



PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY

P.O. Box 1231, Wenatchee, WA 98807-1231 • 327 N. Wenatchee Ave., Wenatchee, WA 98801
(509) 663-8121 • Toll free 1-888-663-8121 • www.chelanpud.org

November 14, 2008

P-637-WA

NATDAM-WA00004

Mr. Patrick Regan, P.E., Regional Engineer
Portland Regional Office
Federal Energy Regulatory Commission
805 SW Broadway, Suite 550
Portland, OR 97205

Re: Chelan River Project Monthly Report

Dear Mr. Regan:

In accordance with your letter of June 19, 2008, enclosed herewith are an original and two copies of the fifth monthly report for the Chelan River Project. In addition, copies of this letter and the report will be sent to Mr. Jon Merz and Ms. Pat Irle of Washington Department of Ecology.

If you would like to discuss this work or if additional information would be helpful, please call me at the number listed below, or call Michelle Smith, Licensing & Compliance Manager, at (509) 661-4180.

Sincerely,
Engineering Services

M. Gene Yow, P.E.
Dam Safety Manager
(509) 661-4305
gene.yow@chelanpud.org

Enclosures: Original and two copies

cc: Jon Merz, WaDOE
Pat Irle, WaDOE

Chelan River Project – Monthly Report
Lake Chelan Hydroelectric Project – FERC No. 637
Public Utility District No. 1 of Chelan County

November 15th, 2008

1. Progress of Work

The work is on schedule. Lake level is being managed to control spillway flows. Environmental conditions are being monitored, and contingency planning is being done with the aim of reducing potential effects on unfinished work in Reach 4.

Work on the new river channel habitat regime, pump station, conveyance canal, and hydraulic control structure (boulder weir) are actively in progress, and on schedule.

Work at Chelan Dam for the Low Level Outlet has been postponed. The originally scheduled start was in September. The new start date is in December, 2008.

Progress on the site has included:

- The hydraulic control structure is 75% complete, including the grouting. Otherwise, the Reach 4 spill channel is complete.
- The pumped water conveyance canal earthwork and lining is complete except for the south end and north end. Remaining work on the ends will coincide with completion of the concrete installation at the pump station.
- Outlet structure concrete placement is now complete. Installation of the gates, diffuser screens, and walkway, remains to be done.
- All of the boulders needed for the project are now on-site. Placement of boulders continues.
- Boulder cluster installation at the upstream entrance to the habitat channel is now complete, including the grouting.
- Pump station concrete placements continue. The footing slab and grade beams are in place, and work on the retaining wall is underway.
- Habitat channel excavation is 95% complete. Fish mix and riffle mix installation is 95% complete. Remaining work to be done in the channel includes installation of toe boulders in pool areas, boulder clusters, and log jams.

2. Status of Construction

The lower tailrace habitat work began July 1, 2008, on schedule, and is now substantially complete.

Pumped water outlet structure concrete construction is complete, on schedule. Mechanical work is anticipated to be complete in mid-December.

Work continues on the pump station structure. Footing slab and grade beams are in, and construction of the retaining wall is underway.

All other phases of the work are expected to start on schedule.

See project milestone schedule which follows.

Activity Name	Original Duration	Start	Finish	Duration % Complete
LC07b Chelan River Project	950	11-Dec-06 A	04-Aug-10	53.61%
Costs	542	02-Jan-08 A	11-Mar-10	37.82%
Planning	698	28-Feb-07 A	30-Nov-09	61.89%
Tree Relo & Boulder Process (Mostly 08-SW04)	91	20-Mar-08 A	18-Jul-08 A	100%
Entrance Road Modifications	133	05-Mar-08 A	14-Aug-08 A	100%
Execution (Construction of 08-01)	680	11-Dec-06 A	15-Jul-09	74.85%
Pre-Construction Activities	51	12-May-08 A	02-Jun-08 A	100%
Pump Station Construction	625	11-Dec-06 A	27-Apr-09	51.46%
Reach 4 Construction	269	02-Jun-08 A	15-Jul-09	36.43%
Low Level Outlet Construction	445	01-Oct-07 A	01-Jul-09	66.76%
Revegetated Areas	257	04-Aug-09	04-Aug-10	0%
Closeout	22	16-Jul-09	14-Aug-09	0%
Testing	22	16-Jul-09	14-Aug-09	0%
Project Turnover	2	31-Jul-09	04-Aug-09	0%
Closeout	5	04-Aug-09	10-Aug-09	0%

3. **Construction Difficulties**

No unanticipated difficulties have been encountered thus far on the project.

4. **Contract Status**

Goodfellow Brothers, Inc. (GBI) of Wenatchee, WA, is the general contractor and is performing the majority of the work themselves.

Malcolm Drilling of Kent, WA, a specialty foundation contractor, installed the foundation piers to support the pump tubes and pumps.

Sharples Construction of Kent, WA built the concrete outlet structure for the conveyance canal. They are currently constructing the pump station concrete foundation and will be building the concrete outlet at the dam.

McCandlish Electric, Wenatchee, WA will be performing the electrical work.

Harbor Offshore, Ventura, CA, will be performing the diving operations, during installation of the tee screens and pump tubes.

5. **Critical Events and Dates**

- May 5 Notice to Proceed
- May 12 Begin Mobilization
- May 27 Begin work on site
- June 5 Set temporary bridge across Reach 4 spill channel
- June 5 Lake Chelan spill begins
- July 1 In-water construction work window begins
- July 15 Delivery of pump station pumps
- August 7 Delivery of T-Screens
- September 2 Delivery of pump tubes
- September 5 Completion of Tailrace Habitat construction
- October 27 Completion of Conveyance Canal Outlet Structure Conc

6. **Reservoir Filling**

N/A

7. Foundations

Drilling for pump station foundation piers did not encounter bedrock in any of the pier locations. This possibility was anticipated in the design so that an appropriate length for pier(s) not reaching bedrock was calculated and shown on the design drawings. This length was used, as planned.

The foundation excavation for the conveyance canal outlet structure has been completed. The foundation material consists of alluvial boulders and cobbles in a matrix of gravel and sand. These are the conditions anticipated by the design.

8. Sources of Major Construction Materials

Material for “fish mix” and “riffle mix”, two gradations of gravel used to construct the fish habitat, is being obtained from on-site sources. See drawing 0330-50GA-0028 (sheet R1) in the bid documents for borrow area locations. The material has been regularly tested, inspected, and meets the contract specifications.

Boulders have been obtained from both on-site and off-site sources. The boulders are generally from alluvial sources along the Columbia River Valley.

The required Large Woody Debris (LWD) has been delivered to the job site from various sources along the Columbia River Valley. The LWD includes 154 poplar trees for racking, 65 root balls, 85 conifer key logs, and approximately 100 conifer racking logs.

Concrete is being supplied by Chelan Concrete and Central Washington Concrete. The cement will be supplied by Lehigh Cement.

Gates and valves for the Low-Level Outlet are from J&S Valve and HydroGate. Submittals for this equipment have now been approved.

Pumping equipment and controls are being provided under separate contract by ITT Flygt, Inc. The pumps and major components have been delivered to the job site, on schedule.

9. Materials Testing and Results

Structural concrete has been placed and tested, and structural embankment material for which density tests are required has been placed. Test results meet the contract specifications. Canal shotcrete lining has been placed, and tested to verify conformance with the contract specifications. No exceptions have been noted.

10. Instrumentation

No instrumentation has been installed at this point in the project. Information will be provided as appropriate in future reports.

11. Photographs



This shows Reach 4 looking south, on November 7th, 2008. The pumped water conveyance canal has been shotcreted. Concrete forms removal is underway on the Pumped Water Outlet Structure. The Hydraulic Control Structure is 75% complete, including grouting. Reach 4 (spill channel) is 95% complete. Grading of the Habitat Channel is 95% complete.



Picture taken on 10/29/08 showing a typical boulder cluster. The newly placed grout locks the boulders together to create a structure that will dissipate energy from flows entering the habitat channel.



This is the high elevation portion of the hydraulic control structure. Picture taken on 10/29/08, showing previously placed concrete, intended to lock the structure together.



Conveyance canal overflow spillway section under construction, 10/30/08. Boulders have been installed and grout was placed this day.



Picture taken on 11/3/08. Concrete for the pumped water outlet structure has been completed, and forms are still in place. Rock embankment material placement is underway.



Pump station foundation slab and grade beams have been placed. Retaining wall forms and rebar underway. 11/4/08



6X6 Off-road dump trucks hauling riffle mix to the habitat channel. 11/5/08



Aerial photo of lower tailrace habitat, Nov 5, 2008. The lighter-colored areas on the tailrace channel bottom are “redds” which salmon have prepared for spawning. Note that the newly placed habitat fill is being heavily used for spawning.

12. Erosion Control and Other Environmental Measures

A variety of steps have been taken thus far in the project to protect surface water and soil, in accordance with the project’s approved Water Quality Protection Plan and Erosion & Sediment Control Plan. These include placement of silt fences and sediment curtains, and deployment of an oil boom. Washington Department of

Ecology staff has visited the project site on several occasions. No water quality violations have been cited.

A sediment curtain was installed in the powerhouse tailrace channel around the temporary earth berm at the pump station, prior to placement of the berm. The sediment curtain, along with an oil boom, remained in place during drilling for pier installation. The steps taken have been effective at limiting sedimentation to acceptable levels. The equipment has now been removed since the temporary earth foundation used for concrete pier construction staging has been removed.

The oil boom that was installed downstream of the confluence of the Chelan powerhouse tailrace channel and the new channel, has now been removed. Work is underway above elevation 710 in the habitat channel, and is protected by a temporary berm which separates work from affecting the water.

13. Other Items of Interest

A large number of salmon are currently spawning in the lower tailrace habitat. The habitat fill was constructed to design lines and grades, using the specified fish mix. The final test is whether the areas is actually used. The area has clearly passed this last test.