

John Hart Generating Station Replacement Project

January 2017

Community Construction Update Report #43

Prepared by: Stephen Watson, BC Hydro

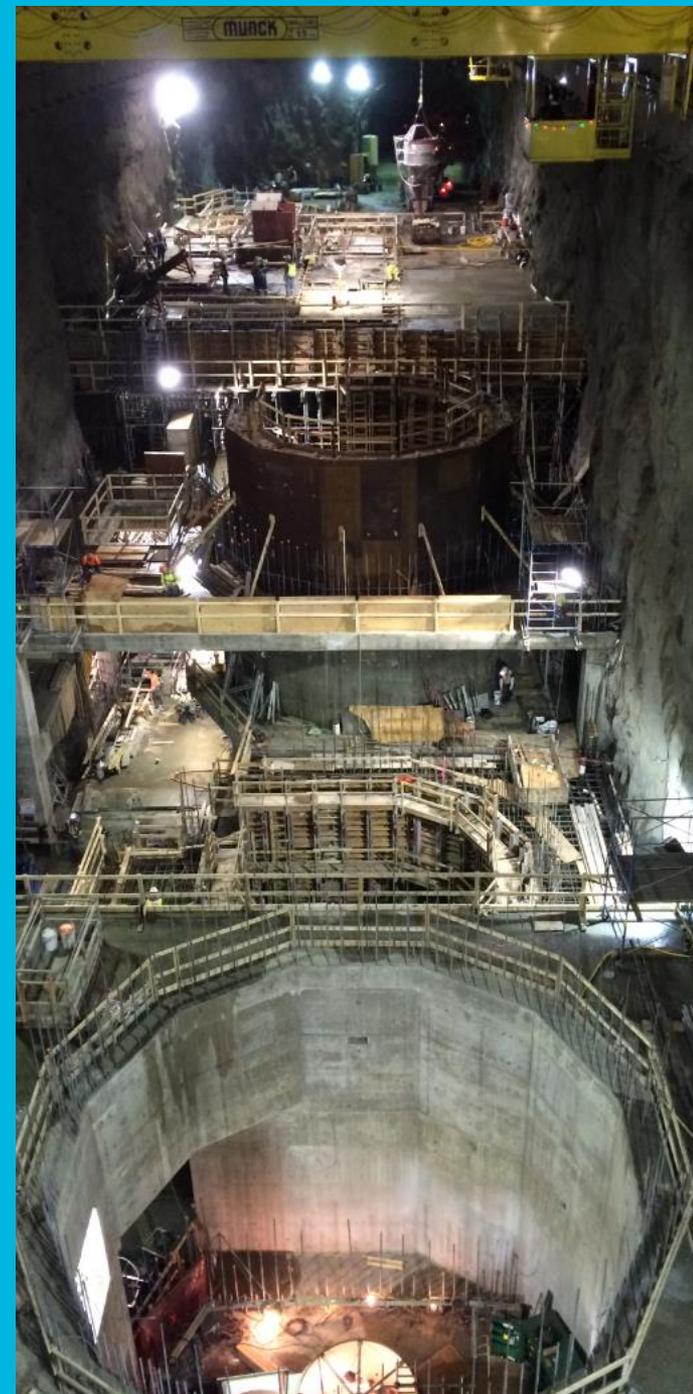
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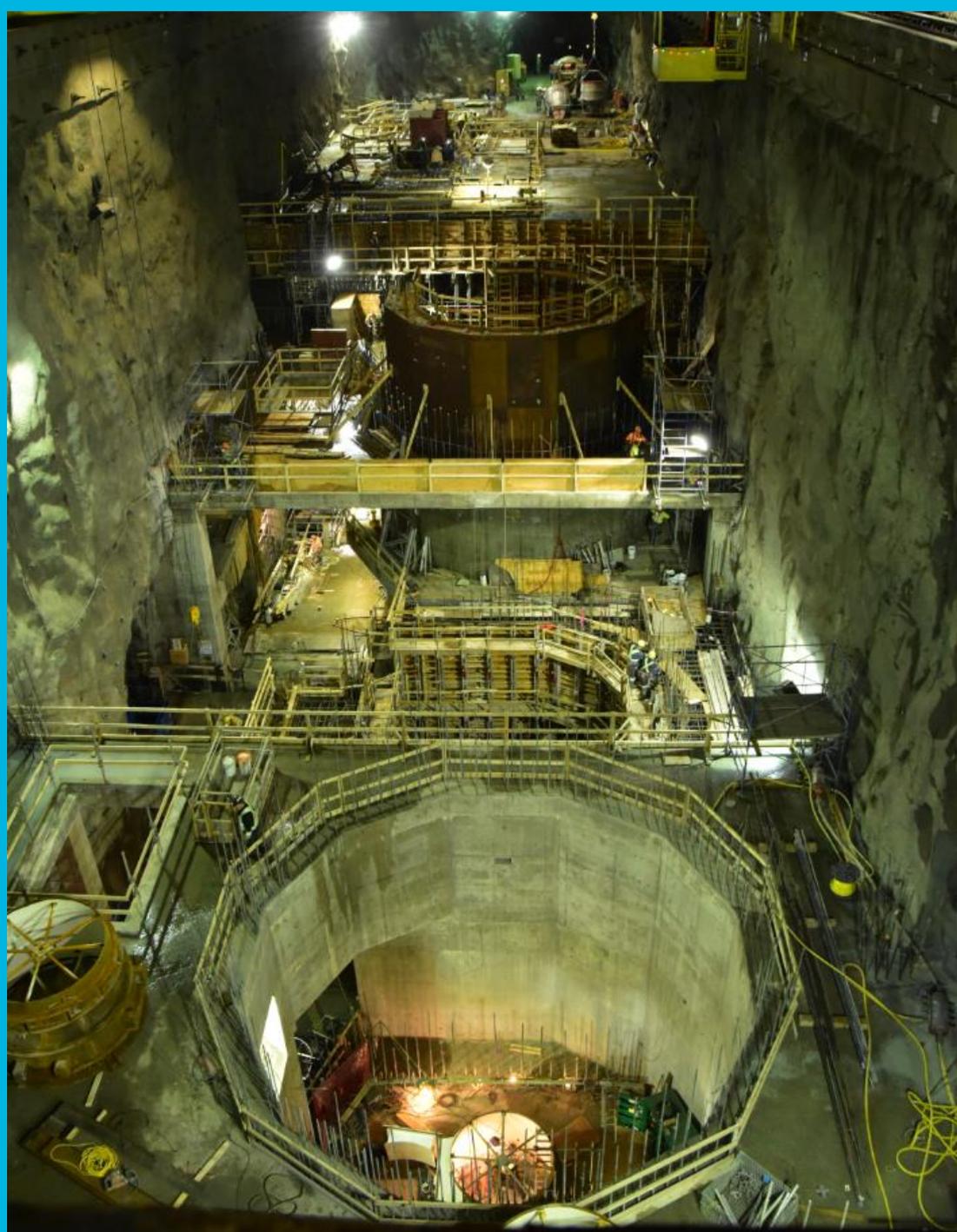
Project Status

- Upstream of the dam, the maintenance gate guides were lowered into place at the new water intake;
- Downstream of the existing dam, rock removal continues under the dam, with lattice girders and shotcrete applied. This is on track to be complete in February;
- Power tunnel reaches 1 kilometre mark! It is now nearly two-thirds complete;
- GE, the turbine/generator supplier, has mobilized in the powerhouse to start work on installation for components of the three turbines/generators, beginning with Unit #3;
- Gate gallery tunnel (downstream of the powerhouse) has been completed, with installation of rock support now underway; and
- The 520 metre tailrace tunnel, which is excavated in two sections (a 'top heading' and 'bench') is progressing with roughly 65 per cent of the excavation now complete.



Project Schedule

- February: Excavation under the existing John Hart dam complete;
- February/March: Placement of rock pad at tailrace;
- March: Removal of cofferdam at intake begins;
- April: Complete tailrace tunnel;
- May: Complete construction of elbow entering the power tunnel on downstream side of the dam; and
- August: Power tunnel excavation is complete, marking end of underground excavation for the project.



Construction Pictures – John Hart Dam



Construction Pictures – Downstream Work Area Below John Hart Dam



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Tunnelling under the dam.

Construction Pictures – Downstream Work Area Below John Hart Dam



Construction Pictures – Power Tunnel



 **Stephen Watson BCH**
@Puntledge

We hit the 1,000 m mark for the 1,575 m long power tunnel that will bring water to the new John Hart powerhouse. 🙌
[@SNCLavalin](#) [@AeconGroup](#)



RETWEETS 7 LIKES 12



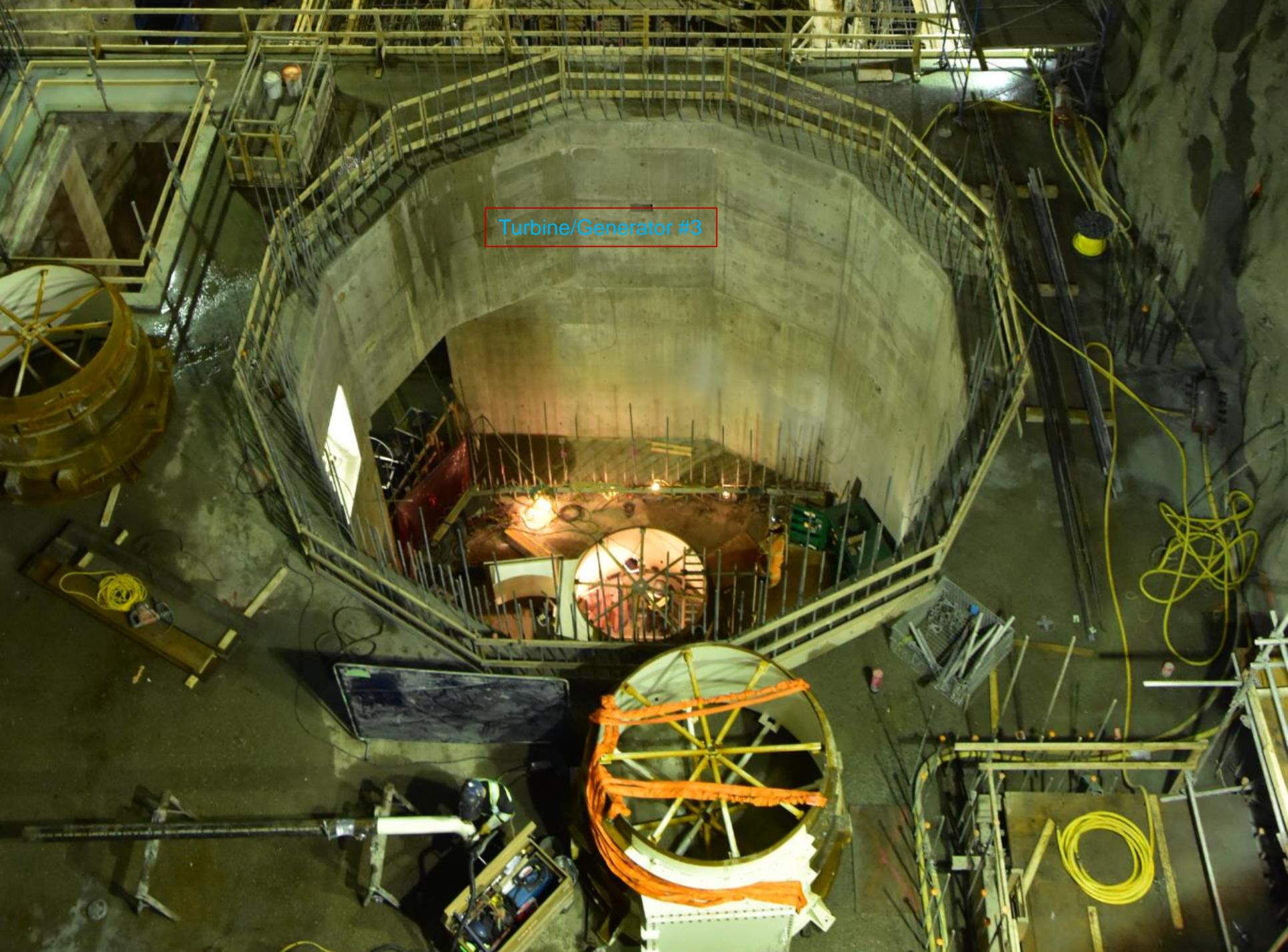
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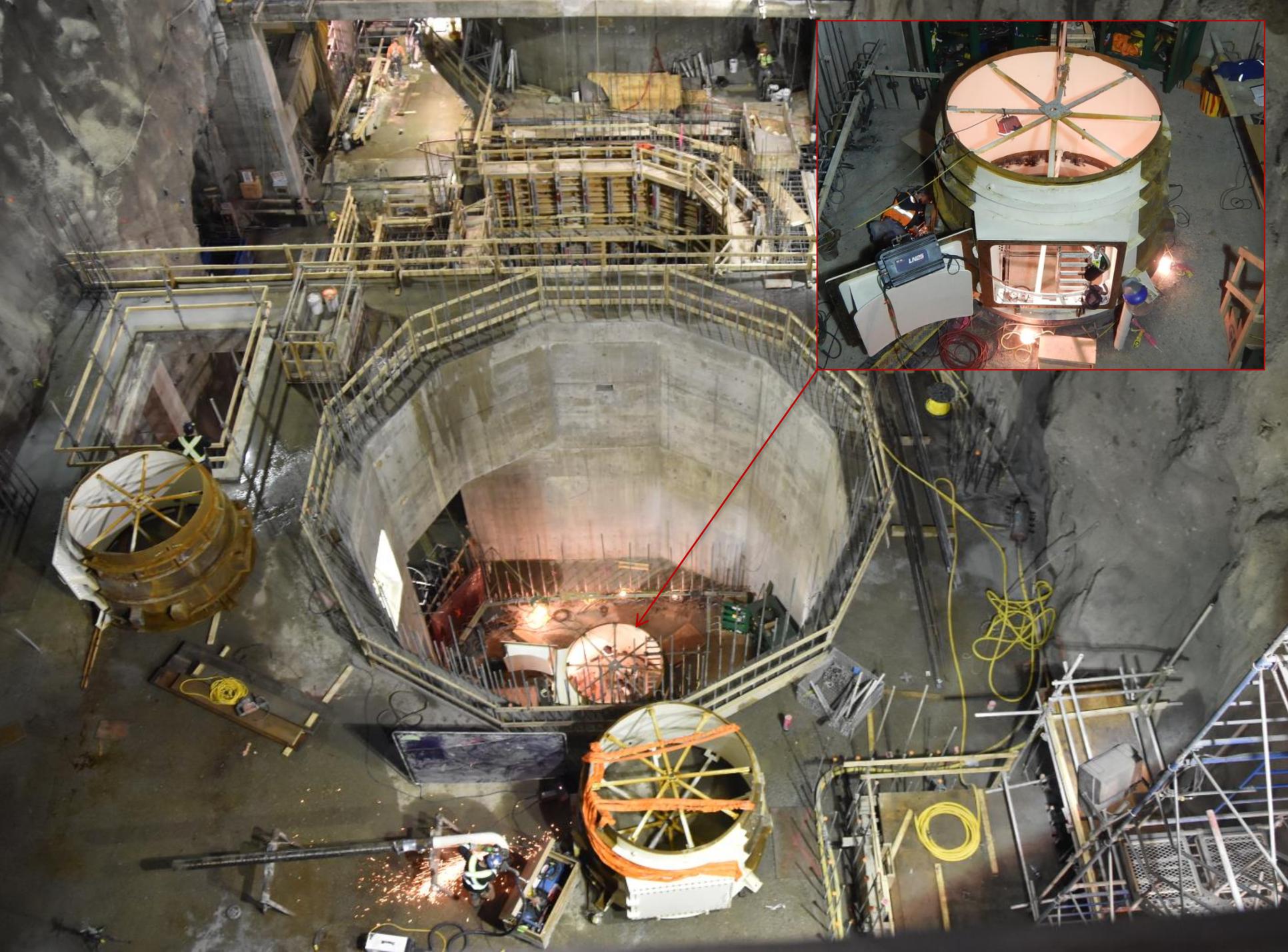


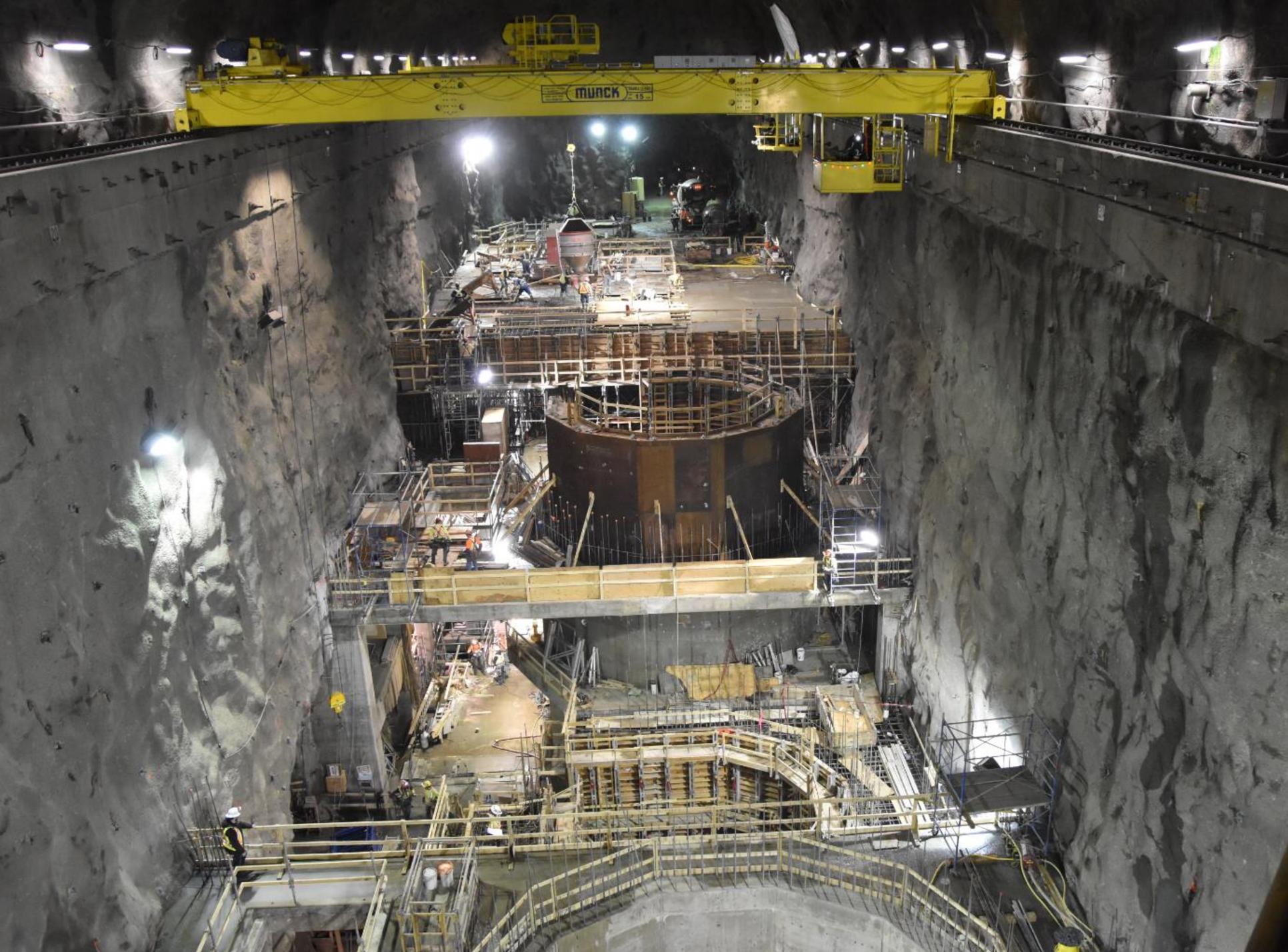
Construction Pictures – Powerhouse Cavern



Turbine/Generator #3





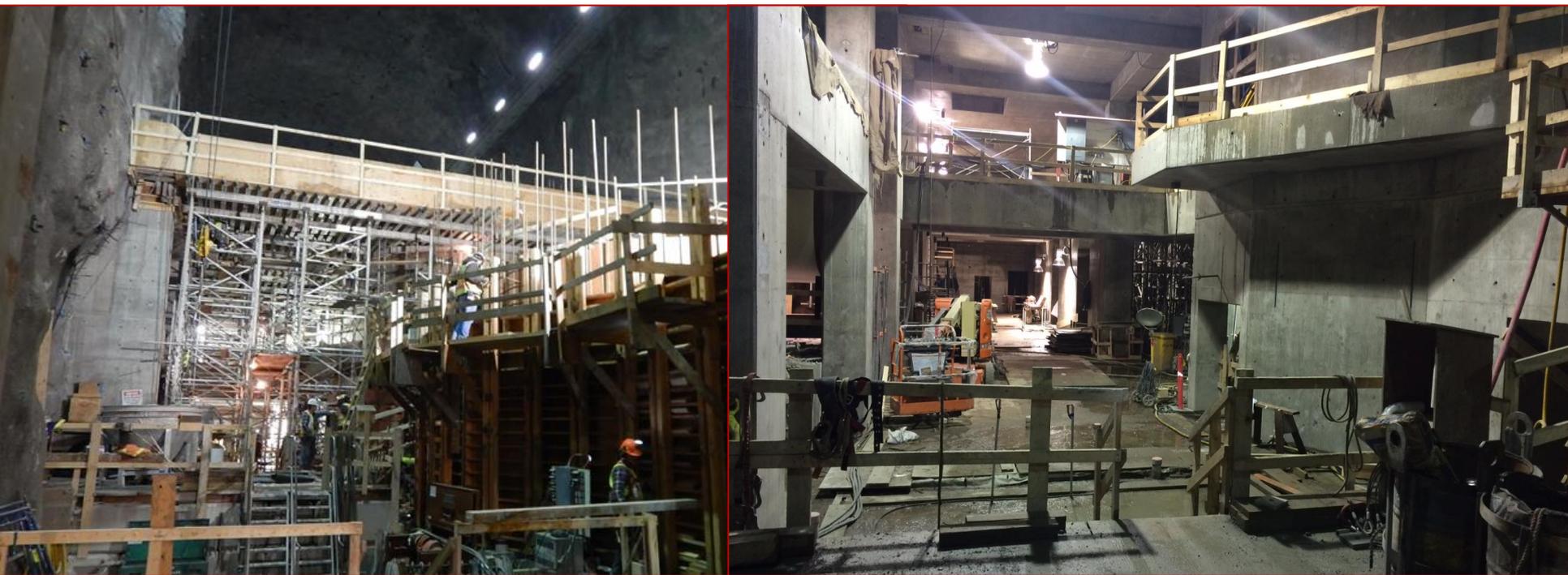




Turbine/Generator #1

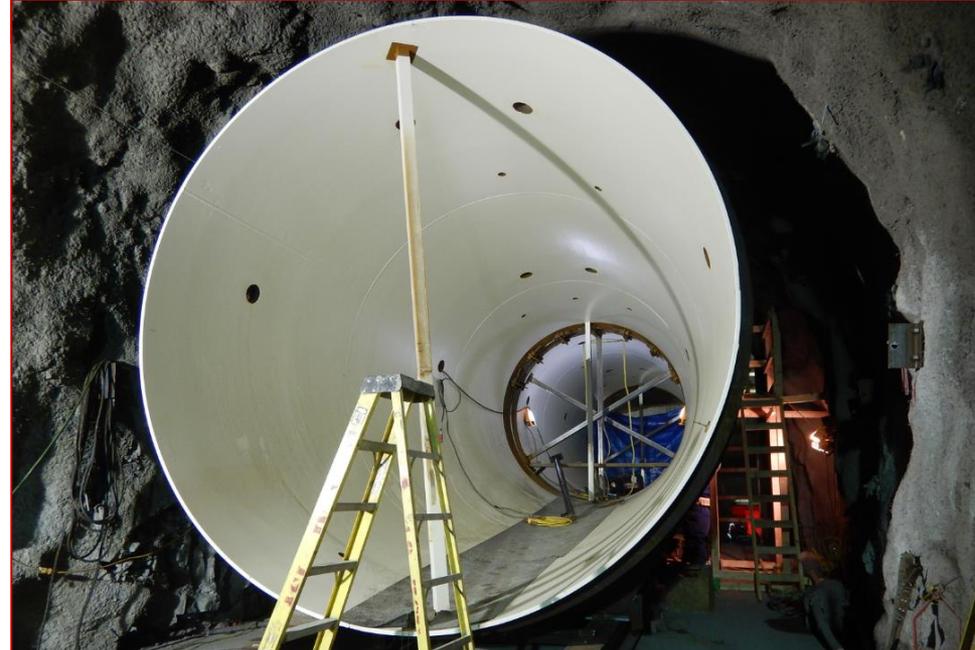


Construction Pictures – Powerhouse Cavern



On left, view of the water bypass facility, and on right, view under the Turbine/Generator #3 area.

Construction Pictures – Powerhouse Inlet



An inlet pipe liner feeding through one of the three inlet bays to the water bypass facility and bypass valves. The space between the inlet pipe and the rock tunnel will eventually be filled in with concrete.

Construction Pictures – Tailrace Outlet



View above of the tailrace outlet works area, and on right, view of the rock plug between the excavated tailrace outlet and the Campbell River. A rock pad will be installed in the river in February to assist with the drilling process to remove the rock plug. More information on the rock placement in the river is on next page.

Rock Pad Placement At Tailrace Area

A temporary work pad will be placed (shown in yellow below left) upstream of the existing John Hart Generating Station and beside the under-construction tailrace outlet. Rock will be placed in the river to help in the removal process of the rock plug:

- The placed rock is clean rock from on-site blasting, and will be placed by excavator into the river. It may take a few weeks to complete the work.
- To ensure the rock doesn't move from potential high water flow events for flood risk management operations, the rock will be cable-chained together, with holes drilled through and cables running through them to create a single mass (see example below right).
- Extensive planning and environmental review has been undertaken to ensure the work is completed without impacts to the river. All work will be overseen by environmental monitors. The work pad will allow for drilling equipment to be placed on the pad to drill into the rock plug area. There will ultimately be one blast to remove the rock plug at the end of 2017. With all the rock eventually removed, water will then be able to flow from the underground tunnel out into the river when the powerhouse is commissioned in 2018.



Environment

Recently, Hatfield Consultants, the environmental management side of the project team, submitted their 2016 Annual Report, featuring highlights from the past year. A few are included below:

- Crews like the environmental helmet stickers. The desire to earn stickers has resulted in 21 red-legged frogs, 23 Pacific chorus frogs, and several rough-skinned newts and long-toed salamanders being saved this past year.
- The ability of crews to use an equipment wash bay to remove excess grease, mud, etc. means the entire project site is much cleaner.
- The decision to move the intake water treatment plant discharge location downstream eliminated a site where turbid water could flush into ground water and enter the Campbell River through bedrock.
- Three tree swallow nests (two in the tailrace crane, one in the intake tipping frame) were protected until the chicks were born and fledged the nests.



John Hart Project Interpretive Centre

We had 17,550 visitors in 2016.
These were the six busiest months:

- May – 1,290
- June – 2,148
- July – 3,683
- August – 3,548
- September – 1,841
- November – 1,132.



Stephen Watson BCH
@Puntledge

In 2016, we had 17,550 visitors thru the John Hart project interpretive centre. Another great year & look forward to 2017!
#CampbellRiver

RETWEETS: 2
LIKES: 5

8:52 AM - 3 Jan 2017

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@Puntledge

Our free admission interpretive centre shows the past, present & future of the John Hart hydro facility. Proud to partner with @CRMuseum1

8:39 AM - 23 Jan 2017



People Profile – Stacy Conacher

About Stacy

Background:

A millwright by trade, Stacy comes to the John Hart project with 21 years' experience in the Mechanical construction industry. While he's worked in many large industrial sites throughout western Canada (including Kootenay Canal and Arrow Lakes generating station upgrades, Brilliant expansion and Revelstoke unit 5 construction), hydro dam works are his preferred projects.

Home:

Stacy was born and raised in Trail and is living in Campbell River for the duration of the project.

Hobbies:

An easy answer for Stacy – he likes to fish! He's also an avid hunter, dirt biker and has been flying giant scale RC planes since he was a kid.

Project Responsibility:

As Mechanical Superintendent, Stacy oversees and coordinates mechanical installations on site including crane rails, powerhouse cranes, draft tube elbows and intake, tailrace and draft tube gate systems. He works closely with safety, engineering, quality control and subcontractors to get the work completed right the first time.

“It's nice to be part of a great team - I can't say enough about the professional, driven people that work here and the amazing things we accomplish together.”



Construction – Point Of Interest

Each month, BC Hydro and InPower BC will provide a construction fact, occurrence, or situation.

Water Matters

Protecting water quality is of the utmost importance to the project team – which means that water monitoring is the most extensive source of environmental data collected and analyzed on the project. With project work taking place in the reservoir and runoff/ treated water released into the Campbell River, a vast amount of data is continually collected to inform the on-site team, as well as regulators and monitors.

- Water quality data are collected every 15 minutes from six stations: three in the Campbell River and three in the John Hart reservoir. Collectively they provide turbidity, pH, and temperature data.
- Monitoring stations in the reservoir are located within 100 metres of the two City drinking water intakes and at the reservoir inlet. At no point has project work exceeded water quality parameters within 100 metres of the City's drinking water intakes.
- Extra monitoring is conducted following specific events: e.g., blasting near water or during high rain events. No water quality concerns have been identified.
- All results are regularly reported to BC Hydro and external environmental monitors for regular review.