

# **Construction Quality Control Inspection Plan**

## **Baker River Hydroelectric Project FERC Project No. P-2150-033, 027 Baker River Adult Fish trap Renovation Project**

**March 2009**

### **1. Introduction**

Puget Sound Energy (PSE) owns and operates the Baker River Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. P-2150-033, 027. The Project is located on the Baker River in the Whatcom and Skagit Counties, Washington. The Project consists of a two dams forming Baker Lake at the Upper Baker development and Lake Shannon at the Lower Baker Lake.

On October 1, 2008, FERC issued a new license (License) to PSE to operate the Project. As authorized under the License, PSE will make several modifications and improvements to the Project's Facilities.

This Construction Quality Control Inspection Plan will cover the renovation of the existing adult fish trap.

The major construction activities are expected commence in March of 2009 and will include mobilization; clearing and grubbing; grading, demolition, and removal of existing structures; excavation, installation of a cofferdam at the trap intake and outfall of the stress relief ponds, placing structural concrete above ground; installation of 16" and 36" dia. buried pipe, building construction with associated electrical and mechanical; demobilization; and site restoration.

### **2. Organization of Quality Control Inspection Team**

PSE will provide continuous daily inspection of all construction work at the Project site. Mr. Tom Kerfonta, an experienced Construction Manager employed by PSE, will be stationed at the Project for the duration of the work to provide full-time construction management services.

Included within those services are PSE's stringent requirements for Quality Control and Inspection. PSE's Construction Manager will manage and schedule those daily inspections from a multitude of resources. Some of those resources include PSE's Design Consultant, R2 Engineering; PSE's Geo-Technical Consultant, Geo-Engineers, for oversight of the In-Water-Work Protection Plan (IWWPP), Construction Stormwater Pollution Prevention Plan, Water Quality (CSWPPP), and Soil Compaction; Materials Testing and Consulting Inc., for concrete and welding inspection and testing services. Additionally, PSE will employ a full time QA/QC field inspector provided by NW Utility Services with construction experience in dam and pipeline projects.

PSE's Construction Manager also works closely with PSE's Project Manager and Project Engineering staff to collectively provide a unified, skilled and professional Quality Control Team

### **3. Duties, Responsibilities and Qualifications of Inspection Staff**

The field inspector(s) shall be responsible for ensuring the work is being executed in accordance with the plans and specifications. Deviations from the plans and specifications shall be immediately brought to the attention of PSE's Construction Manager who will notify the Project Manager and Project Engineer. Change Orders may only be approved by PSE's Construction Manager with the acknowledgement and approval of the Project Engineer or Project Manager. PSE's Construction Manager will have the authority to stop the contractor's work if, in the opinion of the field inspector, the contractor is not executing the work in accordance with the plans, specifications, and permits, or to ensure worker safety,

### **4. Field Testing**

PSE's inspectors will witness shop and field tests performed by the contractor and its subcontractors, and report any deviations from the plans and specifications. A written report of all test results will be prepared by PSE's inspectors.

Field testing anticipated for this work will include inspection of soils compaction, rebar placement, concrete testing including; slump, air and strength, nondestructive testing and visual inspection for welds and typical testing of electrical and mechanical equipment including startup and testing procedures.

### **5. Field Laboratory Facilities**

There will be no field laboratory facilities required for the work.

### **6. Commercial Testing**

Commercial testing firms will be hired to perform concrete strength testing and shop inspection and testing services and soils testing as described in 2 above:

Material Testing & Consulting, Inc.  
Mr. Steven Barrie  
360-647-6061

GeoEngineers (IWWPP & SWPPP)  
Ms Amanda Fickeisen  
360-441-2961  
Mr. Brian Anderson  
425-750-1326

## 7. Consultants

R2 Engineering is the Design Engineering firm for the Upper Baker Hatchery Renovation Project. R2 will assist PSE with shop drawing reviews, providing clarification of the plans and specifications, preparing design change notices as needed, and possibly other construction management services on an as-needed basis as directed by PSE. In addition to the design firm identified above, PSE has also contracted with GeoEngineers as the principle consultant for oversight of the IWPPP and the CSWPP plan.

## 8. Construction Sequence

Table 1 summarizes the preliminary sequence and schedule of the major construction activities.

**Table 1 Preliminary Construction Schedule**

<b>Construction Activity</b>	<b>Preliminary Schedule</b>
<b>Construction</b>	<b>March 2009 – June 2010</b>
<b>Mobilization and TESC Installations</b>	<b>April 2009</b>
<b>Coffer dams (in water work)</b>	<b>August 2009 – September 2009</b>
<b>Stress relief Ponds</b>	<b>July 2009 – Jan 2010</b>
<b>36" supply line</b>	<b>April 2009 – Sept. 2010</b>
<b>16" water supply line</b>	<b>August 2009 – January 2010</b>
<b>Sampling Facility</b>	<b>August 2009 - March 2010</b>
<b>Sorting Pools</b>	<b>December 2009 – April 2010</b>
<b>Existing Fish Trap</b>	<b>September 2009 - April 2010</b>
<b>Sorting Flume Structure</b>	<b>January 2010 - May 2010</b>
<b>Startup - Punchlist</b>	<b>April 2010 – July 2010</b>

## 9. In-Water-Work Protection Plan (IWPPP) and Construction Stormwater Pollution Prevention Plan (CSWPPP)

In accordance with FERC Order #2493, a Water Quality Protection Plan and a Stormwater Pollution Prevention Plan have been prepared for the project. PSE has contracted with GeoEngineers to oversee compliance of these plans and Best Management Practices (BMP) and ensuring that the contractor is in compliance with all plan specifications and permits. The IWPPP and CSWPPP will be monitored by Amanda Fickeisen, 360-441-2916 and Brian Anderson, 425-750-1326, of GeoEngineers.

**EXHIBIT A**

**Baker River/Adult Fish  
Trap Renovation Project  
Quality Control Inspection  
Plan**

