

BLUE LAKE EXPANSION PROJECT

Report No. 23

Month ending October 31, 2014

SCOPE

- 83 ft. dam raise with modified tunnel system and new 15.9 MW powerhouse (\$89 million)
- Eight supply contracts for Owner-Furnished equipment and materials (\$16 million)

PROJECT HIGHLIGHTS DURING THIS MONTH

- October 1 – Excited the Unit 5 generator for the first time.
- October 2 – Placed Unit 5 on the Medium Voltage bus.
- October 3 – Began implementation of SCADA programming in new control room.
- October 4 – Oil test results were received indicating that main transformer T1 was arcing inside, indicating possible failure of this transformer. T1 was taken off line for investigation.
- October 4 – Standby Generator was used for station service power.
- October 6 – Wet testing began on BL-3.
- October 8 – Began removing bottom chamber from BL-3 to identify rub in turbine.
- October 14 – Performed internal inspect of T1 with WEG (the manufacturer).
- October 15-19 – Removed failed T1 and installed/assembled the 69 kV transformer in its place.
- October 18 – Water Treatment Plant accidentally flooded.
- October 20-27 – Performed dam contraction joint grouting from elevation 403 to 425.
- October 22 – Completed testing the replacement T1 transformer and placed it in service.
- October 23 – Completed BL-5 full load rejection test.
- October 24 – Completed 12 hour run of BL-5 reaching milestone 5 signifying the end of the Generation Outage.
- October 25 – Completed BL-3 full load rejection test.
- October 26 – Began Blue Lake T/G operator training.
- October 27 – Performed maximum tunnel flow test.
- October 27 – Began demolition of the No. 2 side of the switchyard.
- October 28 – Inspected tunnel rock trap to verify maximum tunnel flow.
- October 28 – Refilled tunnel so Blue Lake water is available for raw water and drinking water on a continuous basis.
- October 30 – Barnard completed Water Treatment Plant piping tests.
- October 30 – Completed BL-4 full load rejection test.
- October 31 – Completed Index testing on BL-3 and BL-5.
- October – Bruce Belley and Tal Honadel continued to test SCADA equipment in preparation for supervisory operation in early November. Implemented the control station and SCADA system installation.
- October – Barnard crews completed all major concrete placements on the dam. The spillway is being sacked and patched as planned.
- October – Barnard completed the installation of the FVU turbine scroll case.

COST SUMMARY - updated 10/31/2014

| Project Element | Current Contract Total or Projected Amount | Payments | |
|--|--|---------------------|-----------------------|
| | | Paid this Month | Paid to Date* |
| Supply Contracts | | | |
| Contract 1 - Turbine Generator Equipment | \$11,801,058 | \$ 3,232 | \$ 11,795,115 |
| Contract 2 - Switchgear | \$647,672 | \$ - | \$ 612,799 |
| Contract 2A/2B - SS/Raw Water Switchgear | \$300,000 | \$ - | \$ 208,547 |
| Contract 3 - Gates and Hoist | \$780,185 | \$ - | \$ 703,376 |
| Contract 4 - Penstock | \$836,315 | \$ 41,816 | \$ 837,593 |
| Contract 5 - 69 kV Transformers | \$603,406 | \$ 30,239 | \$ 573,369 |
| Contract 6 - Bridge Crane Equipment | \$270,518 | \$ - | \$ 272,298 |
| Contract 7 - Steel Building | \$1,145,712 | \$ 56,966 | \$ 1,147,754 |
| Contract 8, Debris Management** | \$2,258,714 | \$ - | \$ 1,150,610 |
| Contract 9, General Construction | \$94,884,196 | \$ 5,061,637 | \$ 87,449,869 |
| Temporary Filtration** | \$1,651,424 | \$ 56,250 | \$ 1,030,672 |
| Diesel Fuel | \$1,260,000 | \$ 50,608 | \$ 218,307 |
| Remaining Project Costs | | | |
| License Amendment | \$1,400,000 | \$ 3,673 | \$ 1,299,833 |
| Engineering | \$9,498,393 | \$ 38,188 | \$ 11,968,871 |
| Construction Management | \$8,076,201 | \$ 351,574 | \$ 7,532,526 |
| City Performed Work | \$1,495,000 | \$ 88,634 | \$ 2,070,321 |
| Incentive Payment | \$1,600,000 | \$ - | \$ - |
| Cost of Bond Issuance/Reserve Account | \$3,500,000 | \$ - | \$ - |
| TOTALS | \$142,008,794 | \$ 5,782,816 | \$ 128,871,861 |
| ESTIMATED TOTAL PROJECT COST | \$145,256,724 | | |

*Paid to Date includes unpaid retainage

COST CHANGES THIS MONTH

- By reaching milestone 5 early Barnard will be due an incentive payment.
- With the end of the project in sight, the cost summary indicates in an overrun in certain contracts and project elements. But, due to underruns, the overall budget is of \$145,256,724 is not expected to be exceeded.
- It will be necessary to transfer funds within the project to balance the individual contracts and project elements.

CONSTRUCTION SCHEDULE MILESTONES: PLANNED/ACTUAL

| | | | |
|---------------------------|-------------------------|------------------------|-------------------------|
| Construction Start | 11-20-2012 / 12-03-2012 | Sub. Comp. BLU #3 | 10-26-2014 / |
| Drainage Tunnel complete | 07-01-2013 / 05-05-2013 | Sub. Comp. FVU | 11-12-2014 / |
| Tunnel Ex. complete | 08-19-2013 / 07-24-2013 | Sub. Comp. BLU #5 | 11-22-2014 / 10-24-2014 |
| Intake Structure complete | 06-04-2014 / 06-04-2014 | Substantial Completion | 02-01-2015 / |
| Begin Generation outage | 08-24-2014 / 08-17-2014 | | |
| End Generation outage | 10-26-2014 / 10-24-2014 | | |

NOTES ON PROJECT SCHEDULE

- The most recent look-ahead schedule submitted by Barnard shows the following work to be performed in November:
 - Complete dam spillway sacking and patching.
 - Remove dam formwork.
 - Begin demobilizing the large crane.
 - Focus on the completion punch list.
 - Substantial completion is scheduled for January 2015.

OTHER ITEMS OF INTEREST

- We expect to have the Generation Operators move into the control room the second week in November.
- Turbine governing under isochronous control with multi-unit operation will be set up and tested the first week in November.
- A site service representative from Gilkes, UEE and EPS will be required to return in January to complete electrical testing of the FVU and synchronous motor mode operation of the BLU units.
- The Temporary Indian River water supply will be dismantled in November.

PROJECT RISK PROFILE

A discussion of the major risk areas follows below. As a general rule risks are measured as follows:

LOW: Probability of less than 10%, or mitigation cost less than \$1 million.

MODERATE: Probability of more than 30%, or mitigation cost up to \$5 million.

HIGH: Probability of more than 60%, or mitigation cost likely more than \$5 million.

The City's project team believes the following risk areas will dominate the potential for increases in overall Project cost. We also believe these areas pose the greatest risk for schedule delays.

Construction Schedule: In Barnard's most recent (October 31, 2014) schedule, substantial completion is listed as January 2015. There are negligible consequences of not meeting this date.

CURRENT RISK: VERY LOW

Weather and Lake Levels: Water levels in Blue Lake and Green Lake are better than expected at the end of October.

CURRENT RISK: VERY LOW

Temporary Water Filtration Plant: The plant will be disassembled in November.

CURRENT RISK: VERY LOW

Repair, Installation and testing of T2: We will be dependent on a single main transformer in the Blue Lake switchyard until the second main transformer, T2, is installed.

CURRENT RISK: LOW

Other: This is a broad combination of bad things that might happen such as: earthquakes; construction site accidents; floods; extreme winter weather; fire; labor unrest; etc. We expect that many of these risks would be covered by insurance at least in part.

CURRENT RISK: VERY LOW

PROJECT PHOTO RECORD THIS MONTH

Photos are taken of each work area each month from a fixed location to document construction progress by work area. Relevant photos of the project for this month are provided on the following pages.



Figure 1. Dam and Left Abutment Area, Barnard crews completed all major concrete placements on the dam and performed dam contraction joint grouting from elevation 403 to 425.



Figure 2. Intake Portal and Right Abutment, The spillway is being sacked and patched as planned.



Figure 3. Gate House Location, Continued paving access road to the lake.



Figure 4. Dam Staging area, no change this month.



Figure 5. Lower Portal Area, Barnard completed Water Treatment Plant piping tests.



Figure 6. Powerhouse Site, no change this month.

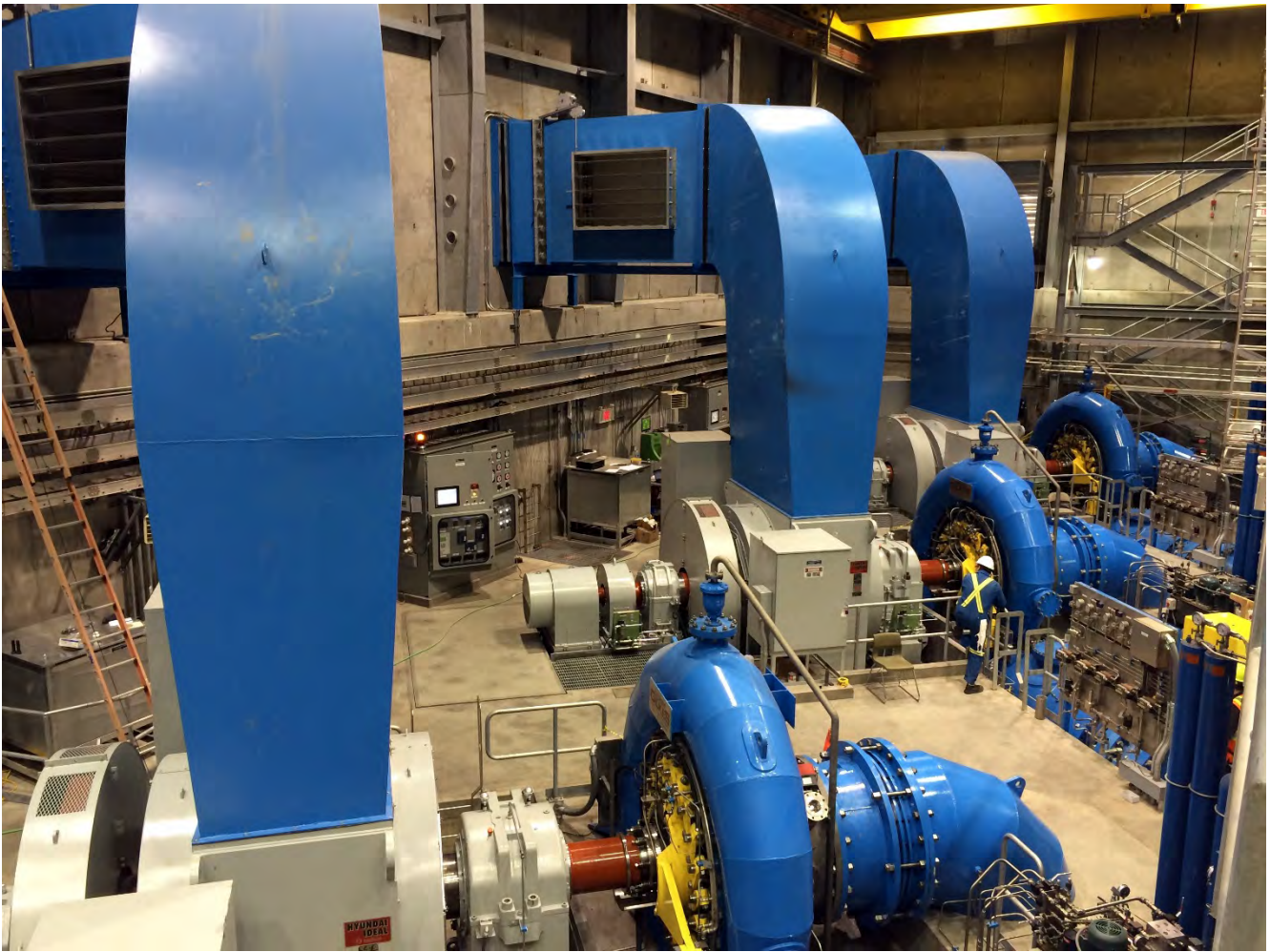


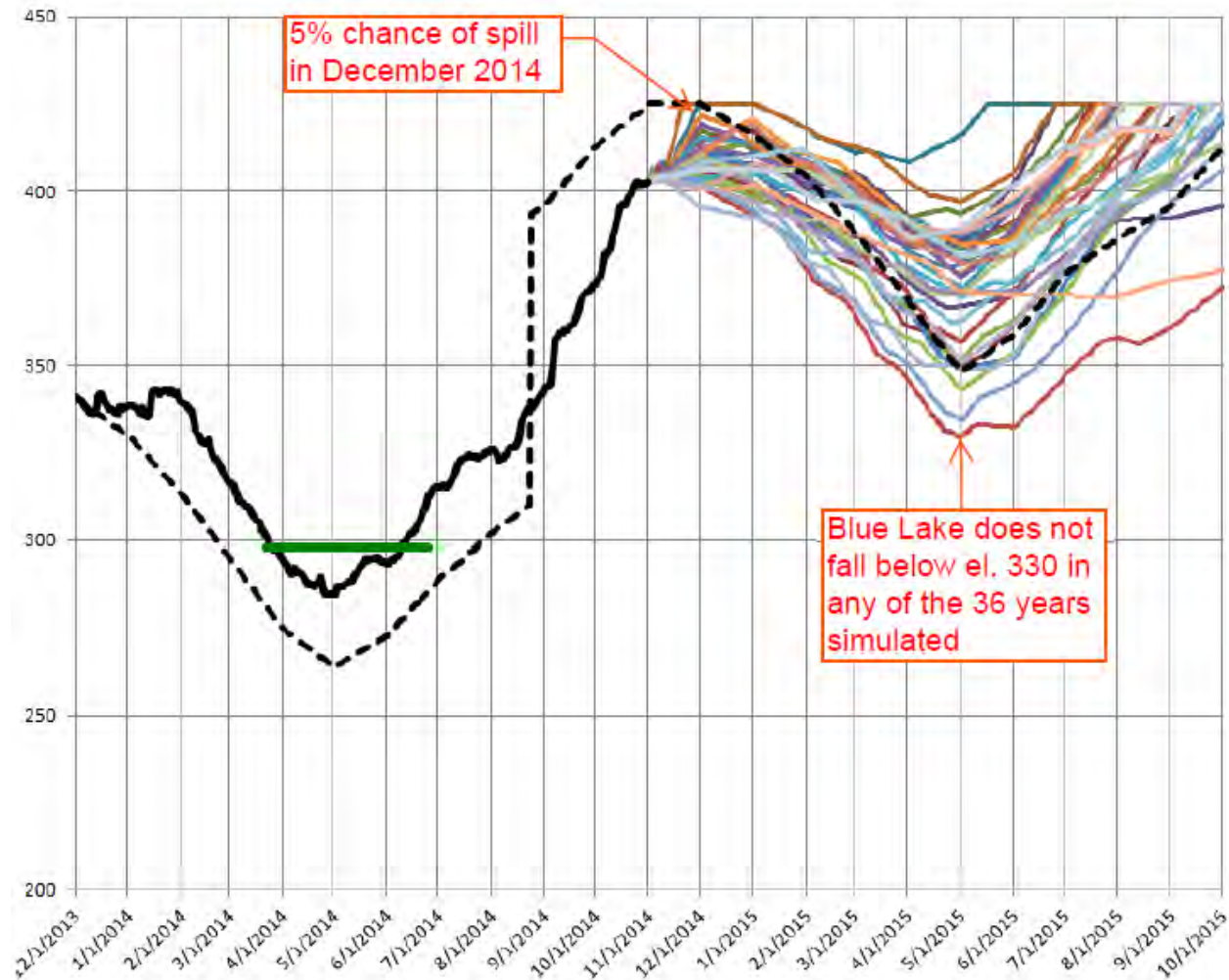
Figure 7. Powerhouse Interior, Placed Unit 5 on the Medium Voltage bus and completed BL-5 full load rejection test. Completed 12 hour run of BL-5 reaching milestone 5 signifying the end of the Generation Outage. Completed BL-3 full load rejection test. Completed BL-4 full load rejection test. Completed Index testing on BL-3 and BL-5 Bruce Belley and Tal Honadel continued to test SCADA equipment in preparation for supervisory operation in early November. Implemented the control station and SCADA system installation.

Blue Lake Level Forecast

Case 31. Start November 1, 2014. Multi-year simulation using 36 year hydrologic record. 117,000 MWH system load and average year inflows. Blue Lake powerhouse is now capable of limited operation with local operator staffing. The powerhouse will be capable of regular commercial operation in early November 2014 when operating staff are able to move into the new Blue Lake powerhouse control room.

This is the final reservoir level forecast for the construction effort. The risk of low water and limited hydro generation in 2015 is now essentially zero.

Blue Lake water level simulation



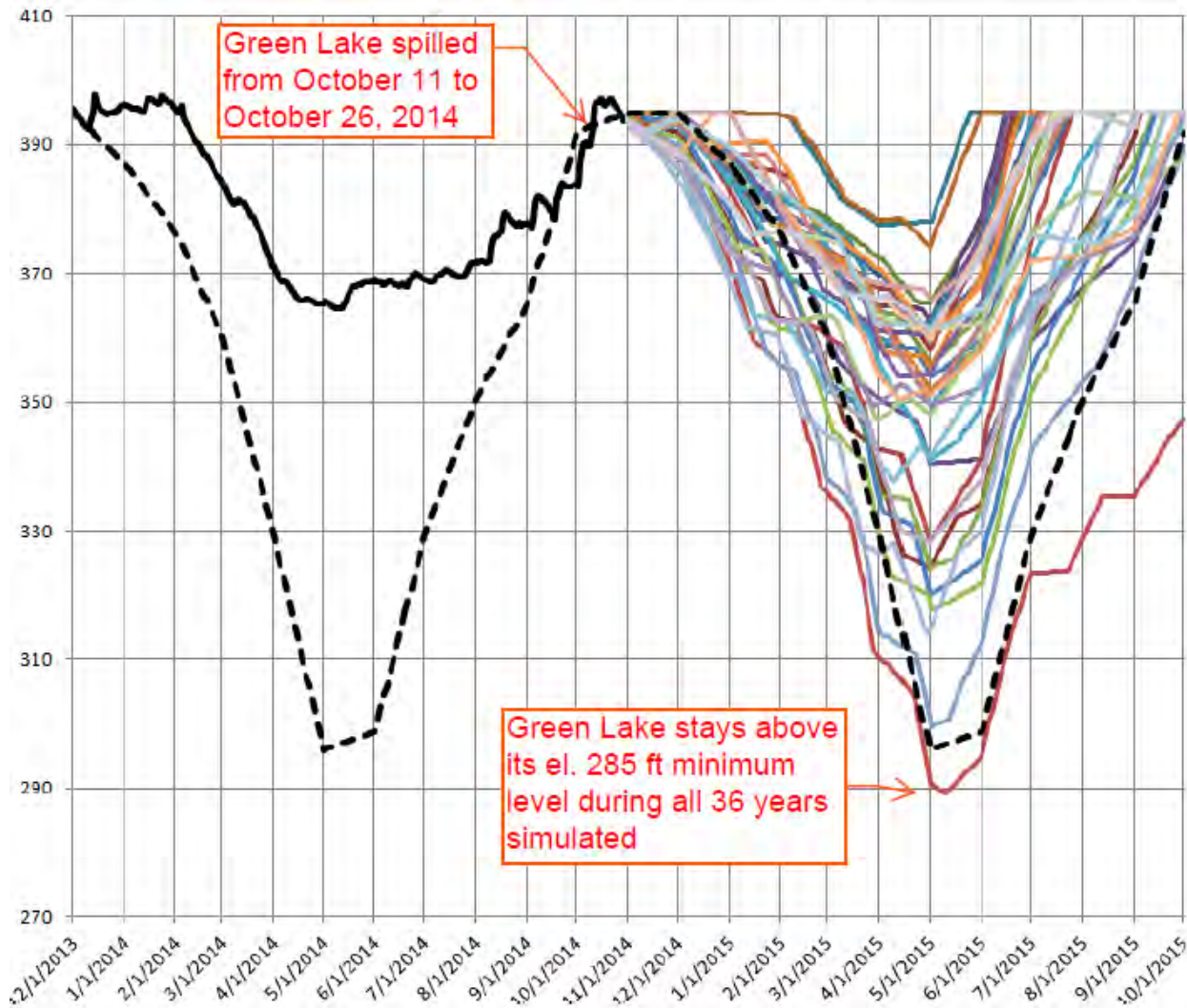
Total diesel generation predicted by this simulation:

| Period | Dates | MWH of diesel | Cost at \$0.45 per kWh |
|-------------------|------------------------|---------------|------------------------|
| Spring 2014 | - | 0 | \$0 |
| Generation Outage | Aug 17 – Oct 24, 2014 | Limited | Note 1 |
| Spring 2015 | Mar 30 – June 16, 2015 | 53 | \$23,000, Note 2 |

1. A limited amount of diesel generation was employed during testing of the new Blue Lake turbine-generators
2. Estimated average fuel used, reflecting the one exceptional dry year in 36 year simulation.

Green Lake water level simulation

With average year inflows, the likelihood of spill from Green Lake in November 2014 is 44%. If we approach spill at Green Lake this winter the generation at Blue Lake will be backed off to ensure Blue Lake fills as much as possible.



Appendix 1 to Monthly Update for City Assembly

October 31, 2014

Summary of Temporary Filtration Project Status

Alternative Water Source Filtration System (Blue Lake Project):

The Blue Lake tunnel is back in service and the Temporary Filtration Plant will be taken out of service in early November.

Summary of Titan 130 Diesel Turbine Project Status

The Titan 130 Diesel Turbine was utilized during the load rejection tests on the Blue Lake Units. There were no upsets in the CBS electrical system during the tests, this is in part due to stability of the Titan Turbine.

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

For Period Ending: OCTOBER 31, 2014

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

1. Progress of work

Environmental Protection

Barnard continues to install erosion and sediment control measures as required at the dam site, storage yard at Sawmill Cove Industrial Park and powerhouse area as ground disturbing activities continue. BMP maintenance and repair is ongoing as needed throughout the project site. Barnard is removing BMP's as final restoration is done in completed work areas.

Gate Chamber

Barnard completed the punchlist work in the gate chamber in September ahead of rewatering the tunnel. BCCI and Schmolck completed the necessary re-work on the level sensor piping.

Gate House

Final punchlist work continues in the gate house.

Dam Raise

Barnard crews completed the final concrete placements on the dam in October. We have started stripping the formwork for the spillway and training walls. We have also completed approximately 60% of the sack and patch work on the spillway. Barnard and Jacobs also completed phase 2 of the CJ grouting program. AAA Fence completed installation of the fencing on the left abutment.

Fish Valve Unit

BCCI continued installation of the FVU turbine and generator. The embedded conduits were completed and generator slab placement was completed. BCCI installed the generator, completed the anchor grouting and completed initial alignment of the shaft. BCCI installed the wicket gate actuator and the runner.

Powerhouse

NAES and Schmolck continued commissioning the balance of plant equipment as well.

NAES also continued installation and commissioning of all three units. NAES has installed the fire detection system and final commissioning was completed on October 28. NAES has also installed the control panels for the generator exhaust ducts and is commissioning the panels now.

ASRC/SEEM continue to work on punchlist items in and around the powerhouse. Major work activities include the ecoblock wall and backfill on the penstock as well as remediation to Sawmill Creek Road Guardrailings.

Barnard and NAES crews also completed installation of the piping and equipment for the Water Treatment Building. The plant will be put online in early November.

Generation Outage

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

For Period Ending: OCTOBER 31, 2014

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During the month of October, wet commissioning of the three turbine-generators was on-going. We have now completed the majority of the wet commissioning for all three units. Unit 5 completed the 12 hour load run at 6 MW (Approximately 70% gate) on October 24, 2014 completing the generation outage. Full load rejection tests were completed on Unit #3 (10/25/14) and Unit #4 (10/30/14) as well. Index testing, cross-current compensation checks and load sharing tests will be completed in early to mid-November.

CBS continued to install equipment in the new control room in anticipation of relocating the operators to the new powerhouse in early November.

Switchyard

T4 Transformer was installed and brought online on September 16. See below for construction issues encountered with T1 transformer. New fencing was installed around the switchyard in October. The existing #2 side transformers were removed and concrete demolition activities began in late October.

Temporary Filtration Plant

The temporary filtration plant was in service throughout October providing drinking water to Sitka during the Generation Outage. It will be removed in mid-November following successful startup of the Blue Lake Water Treatment Plant.

2. Status of Construction

Status of Ongoing Major Construction Activities

- Powerhouse Excavation –Complete
- Powerhouse Steel Building – Complete
- Powerhouse Roof - Complete
- Precast Wall Panels – Complete
- Dam Raise –Complete
- Dam Spillway – Complete
- Dam Parapet Walls and Crest Slab – Complete
- Left Abutment Thrust Block and Cutoff Wall – Complete
- Powerhouse Concrete – Complete
- Commissioning – 90% complete

See Section 1 above for construction work completed in October 2014.

3. Construction Issues

T1 Transformer was found to have a faulty tap-changer which resulted in a delay to the wet commissioning as well as requirement to remove the T1 transformer and replace it with the T2 transformer

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

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During the initial wet testing of Unit 3, a “rub” was identified between the turbine runner and the bottom chamber wear ring. Unit #3 was disassembled for inspection, the wear ring and runner remediated, cleaned and re-assembled following this work. The wet commissioning of this unit was completed in late October.

4. Contract Status

Barnard’s key subcontractors for the Blue Lake Project are as follows:

| Name | Scope |
|-----------------------------------|---|
| ASRC McGraw Constructors, LLC | Powerhouse Construction |
| Southeast Earthmovers, Inc. | Excavation |
| Blue Lake Tunnelers | Underground Construction |
| Crux Subsurface | Foundation Grouting, Micropiles, PRW’s |
| O’Neill Surveying and Engineering | Land Survey |
| Baranof Materials Test Lab | Quality Control |
| NAES Power Contractors | Turbine-Generator Installation/Electrical |

Barnard’s key material suppliers for the Blue Lake Project are as follows:

| Name | Scope |
|-------------------------------|----------------------------|
| ASRC McGraw Constructors, LLC | Concrete Supply |
| Gerdau Reinforcing Steel | Concrete Reinforcing Steel |
| Haskell Corporation | Misc. Metal Fabrication |

5. Critical Events and Dates

Please see attached summary progress schedule updated October 31, 2014.

Critical Dates for the Blue Lake Project are as follows:

| Milestone | Date | Required Status of Construction |
|------------------|--|--|
| 1 | 07/01/2013 | Drainage Tunnel Complete – Completed May 6, 2013 |
| 2 | 08/19/2013 | Initial Intake Excavation Complete – Completed July 21, 2013 |
| 3 | 06/04/2014 | Intake Structure Complete – Completed June 4, 2014 |
| 4 | 08/24/2014 | Ready for Generation Outage – Completed August 16, 2014 |
| 5 | 65 days after start of Generation Outage | Substantial Completion of 1 st Blue Lake Turbine Generator – Completed October 24, 2014. |
| 6 | 91 days after start of Generation Outage | Substantial Completion of 2 nd Blue Lake Turbine Generator – Completed October 25, 2014 |
| 7 | 80 days after start of Generation Outage | Substantial Completion of Fish Valve Unit |

6. Reservoir Filling

The reservoir is now at approximately EL 403.

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

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Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

7. Foundations

Not applicable for this report.

8. Sources of Major Construction Material

The City and Borough of Sitka will be providing most of the major construction materials for this project. Please see list below.

| Contract No. | Vendor | Scope of Supply |
|---------------------|---------------------------------|---|
| 1 | Gilbert Gilkes and Gordon, Ltd. | Turbines and Generators |
| 2 | Myers | 12.47 kV Switchgear |
| 3 | Linita Design and Manufacturing | Bulkhead Gate, Fixed Wheel Gate and Hoist |
| 4 | T Bailey, Inc. | Penstock and Manifold |
| 5 | WEG Electric | 69kV Transformers |
| 6 | Benchmark Industrial Services | Powerhouse Bridge Crane |
| 7 | CHG Building Systems | Powerhouse Building |

9. Material Testing and Results

Concrete testing is ongoing for the dam raise, gate chamber and powerhouse concrete.

No issues have been encountered to date.

10. Instrumentation

Not applicable for this report.

11. Photographs

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

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Figure 1: Tailrace during Unit 3 and 5 High Flow Test



Figure 2: Ecoblock Wall at Penstock

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

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Figure 3: 20" Raw Water Line into WTB



Figure 4: Upstream View of Dam Raise (WSEL 402)

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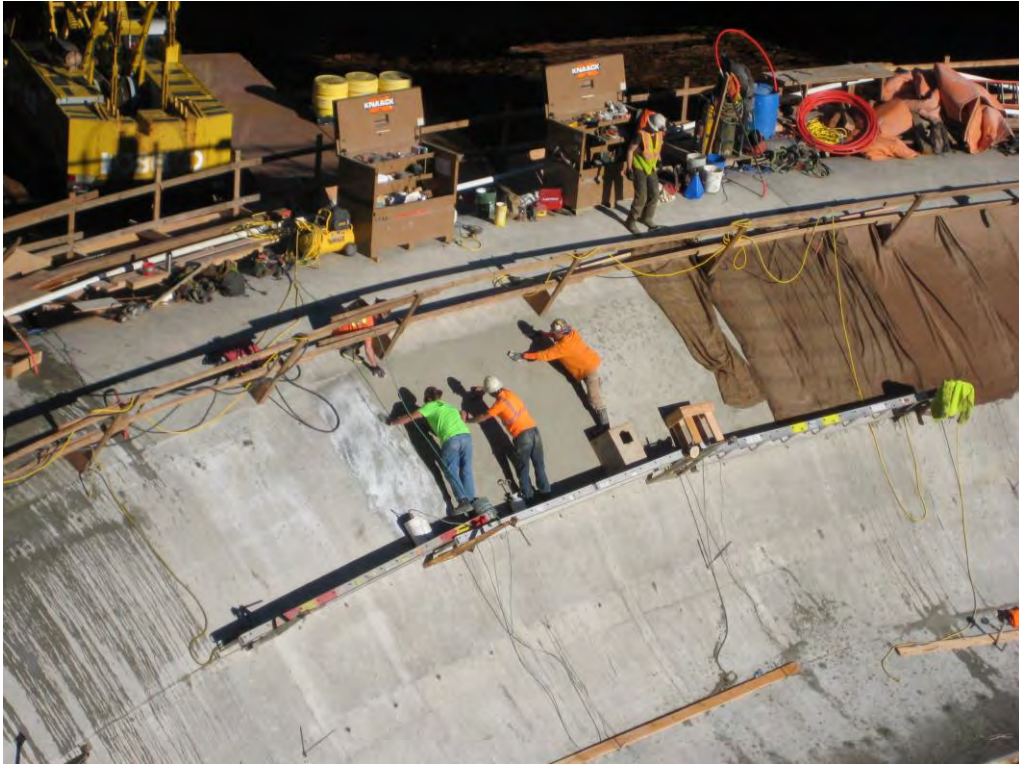


Figure 5: Sack and Patch Spillway Surface

12. Erosion Control and Other Environmental Issues

Barnard is continuing to install the required environmental protection measures on the project site ahead of ground disturbing activities. Ongoing maintenance of dewatering system at powerhouse excavation site will be required to maintain water quality in Sawmill Creek.

13. Other Items of Interest

Several project tours were completed in October, including the Southeast Conference on October 29, 2014.