



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

May 14, 2009

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 eleventh 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

May 15th, 2009

1. Progress of Work

The work is on schedule and in conformance with the plans, specifications, and permits. No environmental incidents have occurred. No safety incidents have occurred.

Work on the new river habitat channel, pump station, and conveyance canal (including the outlet structure), is actively progressing. The hydraulic control structure (boulder weir) was completed on schedule. The habitat channel is complete with the exception of one access road area.

Work at Lake Chelan Dam for the Low Level Outlet is ongoing. The concrete work on the outlet structure is 95% complete. LLO piping installation is well underway.

Progress on the site includes:

- The hydraulic control structure is complete.
- Reach 4 spill channel is complete except for removal of the temporary bridge and establishing permanent slope rock work.
- The conveyance canal is 95% complete. Remaining work includes the afterbay concrete placement.
- Conveyance canal outlet structure is complete. The gates are installed and grouted in place. The diffuser screens are in, and walkways / handrails have been installed.
- All of the boulders are now in place in Reach 4.
- Pump station concrete placements are substantially complete. The door aprons, concrete sidewalk, and afterbay concrete remain.
- The pump tubes have been set, and the supports grouted into the drilled pier casings.
- Electrical work at the pump station is substantially complete. Pumps need to be installed and tested.
- The two pump station transformers are set and powered up.
- Habitat channel is complete except for final grading of one access road which is being used for construction access.

2. Status of Construction

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

Canal outlet structure concrete construction is complete, on schedule, and slide gates and diffusion gratings are in place. Installation of miscellaneous metals (e.g. walkway grating) is complete.

Pump station work is continuing, on schedule. The control buildings are set, transformers are set, and conductor installation is complete. The retaining wall handrail has been installed as well as the junction boxes. The 42" diameter discharge pipes have been installed, and the afterbay excavation is underway.

Concrete has been placed for the Low Level Outlet, with the exception of the sidewalk. The 60" gate valves and sluice gates have been set, with stems and operators still to be added.

The 84" LLO piping placement is underway. Some joints have been welded and inspected. This work continues. Concrete placement for the bulkhead, has begun.

All remaining 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	780	07-Sep-07 A	27-Sep-10	54.78%
Costs	564	02-Jan-08 A	11-May-10	54.96%
Planning	652	07-Sep-07 A	31-Mar-10	65.49%
Execution (Construction of 08-01)	236	01-Nov-08 A	15-Oct-09	53.39%
Pump Station Construction	19	07-May-09 A	01-Jun-09	26.32%
Reach 4 Construction	236	01-Nov-08 A	15-Oct-09	53.39%
Low Level Outlet Construction	62	01-Apr-09 A	22-Jun-09	53.23%
Revegetated Areas	257	28-Sep-09	27-Sep-10	0%
Closeout	33	09-Sep-09	23-Oct-09	0%

3. **Construction Difficulties**

No unusual/extraordinary 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. Subcontracted work includes:

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 also constructed the retaining wall for the pump station, including the footing slab and grade beams.

McCandlish Electric, Wenatchee, WA is performing the electrical work.

Harbor Offshore, Ventura, CA, performed the diving work for installation of the tee screens and pump tubes.

Lampson International, Kennewick, WA, supplied the cranes and riggers for installation of the pump tube assemblies.

DDJ Construction Welding, Inc., Enumclaw, WA, performed the demolition work on the sheet pile wall and bulkhead at the 17-foot penstock at Chelan Dam. They are also welding the pipe sections of the LLO piping.

The work is on schedule, and is anticipated to remain on schedule through completion of the work.

5. **Critical Events and Dates**

2008

- 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
- November 17 Completion of Hydraulic Control Structure
- December 5 Begin work at Chelan Dam for the Low Level Outlet
- December 12 Completion of Canal Outlet Structure Concrete

2009

- January 29 Completed setting pump tubes and grouting
- March 9 Begin tunnel stub work at Chelan Dam
- March 11 Set the two power transformers for the pump buildings
- March 17 Set the control buildings upon their foundations
- March 25 Set the 42" diameter discharge pipes at the pump station
- May 1 Installed the 60" gate valves and sluice gates at the LLO

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 piers 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.

The foundation excavation for the low level outlet has been completed. The foundation material consists of alluvial sand and gravel, with some cobbles and boulders. 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, was obtained from on-site sources. See drawing 0330-50GA-0028 (sheet R1) in the bid documents for borrow area locations. The material was regularly tested, inspected, and met the contract specifications.

Boulders were obtained from both on-site and off-site sources. The boulders are generally from alluvial sources along the Columbia River Valley. All boulders needed for the project are on-site.

The required Large Woody Debris (LWD) was 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. The cement is being supplied by Lehigh Cement.

Gates and valves for the Low-Level Outlet are from J&S Valve and HydroGate. The equipment is on-site and installed.

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 fill 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

Instruments that have been installed so far include the following:

- Temperature sensor at Pump No. 1, TT-141, at the northern-most pump, near the T-screen
- Differential pressure bubbler line, ¼-inch copper line, sensing point is the bottom elevation of the T-screen for pump No. 3.
- Level switch LSH-151 has been installed in the main transformer's vault
- Level switch LSH-152 has been installed in the auxiliary transformer's vault

11. Photographs



This shows the Conveyance Canal Outlet Structure, looking south, on April 22, 2009. Notice that the canal shotcrete lining has been completed. The slide gates, walkway and handrails have been installed.



This is looking upstream through the low level outlet (LLO) outlet structure. View is through the concrete penetration for the valves, to the outlet piping. April 24, 2009.



This picture shows the 85" diameter LLO piping. A completed heat-shrink sleeve has been installed over a welded joint. Picture taken on 4/16/09.



This picture was taken on 4/24/09. This is the last section of 85" diameter LLO piping, which bifurcates to two 60" diameter pipes. The 60" pipes lead to the valves at the outlet structure.



Picture taken on 5/7/09. This photo shows one of the backfilled 42" diameter discharge pipes (yellow piping). Forms are installed for the sidewalk along the retaining wall. Notice the pump tubes are covered, awaiting installation of the pumps.



Picture taken on 5/7/09. This is a photo of the afterbay drain piping. A fusion welder is being utilized to join the sections of HDPE pipe.

12. Erosion Control and Other Environmental Measures

All work has been performed in accordance with the project's approved Water Quality Protection Plan and Erosion & Sediment Control Plan. This includes 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 occurred.

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 permitted levels. The equipment has been removed since the temporary earth berm 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 been removed. Work is underway above elevation 710 in the habitat channel, and surface water is protected by a temporary berm which separates work from nearby water.

13. Other Items of Interest

Commissioning of the pump station is targeted for June, 2009. Commissioning of the low level outlet is scheduled for July, 2009.

No injuries or safety incidents have occurred.