaches 1, 2, and 3 are located on spring-fed Channel Creek, a tributary to upper end of Baker Lake. Spawning Beach 1 was first used in 1957; Spawning Beach 2 was completed in 1959; and Spawning Beach 3 was completed in 1966. Beaches 1 and 2 are in disrepair and no longer operational. Beach 3 is operational, but is affected by fluctuations in water quantity and quality. Due to concerns regarding the long-term viability of Spawning Beaches 1, 2 and 3, Spawning Beach 4 at the Sulphur Springs site was built to replace production at the Channel Creek site. During renovation of Spawning Beach 4 (see SA 101(a)), the potential for sockeye fry production will be retained at the Channel Creek site until replacement production from the new facilities is available. When renovation of the Spawning Beach 4 site is complete, a Channel Creek Decommissioning Plan will be developed that identifies decommissioning procedures:

- restoration goals and objectives
- existing site conditions
- procedures for removal of existing structures
- procedures for reconfiguring site morphology to create a stream channel
- procedures for restoring or enhancing site landscaping
- erosion and sediment control, water quality, and vegetation management procedures
- procedures to temporarily supplement sockeye recruitment to the site

Actual decommissioning of the Channel Creek site will not occur until the USDA-FS authorizes the decommissioning. Documentation will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- A Channel Creek Site Decommissioning Plan, including ARG comments and PSE responses, will be provided within 12 months of completion of the Baker Fish Hatchery Renovation.
- Documentation confirming USDA-FS approval of the Decommissioning Plan will be provided.
- The FERC will be notified within 12 months following completion of Channel Creek site decommissioning activities.

6.4.5 SA 101(e) Implement Fish Propagation Programs as Directed by the Fish Co-Managers

Under SA 101(e), PSE shall fund and implement existing fish propagation and enhancement programs, unless modified or terminated by the Fish Co-managers. The Fish Co-managers will identify fisheries management objectives as part of an Annual Fish Production Plan describing production targets within the capacity and production limits of the facilities required by SA 101 at the Sulphur Springs site.

The Fish Production Plan will include production targets for the upcoming year including species, lifestage, growth schedule, target quantity, and size/weight by species and lifestage of fish to be produced at the Sulphur Springs site. Preseason sockeye spawning beach loading goals will be identified based on predicted sockeye run size including loading sequence and allocation of fish among available spawning beach segments, artificial incubation program, lake release or distribution for other identified purposes. Sockeye fry release protocols, including target release size/weights, release dates, and target release numbers by release location will be identified, including fish marking protocols, such as target number and size of marked fish, marking objectives, type and location of marks, and post-mark handling procedures. Disease management protocols will be described along with carcass handling and distribution protocols, including allocation by number and species of carcasses among available disbursement sites.

Documentation of SA 101(e) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- Confirmation of PSE funding of the fish propagation and enhancement program will be provided in an annual report.
- An Annual Fish Production Plan will be prepared annually by the Fish Co-managers, provided to PSE by September 30 to accommodate budget and reporting processes and timeline requirements, and submitted to the FERC on an annual basis.

6.4.6 SA 101(f) Reservoir Nutrient Enhancement Program

Analysis of available water quality data (Mazumder 2004) indicated that the Baker Project reservoirs are oligotrophic (nutrient-poor). In an effort to increase the productivity of Baker Lake and Lake Shannon, SA 101(f) provides for a reservoir nutrient enhancement program during years 5 through 50 of the new license. PSE will establish a fund by October 1, 2013 that can be used by the Fish Co-managers in evaluating, planning, permitting and implementing the program. Agencies and Co-managers will propose plans, gain approvals, permits and operate the program. Funds provided by this article can be used for baseline studies, monitoring, permitting, fertilizer, or labor as directed by the Fish Co-managers. Under this article, PSE will make available \$60,000 annually beginning in 2013. The use of funds will be at the discretion of the Fish Co-managers related to reservoir enhancement. Any funds not expended in one year can be carried over into succeeding years or transferred to the Habitat Enhancement Restoration and Conservation (HERC) Fund.

Documentation of SA 101 Part f) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- Confirmation of a Reservoir Nutrient Enhancement fund established by PSE by October 2013 will be provided to the FERC, and beginning in 2014, funding of the Reservoir Nutrient Enhancement Program and a listing of fund uses by the Fish Co-managers during the preceding year will be provided as part of an annual report.

6.4.7 SA 101(g) Fish Facility Operations Manual

Under SA 101(g), a fish facility operations manual will be prepared for the existing facilities, and PSE will update the manual within six months following completion of the Baker Fish Hatchery Renovation. The fish facility operations manual will include the following items:

- Facility layout
- Flow distribution schematic and flow procedures
- Emergency response procedures
- Emergency personnel call-out procedures
- Security procedures
- Any current management protocols provided by the Fish Resource Parties
- Reporting procedures
- Any operations procedures approved by the Fish Co-managers
- An equipment and suppliers' list
- Any fish distribution procedures approved by the Fish Co-managers
- Any spill containment plan approved by the Fish Co-managers
- Hygiene procedures for disease control approved by the Fish Co-managers

Documentation of SA 101(g) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- The fish facility operations manual for existing facilities was provided in April 2009.
- A fish facility operations manual for the Sulphur Springs site will be provided within 6 months following completion of renovation and/or construction of new facilities as part of the Baker Fish Hatchery Renovation.

6.4.8 SA 101(h) Fisheries Enhancement Program Operational Protocols

Under SA 101(h), the licensee shall develop operational protocols for various elements of the fish propagation and enhancement program. Operational protocols will be developed by PSE and submitted to the Fish Co-managers for approval:

SA 101(h)(1) Contractor Selection

Under existing conditions, annual operations of the fisheries enhancement program are funded by PSE and implemented by combined staff of PSE and WDFW. This current combination of operations personnel will continue during renovation and construction of the Sulphur Springs facilities (see SA 101 Parts a and b) and for an interim period

following construction. Following the interim post-construction period, the fish enhancement program will be implemented by a qualified contractor who will be accountable to the Fish Co-Managers. The contractor will be selected by PSE and contracted at 5-year intervals. Prior to the end of each 5-year period, a request for proposal will be issued and a contractor selected for the next 5-year period following an evaluation, bidding and selection process. The contractor will be selected following an evaluation process that will identify the following items:

- minimum contractor technical qualifications
- availability and qualifications of key personnel
- financial qualification requirements
- cost
- contractor evaluation and selection process

Documentation of SA 101(h)(1) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting.

- An Initial Contractor Evaluation and Selection Process document will be provided following completion of the Baker Fish Hatchery Renovation and prior to contractor selection.
- The Contractor Evaluation and Selection Process document, including the identity and qualifications of selected contractor, will be provided prior to the expiration of each 5-year contract.

SA 101(h)(2) Contract and Budget

The operations contractor will be engaged for 5-year periods under annual contracts to be developed by PSE. The contract will specify the terms of the commitment and will be secured 12 months prior to the expiration of the current 5-year period. In addition to the form of the contract, PSE will identify the annual budgeting process governing operation of the Fisheries Enhancement Program. Documentation of SA 101 Part h)2 will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting.

- An Interim Contract and Budgeting Process document will be provided that describes continued operation of Fisheries Enhancement Program facilities during and immediately following the Baker Fish Hatchery Renovation.
- An Annual Contract and Budgeting Process document governing operation of Fisheries Enhancement Program facilities during the 5-year contract commitments, will be prepared 12 months prior to the expiration of the current 5-year contract and provided to the FERC.

SA 101(h)(3) Study Approval

Following completion of the Baker Fish Hatchery Renovation, the Fish Co-managers will consider studies to be performed by PSE or other entities designed to enhance the success of the Fisheries Enhancement Program. PSE will develop a process to identify the objectives, methods, schedule, budgetary implications and approval of studies

designed to enhance program success. Documentation of SA 101(h)(3) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting.

- A Fisheries Enhancement Study document, describing the process to be used by the Fish Co-managers to evaluate and approve studies designed to optimize program success, will be provided following completion of the Baker Fish Hatchery Renovation.

SA 101(h)(4) Operations Audit. Under this article, PSE will identify the scope, schedule and procedures guiding development of an annual audit of facilities operations after consultation with the ARG, the WDFW, the Swinomish Indian Tribal Community, the Upper Skagit Indian Tribe and Sauk-Suiattle Indian Tribe. The annual audit will include a review of fish propagation facilities and programs required by this article, based on a June 1 to May 31 operating year. For the purposes of this article, the audit shall involve a periodic review and report on operational indices that includes financial accounting, fish handling and disease management operations, hazardous materials handling, Spill Prevention and Control Countermeasures compliance, and other parameters that may be designated from time to time. PSE will allow a minimum of 30 days for the Parties to comment and to make recommendations before filing the report of operations with the FERC. The annual submittal will include documentation of comments and recommendations on the annual report, and specific descriptions of how any comments are accommodated in the report. If PSE does not adopt a recommendation, the filing will include PSE's rationale, based on Project-specific information.

Documentation of SA 101(h)(4) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- A Fish Propagation Facilities Operations Audit report will be submitted annually to the ARG by December 31 based on a June 1 to May 31 operating year. Following a 30-day comment period, the audit, recommendations and responses will be filed with the FERC.

SA 101(h)(5) Reporting

Under SA 101(h)(5), PSE will develop a format to be used by the operations contractor to report information related to implementation of the Fish Propagation and Enhancement Program. The report will present information related to operations, problems, facility status, future needs, and results of the program which may include the following:

- Number, species, size and sex ratio of adult salmon transported from Lower Baker River adult fish passage facility, and disposition of adults among spawning beach, artificial incubation program, released into Baker Basin waters; or used for other identified purposes
- Sockeye beach loading plan and actual beach loading including number of transported sockeye, average length and weight of adult fish, male and female pre-spawn mortality, number of male and female carcasses, number of unspawned females, and estimated fecundity

- Number, size and timing of sockeye fry produced in the spawning beaches, including a description of the counting process and estimated confidence of the fry counts
- Results of the artificial incubation program including number of eggs placed into incubation facilities, number of eyed eggs, estimated egg loss, and number of fry produced in the facilities
- Number, size, timing, location and method of sockeye fry releases, including the results of any fry feeding measures
- Number, species and size at release of all salmonids reared at the Sulphur Springs or other facilities and disposition of fish
- Number, duration and severity of any incidence of Infectious Hematopoietic Necrosis (IHN) and measures taken in response
- Results of flow dispersion testing in the undergravel water distribution pipes of the spawning beaches
- Number, duration and severity of water supply turbidity events at the Sulphur Springs facility and measures taken in response to turbidity events

The format of the report will ensure information is provided on program results and the implementation status of various elements of the Fish Propagation and Enhancement Program. The report format will be developed by PSE and, after review and approval by the Fish Co-managers, will be provided to the operations contractor and on-site manager as part of contracting arrangements.

Documentation of SA 101(h)(5) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- The Fish Propagation Facilities report format, to be prepared prior to selection of an on-site manager under SA 101(i), will be provided to the FERC.

6.4.9 SA 101(i) Fisheries Enhancement Program On-site Manager

Under SA 101(i), PSE will fund an on-site manager for the fisheries enhancement program required by SA 101. The on-site manager will be selected and hired by the Fish Co-managers, but the on-site manager must conform to PSE safety rules and compliances. On-site management and operation of the spawning beach facilities are currently performed by WDFW employees funded by PSE; management and operation of the fish culture facilities are currently performed by PSE employees. This existing funding and hiring arrangement will continue during renovation and construction of the Sulphur Springs facilities. Following construction, the existing arrangement will be continued for an interim period until the Fish Co-managers select an on-site manager. Documentation of SA 101(i) will be provided to the FERC as part of reporting requirements described in SA 102 Aquatics Reporting:

- Confirmation of continued PSE funding of existing program management during and immediately following construction of the Baker Fish Hatchery Renovation will be provided to the FERC.

- Confirmation of PSE funding of a fish enhancement program on-site manager to be selected and hired by the Fish Co-managers will be provided to the FERC following completion of the Baker Fish Hatchery Renovation.

6.5 Schedule

Specific actions within the FPPF will be developed in consultation with the ARG following FERC approval of the FPPF. PSE will submit these actions to the ARG for a minimum 30 day review.

6.6 Rationale

Prior to Project construction, adult sockeye returned to the Baker River, migrated upstream to Baker Lake, spawned largely on submerged gravel bars along the south shore of the lake, and the progeny reared in Baker Lake before migrating downstream to feed and mature in the ocean. Adult Baker River sockeye now return to the lower Baker River, where they are trapped and transported above the Lower Baker and Upper Baker dams and released to spawn in artificial beaches provided with gravel substrate and upwelling spring water. If adult sockeye returns exceed spawner goals, the adults may be available for tribal ceremonial and subsistence uses, may be released into Baker Lake to spawn naturally, or an in-river recreational harvest may be prescribed by the Fish Co-Managers.

The artificial spawning beaches were constructed to replace and mitigate for lake shore spawning habitat lost as a result of the addition of the Upper Baker Hydroelectric Development. Sockeye Spawning Beaches 1, 2, and 3 are located on spring-fed Channel Creek, a tributary to upper end of Baker Lake. Due to concerns regarding the long-term viability of the Channel Creek site water supply, and flooding risks associated with the adjacent Baker River, Spawning Beach 4 was built at the mouth of Sulphur Creek downstream of Sulphur Springs. The Sulphur Springs site contains Spawning Beach 4 and appurtenant fish culture facilities. Beginning with the 2002 broodstock returns, a portion of the sockeye fry production was developed using vertical incubators. The use of egg incubators was implemented to maximize the survival potential to swim-up of Baker Lake sockeye fry. Due to an anticipated small adult return and the need to maintain better disease control, a portion of the production was dedicated to vertical incubators to provide a reserve egg bank and protect against catastrophic losses due to disease, siltation or flooding.

Under the terms of the License, PSE will renovate the existing Baker Fish Hatchery facilities and construct several new facilities. Renovations include a new hatchery building, adult holding facilities, outdoor rearing facilities, process water supply and drain systems, spawning beach renovation, and other miscellaneous facilities (HDR 2007). Renovations are intended to support a 20,000 pound production program, improve the spawning beach facility, and substantially increase production of the existing sockeye salmon artificial incubation program. In addition to renovating and constructing new facilities, fisheries enhancement measures will be implemented to utilize the productive capacity of the Project reservoirs to meet fish management objectives.

6.7 Monitoring, Maintenance, and Management

Monitoring, maintenance, and management associated with implementation of SA 101 will be identified during development of individual measures required by the Article. Monitoring details including the objectives, methods, frequency, extent, schedule, and demonstration of success will be developed in consultation with the ARG, the WDFW, the Swinomish Indian Tribal Community, the Upper Skagit Indian Tribe and Sauk-Suiattle Indian Tribe.

7.0 Reporting

After consultation with the ARG, the WDFW, the Swinomish Indian Tribal Community, the Upper Skagit Indian Tribe and Sauk-Suiattle Indian Tribe, PSE shall submit an annual report to the FERC in accordance with SA 102. The open box bullets refer to reporting items described in previous sections. The annual report will provide information on fish propagation facilities and programs required by SA 101 including the following:

- Sockeye Spawning Beach 4 100% Design Report and interim construction updates until the Final Project Completion Report is submitted following completion of the Baker River Fish Hatchery renovation
- Sulphur Springs Fish Culture Facility 100% Design Report and interim construction updates until the Final Project Completion Report is submitted following completion of the Baker River Fish Hatchery renovation
- Sockeye Smolt Capacity study plan and interim study progress updates until submittal of the final study report including ARG comments and recommendations
- Empirically-Derived Sockeye Production Estimate study plan and interim study progress updates until submittal of the final study report including ARG comments and recommendations
- Sockeye Spawning Beach 4 Production Limits study plan and interim study progress updates until submittal of the final study report including ARG comments and recommendations
- Channel Creek Site Decommissioning Plan, documentation confirming U.S. Forest Service approval of the Decommissioning Plan, and interim progress updates until completion of Channel Creek site decommissioning activities
- Confirmation of annual PSE funding of the fish propagation and enhancement program and the annual Fish Production Plan provided to PSE by Fish Co-managers
- Annual confirmation of PSE funding of the Reservoir Nutrient Enhancement Program starting October 2013 and annual reporting by Fish Co-managers regarding fund uses during the preceding year
- Fish facility operations manual for the Sulphur Springs site provided following completion of the Baker Fish Hatchery Renovation, and updates to the manual as needed
- Annual Contract and Budgeting Report governing operation of Fisheries Enhancement Programs including annual budget and actual costs

- Updates on fisheries enhancement studies approved by the Fish Co-managers to optimize program success provided annually following completion of the Baker Fish Hatchery Renovation
- Fish Propagation Facilities Operations Audit to be submitted annually based on a June 1 to May 31 operating year; including financial accounting, fish handling and disease management operations, hazardous materials handling, and Spill Prevention and Control Countermeasures compliance

PSE will provide the annual report to the ARG per the schedule in SA 102 for 30 day review. Comments and recommendations by the ARG will be included in the annual report submitted to the FERC, along with specific descriptions of how any comments are accommodated in the report. If recommendations are not adopted, the filing will include PSE's explanations based on Project-specific information.

8.0 References and Literature Cited

- Henningson, Durham and Richardson (HDR). 2007. Baker Fish Hatchery Renovation, Design Criteria Package, Volume 1, dated July 2007, prepared by FishPro, Port Orchard, Washington division of HDR Engineering, prepared for Puget Sound Energy, Bellevue, Washington.
- Puget Sound Energy (PSE). 2002. Initial Consultation Document, Baker River Hydroelectric Project, FERC No. 2150. Prepared by Puget Sound Energy, Inc., Bellevue, Washington.
- Mazumder, A. 2004. Sockeye and Reservoir Production Potential, Baker River Project Relicensing Study A-26a, prepared by University of Victoria, Department of Biology, Victoria, British Columbia, prepared for Puget Sound Energy, Bellevue, Washington.
- McMillen, M.D. 2008. Baker Fish Hatchery Renovation, 100% Design Documentation Report, dated September 2008; prepared by McMillen Engineering, LLC, Boise, Idaho, prepared for Puget Sound Energy, Inc., Bellevue, Washington.
- Washington Department of Fish and Wildlife (WDFW). 2003. Hatchery & Genetic Management Plan (HGMP), Baker Lake Sockeye Program, Skagit River, North Puget Sound, dated March 25, 2003, lead organization WDFW, Olympia, Washington.

9.0 Comments and Responses from the Formal Plan Review

9.1 Plan Distribution for Review

On March 31, 2009, PSE sent, by certified mail, the Document Review Cover Letter and draft Fish Propagation Facilities Plan to the Settlement Parties (tables 1 and 2). For reference purposes, the Document Review Cover Letter (figure 2) is provided in this section.

Table 1. Parties that were mailed the draft Fish Propagation Facility Plan as part of the formal review process.

Name	Organization	Address
Ric Abbett	The WA Council of Trout	3025 Angus Drive S.E. Tenino, WA 98589
Len Barson	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Chuck Ebel	US Army Corps of Engineers	4735 E. Marginal Way S. Seattle, WA 98124
Alison Evans	WA Department of Ecology	3190 160th Ave. S.E. Bellevue, WA 98008-5452
Steve Fransen	NOAA Fisheries	510 Desmond S.E., Ste. 103 Lacey, WA 98503
JoAnn Gustafson	WA Dept. Natural Resources	919 N. Township Sedro-Woolley, WA 98284
Bob Helton	Skagit County Resident	21032 Little Mountain Rd. Mount Vernon, WA 98274
Rich Johnson	WA Dept. of Fish and Wildlife	PO Box 1100 La Conner, WA 98257
Lou Ellyn Jones	US Fish and Wildlife Service	510 Desmond S.E., Ste. 102 Lacey, WA 98503-1273
Scott Lentz	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
Jeff McGowan	Skagit County	1800 Continental Place Mount Vernon, WA 98273-5625
Scott Schuyler	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Arn Thoreen	Skagit Fisheries Enhancement Group	29517 S. Skagit Hwy Sedro-Woolley, WA 98284
Stan Walsh	Sauk-Suiattle Indian Tribe	PO Box 368 La Conner, WA 98257
Stan Walsh	Swinomish Indian Tribal Community	PO Box 368 La Conner, WA 98257
Stan Zyskowski	North Cascades National Park	810 SR 20 Sedro-Woolley, WA 98284
	Town of Concrete	45909 Division Street Concrete, WA 98237

Table 2. Parties that received an informal courtesy copy.

Name	Organization	Address
Greta Movassaghi	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284

9.2 Document Review Cover Letter

 <p>PUGET SOUND ENERGY The Energy To Do Great Things</p> <p>Puget Sound Energy P.O. Box 97034 Bellevue, WA 98009-9734 PSE.com</p>	<p>March 31, 2009</p> <p style="text-align: right;">Project No. 2150 Baker River Project Puget Sound Energy, Inc.</p> <p>[CERTIFIED MAIL RETURN RECEIPT REQUESTED]</p> <p>[Consulting Recipient Name] [Organization] [Address] [Address]</p> <p>Re: Baker River Project, FERC No. 2150 – Draft Fish Propagation Facilities Plan Submittal for 30-Day Review</p> <p>Dear [Identify Recipient's name]:</p> <p>On October 17, 2008, the Federal Energy Regulatory Commission (FERC) issued a new license for Puget Sound Energy, Inc.'s (PSE's) Baker River Project, FERC No. 2150. In the license at Paragraph F, the FERC directed PSE to comply with conditions of the comprehensive Settlement Agreement for the Baker River Project which includes a minimum "30-Day" Review of a Fish Propagation Facilities Plan (FPFP) SA 101.</p> <p>In accordance with these directives, PSE submits this Plan to the Aquatic Resources Group composed of representatives from the Settlement parties for a "30-Day" review and seeks comments and suggestions. These comments and suggestions will be addressed before the final plan is submitted to the FERC.</p> <p>Enclosed with this letter is the draft FPFP. Please review this plan and send your comments and/or recommendations to me. You may also submit your comments by email. Please respond with your reply by June 1, 2009.</p> <p>Thank you for your efforts in supporting this process. If you have any questions, please call me at 425-462-3442 or email arnie.aspelund@pse.com.</p> <p>Sincerely,</p>  <p>Arnold A. Aspelund Consulting Natural Resource Scientist</p> <p>Enclosure: Draft Fish Propagation Facilities Plan</p> <p>cc: ARG</p> <p>Doc ID: BAK.20090331.0095.PSE.ARG</p>
---	---

Figure 2. Document review cover letter.

9.3 Reviewer Responses

The following reviewer sent comments to PSE (see section 9.4 for details).

- Jon Vanderheyden, USDA Forest Service

The following reviewer responded but had no comments.

- Lou Ellyn Jones, U.S. Fish and Wildlife Service

9.4 Summary of Settlement Party Comments and PSE Responses

Comments received from Settlement Parties and PSE responses to those comments are summarized in table 3, below. Section 9.5 shows the original correspondence.

Table 3. Summary table of Settlement Party Comments on the draft Fish Propagation Facility Plan and PSE response to those comments.

Comment	Puget Sound Energy Response
Lou Ellyn Jones, U.S. Fish and Wildlife Service, received April 6, 2009	
We have no comments on this plan.	Thank you for your response.
Jon Vanderheyden, USDA Forest Service, received after the formal review period ended, June 1, 2009	
<p>Schedule</p> <p>The Forest Service requests PSE to begin to planning immediately for the decommissioning of Beaches 1, 2, and 3, the earth dam and all associated facilities. Full decommissioning and site remediation should be completed during the 2010 field season.</p> <p>No production has occurred from Beaches 1, 2, and 3 since 2006 due to the lack of reliability. Replacement production has been in place offsite since 2002 in the form of artificial incubation.</p> <p>We request that PSE accelerate this project schedule to facilitate complete decommissioning of the spawning beaches and all associated facilities by December 2010. In addition, we request that immediate action be taken to reroute flows through the culvert in the earth dam, preventing further head-cutting and the threat of catastrophic failure.</p>	<p>Schedule</p> <p>While the USDA-FS letter raised several issues relating to safety, all the issues were in support of a request to alter a decommissioning schedule that was adopted by the Signatories of the Baker River Hydroelectric Project Comprehensive Settlement Agreement. This schedule was later affirmed in the License, the USDA- FS Section 4(e) Terms and Conditions (Condition 1) and the NMFS Biological Opinion Terms and Conditions (Condition 5). The request for alteration to the schedule for decommissioning the spawning beaches at this time is inconsistent with these terms of the Settlement Agreement, the License Order and other prescriptive terms and conditions and therefore cannot be considered at this time.</p> <p>Decommissioning of the spawning beaches is scheduled to be initiated with approximately 3 to 5 years of the license receipt. We are on track with this schedule.</p> <p>Planning to decommission the spawning beaches is underway and is reflected in the FPPF. You also stated that the facilities are not used, i.e., there is insufficient reason to retain "the potential for sockeye fry production." However, this assumption is incorrect. These facilities remain operational and could be called into service before replacement production is provided from the new fish propagation facilities by utilizing pumping to supplement the gravity water supply. The schedule for completion of the new fish propagation facilities is expected and planned for the end of 2010. PSE has projected planning and decommissioning the site of Sockeye Spawning Beaches 1, 2, and 3 to occur between 2011 and 2013 (years 3-5) of the 2008 license in accordance with SA 101.</p>

Comment	Puget Sound Energy Response
<p>Earthen Weir</p> <p>Ongoing impacts occurring at the site are as follows:</p> <ol style="list-style-type: none"> 1. The earth dam or weir that impounds water for the supplying Beach 3 is failing. The dam is being head-cut and impacting fish habitat downstream. 	<p>Earthen Weir</p> <p>This comment considered in the context of both safety and the request for accelerated schedule. The weir is a small earthen structure, and when full does not impound much water. It is in a remote location relative to people and property. The weir had a very small and temporary impoundment (about 1/3 acre), and was intended to be a supplemental supply to the Beach 3 operations. PSE staff with expertise in dam stability determined that the weir in its present condition will not breach because of low head conditions and its composition. Structurally, the weir consists of well-compacted clayey, gravelly soil with no evidence of excessive erosion due to the water that flows over it. Moreover, to address your concerns, PSE has undertaken several actions. The bypass culvert used to keep the pond empty was plugged by beaver activity. It has been cleared and is being monitored. Also, we have diverted as much of the flow as possible to the spawning beaches to reduce all flows that are excess to the culvert capacity. The pond is now evacuated and will be maintained in that condition until decommissioning can proceed per the agreed schedule. We are in discussions with USDA-FS on the need and available means to open a larger pathway through the weir for water to pass in the future.</p>
<p>Transite Pipe</p> <ol style="list-style-type: none"> 2. Asbestos piping in Beach 2 is exposed to the air which is a known hazard, and an unacceptable liability for the forest. FERC should be notified of this situation under 18 CFR Part 12 as an unresolved safety issue which requires corrective action. The site should be secured and warning signs maintained until asbestos containment and abatement can be completed according to state and federal law 	<p>Transite Pipe</p> <p>This comment was considered in the context of both safety and the request for accelerated schedule.</p> <p>Your letter also raises concerns regarding transite piping at Beach 2. The presence of these pipes was known and the measures to be taken with respect to the pipes were evaluated as part of the Baker Project relicensing. These cement based pipes are buried several feet below the surface with a short and small diameter 4 foot extension above the gravel surface. The exposed portions of the pipes are not at risk to the public; however, the area has been secured with fencing and appropriate signage is posted. PSE is working with an environmental consultant to determine appropriate remediation for this area. While we do not believe that site conditions warrant reporting under 18 C.F.R §12.10, we have reviewed the current status of the site with the FERC and the need for any further near term remediation or containment measures.</p>
<p>Channel Migration</p> <ol style="list-style-type: none"> 3. Channel migration of the Baker River is ongoing and has cut-off access to this site, most recently in 2003 and 2006. The road is being retained (with difficulty) only because PSE has not removed its facilities from this site. 	<p>Channel Migration</p> <p>You also mention that channel migration of the Baker River cut off access to the site in 2003 and 2006. Access to the site was restored in both instances and the site is currently accessible. In the unlikely event that the Baker River channel migrates to make access more difficult before decommissioning, steps will be taken to restore access as has been done in the past. Road access has been included in our planning and is within the schedule under the License that was agreed to in the Settlement Agreement.</p>

Comment	Puget Sound Energy Response
<p>Baker River Inundation</p> <p>4. The risk of Baker River occupying the site still exists. If this occurs, removal of the facilities will be extremely difficult if not impossible. The facilities include metal, plastic, and asbestos piping, plastic lining, and a metal building used for storage (presumably including fuel for the pump). Dispersal of the asbestos piping into Baker Lake with the possibility of it being washed up into campgrounds and boat launches is a significant hazard.</p>	<p>Baker River Inundation</p> <p>This comment was considered in the context of both safety and the request for accelerated schedule.</p> <p>You also expressed concern that there is a risk that the Baker River could occupy the site and would result in the transite piping being dispersed into Baker Lake and transported to beaches where it would be encountered by the public. The risk of the Baker River occupying the site is remote, and to our knowledge the potential likelihood for this to occur has not increased. Moreover, it is very unlikely that the piping would be dislodged and transported elsewhere. Transite pipe is cement based and as such it does not float. Should the Baker River change course and inundate the spawning beach site, it would need to scour several feet into the gravel to expose the remaining pipe buried several feet below the surface. Even in the unlikely event the piping would become so exposed, it would need to sever pipe segments which are attached in a grid work, raise such pieces above the ground surface elevation and then transport it elsewhere. Consequently, PSE does not believe this is a likely scenario to justify accelerating the decommissioning schedule directed by the License order, Settlement Agreement, USDA-FS Section 4e terms and conditions, and the NMFS Biological Opinion.</p>

9.5 Comment Correspondence

-----Original Message-----

From: LouEllyn_Jones@fws.gov [mailto:LouEllyn_Jones@fws.gov]

Sent: Monday, April 06, 2009 8:20 AM

To: Aspelund, Arnie

Subject: Comments on the Fish Propagation Facilities Plan SA No. 101

We have no comments on this plan.

Lou Ellyn Jones, Fish and Wildlife Biologist
Division of Conservation and Hydropower Planning
Western Washington Fish and Wildlife Office
U.S. Fish and Wildlife Service
510 Desmond Dr.
Lacey, WA 98503

telephone: 360-753-5822

fax: 360-753-9518

Louellyn_jones@fws.gov



United States
Department of
Agriculture

Forest
Service

Mt. Baker-Snoqualmie
National Forest
Mt. Baker Ranger District

810 Highway 20
Sedro-Woolley, WA 98284
(360) 856-5700

File Code: 2770

Date: June 2, 2009

Arnold Aspelund, Consulting Natural Resource Scientist
Puget Sound Energy
P.O. Box 97034 PSE-09S
Bellevue, WA 98009-9734

ENERGY PRODUCTION

JUN 03 2009

Dear Arne,

AND STORAGE

Thank you for the opportunity to review the Draft Fish Propagation Facilities Plan for License Article 101 for the Baker River Project FERC 2150. We have the following comments related specifically to Article 101(d): decommissioning of the Sockeye Spawning Beaches 1, 2 and 3.

Discussions regarding the decommissioning of Spawning Beaches 1, 2 and 3 and associated facilities (including earth dam, piping and buildings) have been ongoing for years. (Facility removal was previously approved by the Forest Service under a Decision Notice and FONSI signed 1/31/1989). Since that time the threats to national forest resources at that site have continued as further described below. The Forest Service requests PSE to begin to planning immediately for the decommissioning of Beaches 1, 2, and 3, the earth dam and all associated facilities. Full decommissioning and site remediation should be completed during the 2010 field season.

- No production has occurred from Beaches 1, 2, and 3 since 2006 due to the lack of reliability. Replacement production has been in place offsite since 2002 in the form of artificial incubation.
- The change in language between the license article quoted on page 5 and the plan on page 13 is not acceptable. Given the high risks involved with leaving the facility in place, the low risks of failure at Beach 4 and the artificial propagation facilities, there is insufficient reason for modifying the intent of the article to retain "the *potential* for sockeye fry production"
- The later sentence on page 13 stating that the plan will not be provided until after completion of the hatchery renovation (and potentially an additional year) is inconsistent with the settlement agreement and license requirements. There is a high risk of flood or movement of the Baker River channel impacting the site. This risk is well known and is one of the primary reasons that Beach 4 was constructed 20 years ago (in addition to the inadequate water supply at Beach 3).

Ongoing impacts occurring at the site are as follows:

1. The earth dam or weir that impounds water for the supplying Beach 3 is failing. The dam is being head-cut and impacting fish habitat downstream.
2. Asbestos piping in Beach 2 is exposed to the air which is a known hazard, and an unacceptable liability for the forest. FERC should be notified of this situation under 18 CFR Part 12 as an unresolved safety issue which requires corrective action. The site



Caring for the Land and Serving People

Printed on Recycled Paper



BAK.20090602.0148.USDA

should be secured and warning signs maintained until asbestos containment and abatement can be completed according to state and federal law.

3. Channel migration of the Baker River is ongoing and has cut-off access to this site, most recently in 2003 and 2006. The road is being retained (with difficulty) only because PSE has not removed its facilities from this site.
4. The risk of Baker River occupying the site still exists. If this occurs, removal of the facilities will be extremely difficult if not impossible. The facilities include metal, plastic, and asbestos piping, plastic lining, and a metal building used for storage (presumably including fuel for the pump). Dispersal of the asbestos piping into Baker Lake with the possibility of it being washed up into campgrounds and boat launches is a significant hazard.

We request that PSE accelerate this project schedule to facilitate complete decommissioning of the spawning beaches and all associated facilities by December 2010. In addition, we request that immediate action be taken to reroute flows through the culvert in the earth dam, preventing further head-cutting and the threat of catastrophic failure.

Please address any questions to Greta Movassaghi at 360-856-5700-x233. Please send copies of the final plans and the FERC approval letters, once received, to Greta at the address above.

Sincerely,


for JON VANDERHEYDEN
District Ranger

cc: Kim Lane
Aquatics Working Group
FERC