

PUBLIC UTILITY DISTRICT NO. 1 *of* CHELAN COUNTY
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June 12, 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 twelfth 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

June 12th, 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.

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 complete, with some backfill remaining.

Progress on the site includes:

- The hydraulic control structure is complete.
- Reach 4 spill channel is complete except for establishing permanent slope rock work.
- The conveyance canal is 98% complete. Remaining work includes installation of the afterbay drain valve and finishing the low-flow channel.
- 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 complete.
- 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.
- Air burst piping is approximately 50% complete.
- 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 concrete is complete.

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 complete. The 60" piping has been installed. Completion of backfilling remains. Concrete placement for the bulkhead is complete.

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	**1014**	**11-Dec-06 A**	**02-Nov-10**	**64.33%**
Costs	225	21-Feb-08 A	02-Jan-09 A	100%
Planning	698	28-Feb-07 A	30-Nov-09	82.38%
Tree Relo & Boulder Process (Mostly 08-SW04)	89	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)	744	11-Dec-06 A	14-Oct-09	87.63%
Pre-Construction Activities	51	12-May-08 A	02-Jun-08 A	100%
Pump Station Construction	679	11-Dec-06 A	14-Jul-09	96.04%
Reach 4 Construction	333	02-Jun-08 A	14-Oct-09	72.37%
Low Level Outlet Construction	446	01-Oct-07 A	02-Jul-09	95.52%
Revegetated Areas	257	03-Nov-09	02-Nov-10	0%
Closeout	30	04-Jun-09 A	09-Nov-09	40.34%

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
- April 30 Powered up the transformers and control buildings
- May 1 Installed the 60" gate valves and sluice gates at the LLO
- May 28 Final inspection of LLO wet tunnel and piping
- June 2 Bump tested the pump station pumps
- June 3 Completed concrete placements for the afterbay
- June 3 Verified operation of outlet structure slide gates

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.

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.

The concrete supplier is Chelan Concrete. The cement supplier is 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.

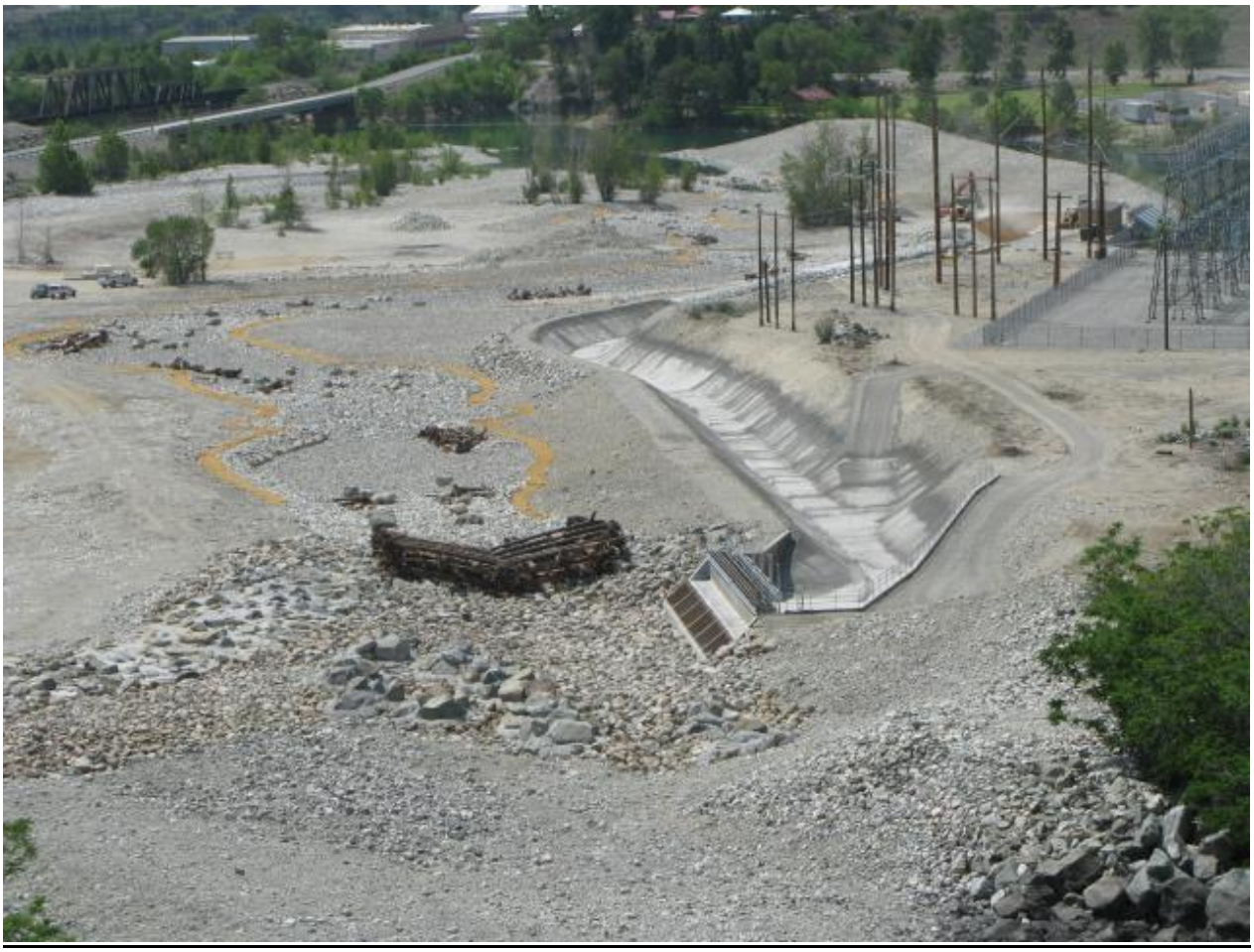
10. Instrumentation

Instruments that have been installed so far include the following:

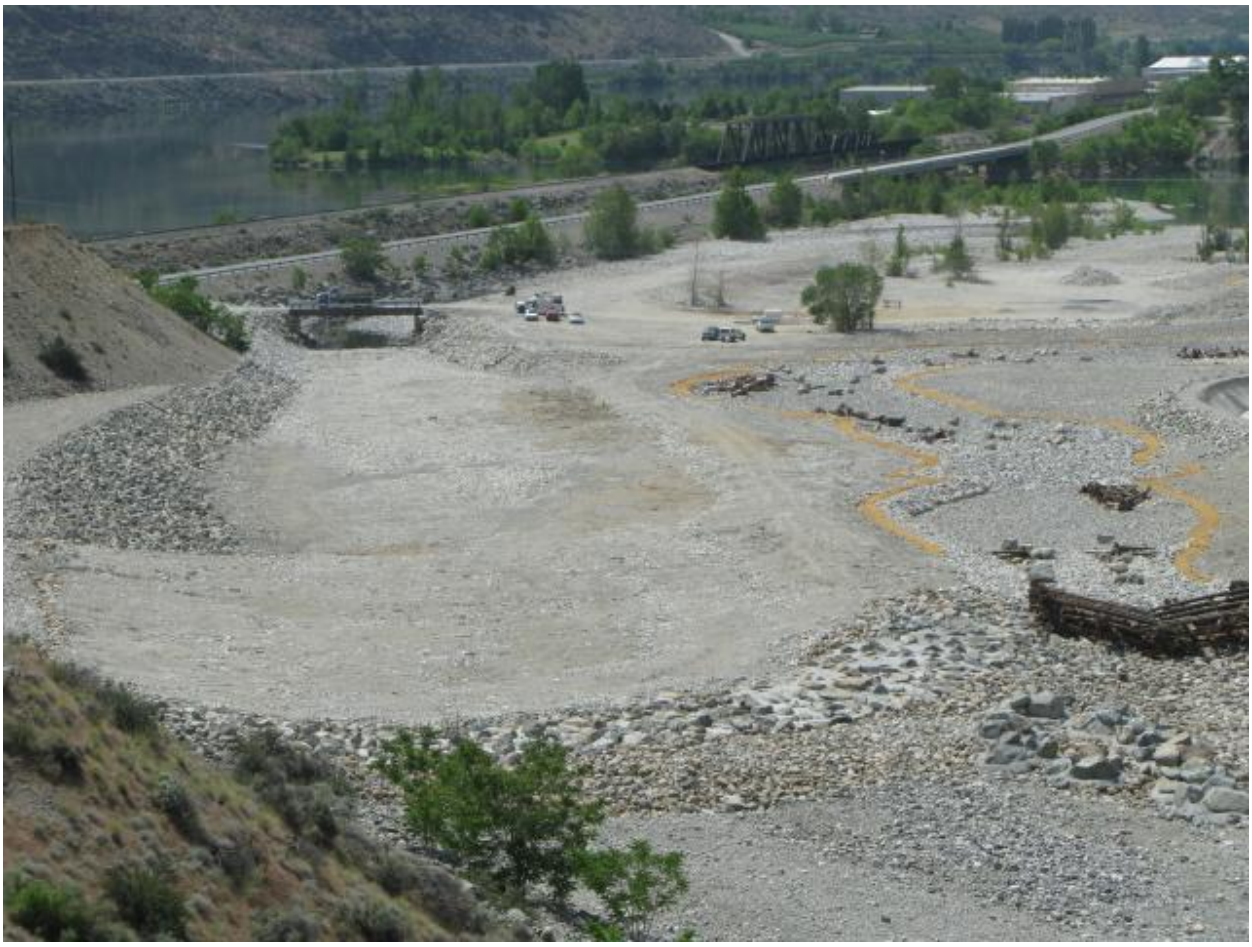
- Temperature sensor at Pump No. 1, TT-141, at the northern-most pump, near the T-screen
- Differential pressure bubbler line, ¼-inch copper line, sensing point is the bottom elevation of the T-screen for pump No. 3.
- Level switch LSH-151 has been installed in the main transformer’s vault
- Level switch LSH-152 has been installed in the auxiliary transformer’s vault
- Temperature sensor at the pumped water outlet structure, TT-142

- Level sensors LS-131-1 and LS-131-2 have been installed at the pumped water outlet structure, on either side of the northern-most slide gate.
- The pumped water conveyance canal velocity meter (Doppler unit) has been installed.

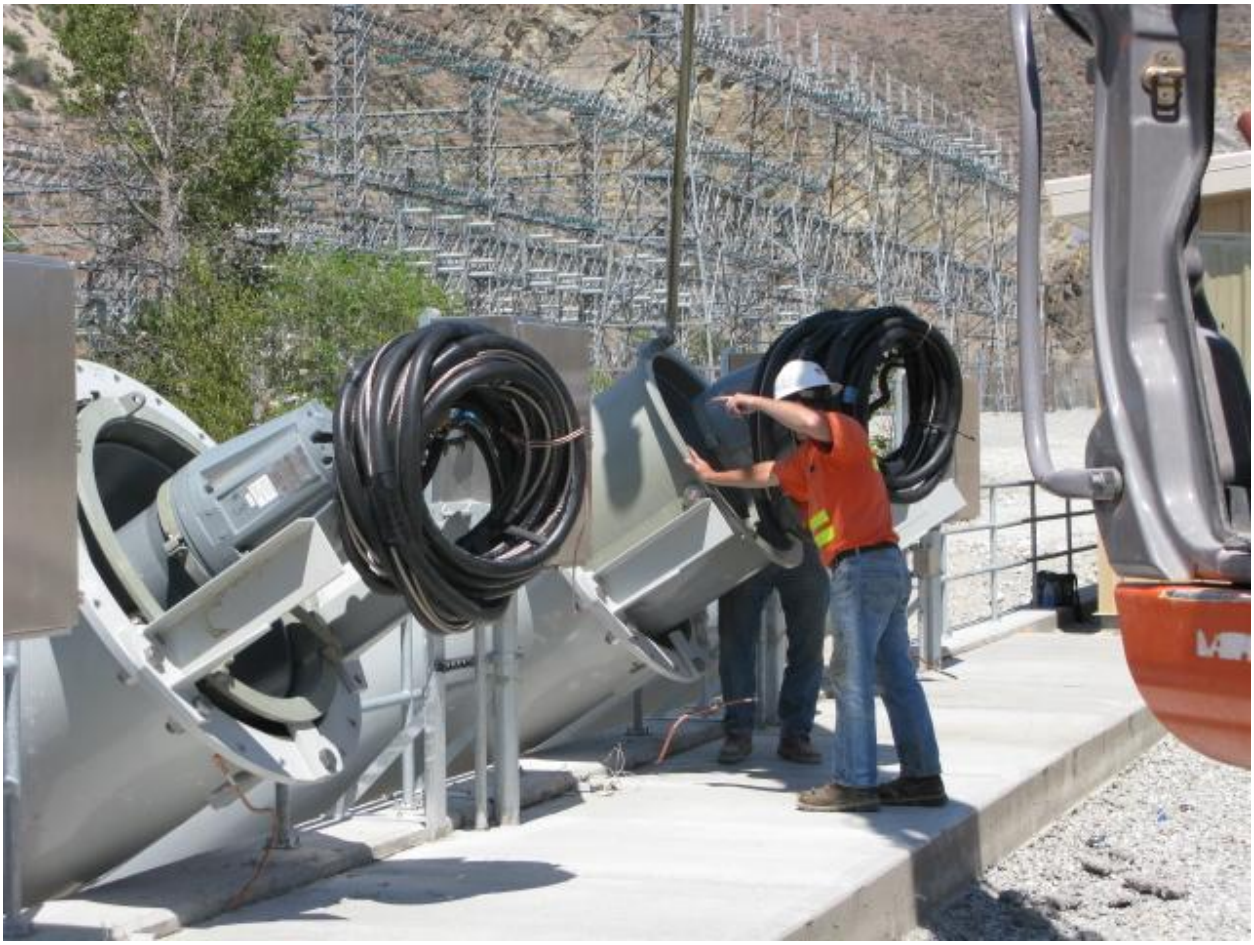
11. Photographs



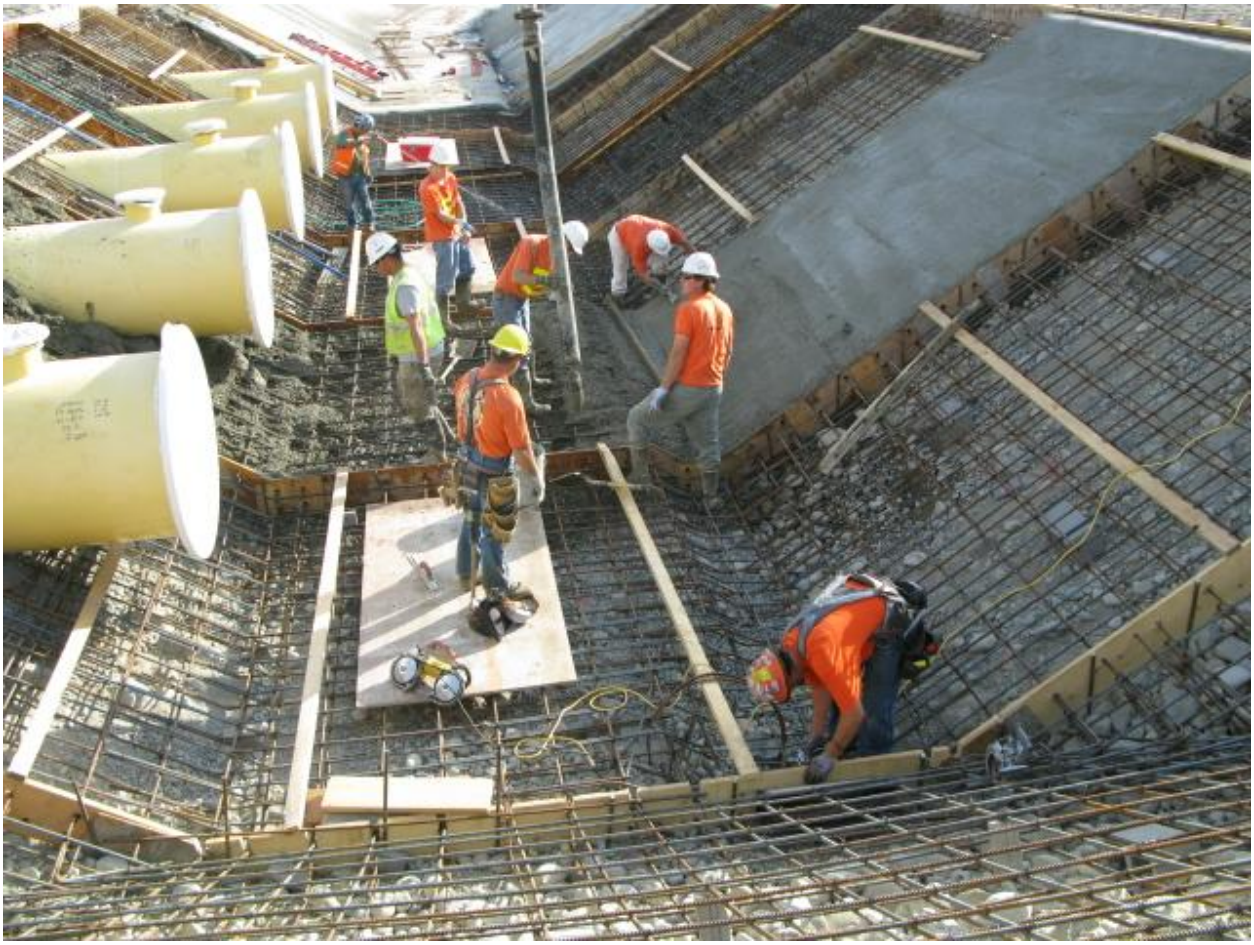
This is a picture of the head end of the habitat channel, taken on June 5th, 2009. The entrance log jam is shown along with the conveyance canal and outlet structure. All large woody debris structures and rock features are in place. The riparian strip, made up of topsoil and fabric, is noticeable along the edges of the habitat channel. Plantings will be installed during the 2009 dormancy period, this fall.



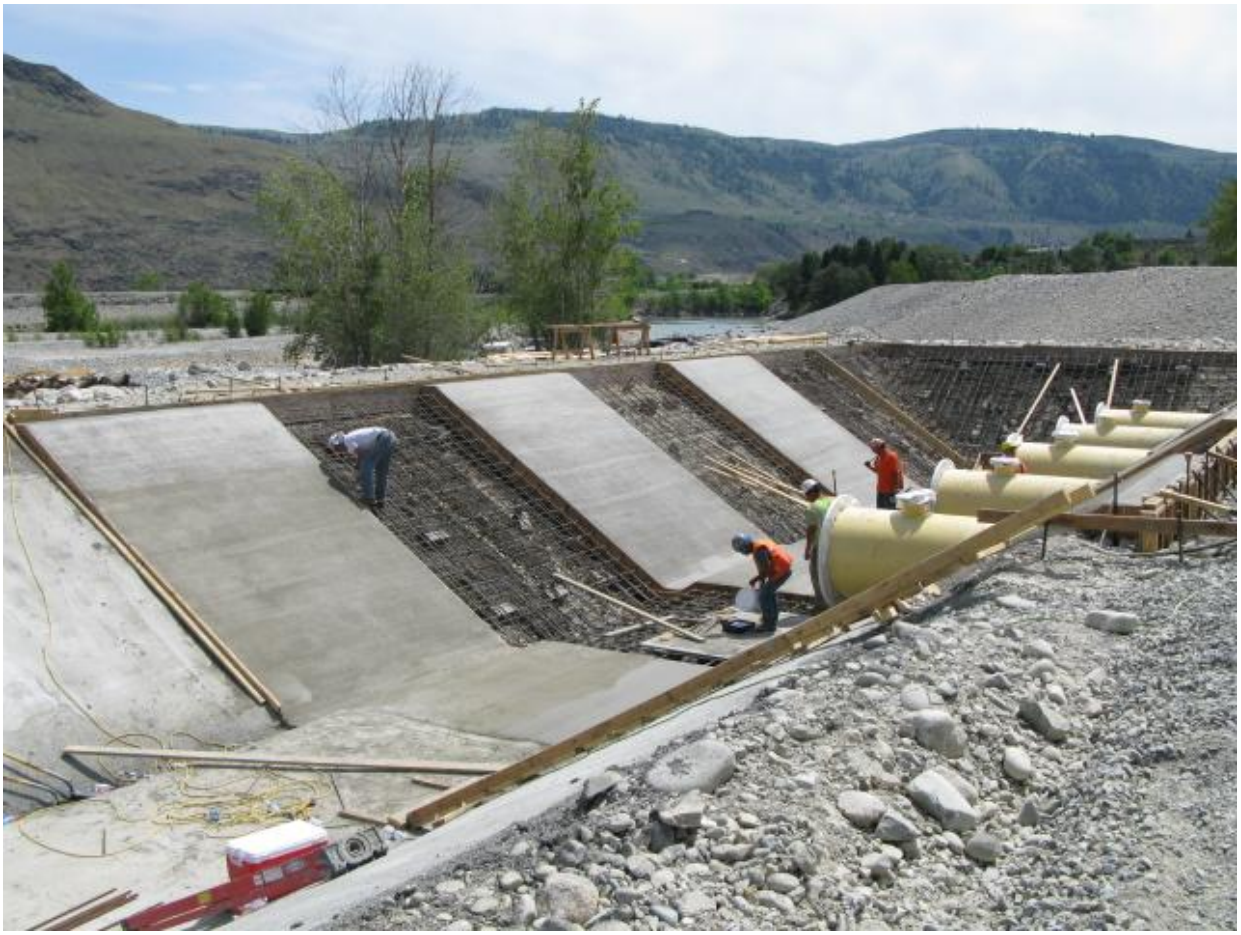
This is a picture of the head end of the spill channel, also taken on June 5th, 2009. The hydraulic control structure is complete, with its visible grout along the strip at the entrance to the spill channel.



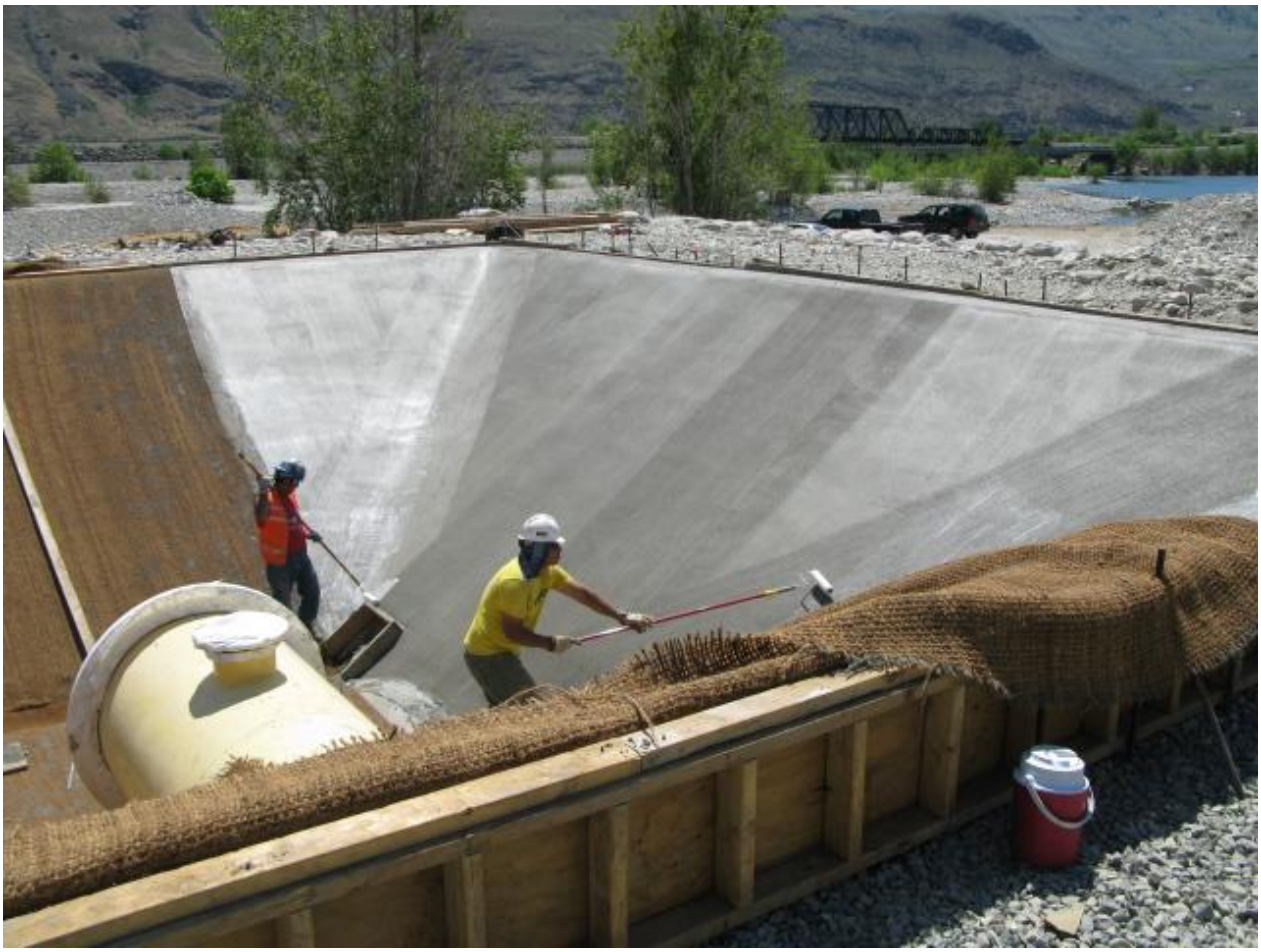
The five pumps have been mounted inside the pump carriers, and the pump carriers have been temporarily set inside the pump tubes. This picture was taken on May 20th, 2009. This was done in preparation for checking rotation with the permanent power system supplied from the control building.



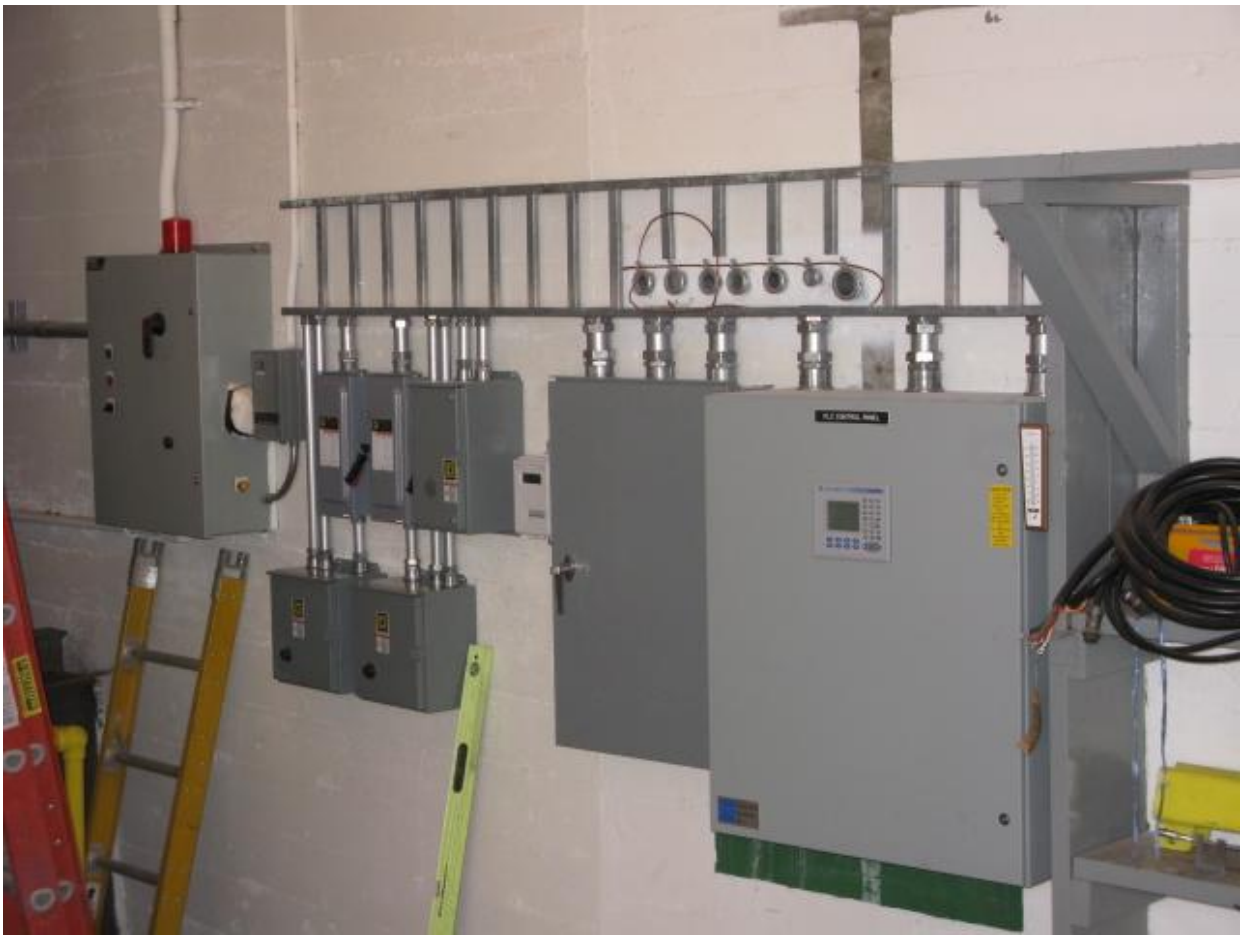
This is a picture of the afterbay at the pump station. This was the first day of 3 days of concrete placements, where 165 cubic yards of concrete was scheduled. Picture was taken on June 1st, 2009.



Picture taken of the afterbay at the end of the day, June 1st, 2009. Notice the contractor's placement method of skipping sections so there would be access to finish the concrete.

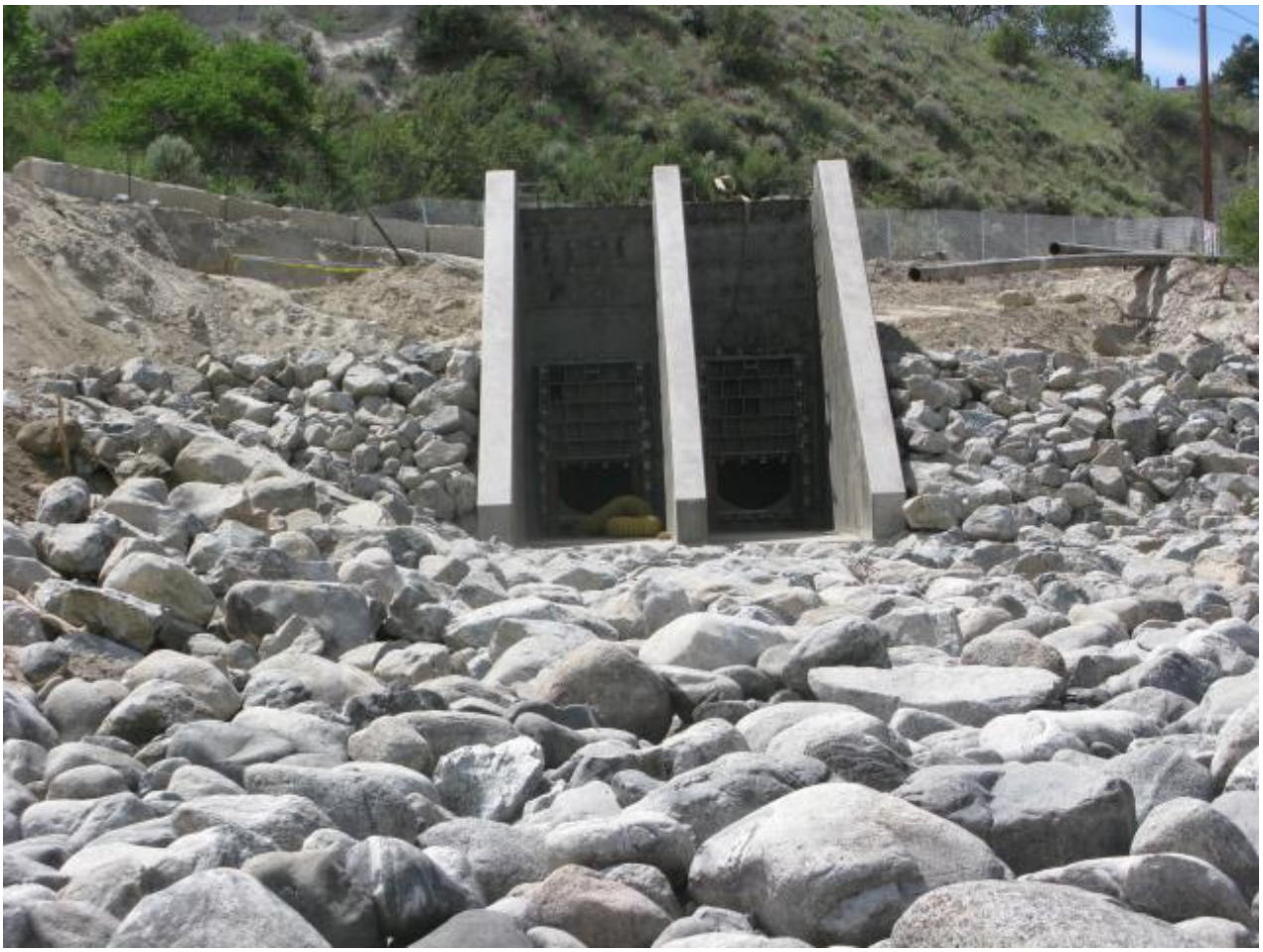


At the end of the day, June 3rd, 2009, concrete curing was applied to the last concrete placed. Burlap was placed afterward, and kept wet.



This is a picture of the new panel installation in the valve house at Chelan Dam. Picture was taken on June 4th, 2009.

This is a picture of the two 60” gate valves before welding was completed. Picture was taken on May 11th, 2009.



This is a picture of the LLO outlet structure, looking upstream. Picture was taken on May 27th, 2009. The rip rap has been placed and backfill behind the structure is underway.

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

Spill from Lake Chelan, to control the lake level, began on June 8 with a flow of 240 cfs. This is expected to increase to a volume of about 3,000 cfs by the date of this report. At this time, spill releases from the dam are expected to continue until early August. The pump station will not normally be operated during periods of flow greater than 320 cfs, so commissioning will not be performed under this flow regime. Instead, commissioning of the pump station will be rescheduled for August, 2009, after the end of spill to control lake level. Commissioning of the low level outlet is scheduled for July, 2009.

No injuries or safety incidents have occurred.