

John Hart Generating Station Replacement Project

October 2018

Community Construction Update Report #64

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Project Status

General update:

- Oct 1: Old John Hart Generator #4 was permanently shut down;
- Oct 11: Old John Hart Generator #2 and #6 were shut down – powerhouse operations shut down and operations transferred to the new facility. End of an era;
- Generator #1 officially commissioned October 25;
- Testing of new public warning (siren) warning system along the river;
- Significant demobilization on site with trailers being emptied and removed;
- Powerhouse, service bay and mezzanine electrical work including lighting, receptacles, terminations and groundings;
- Fire suppression system installation ongoing;
- Initial clean-up work in old generating station; begins; and
- Preparation for removal of the penstocks.

On October 11, BC Hydro permanently shut down the last two generators in the old generating station. An end of an era.



Project Schedule

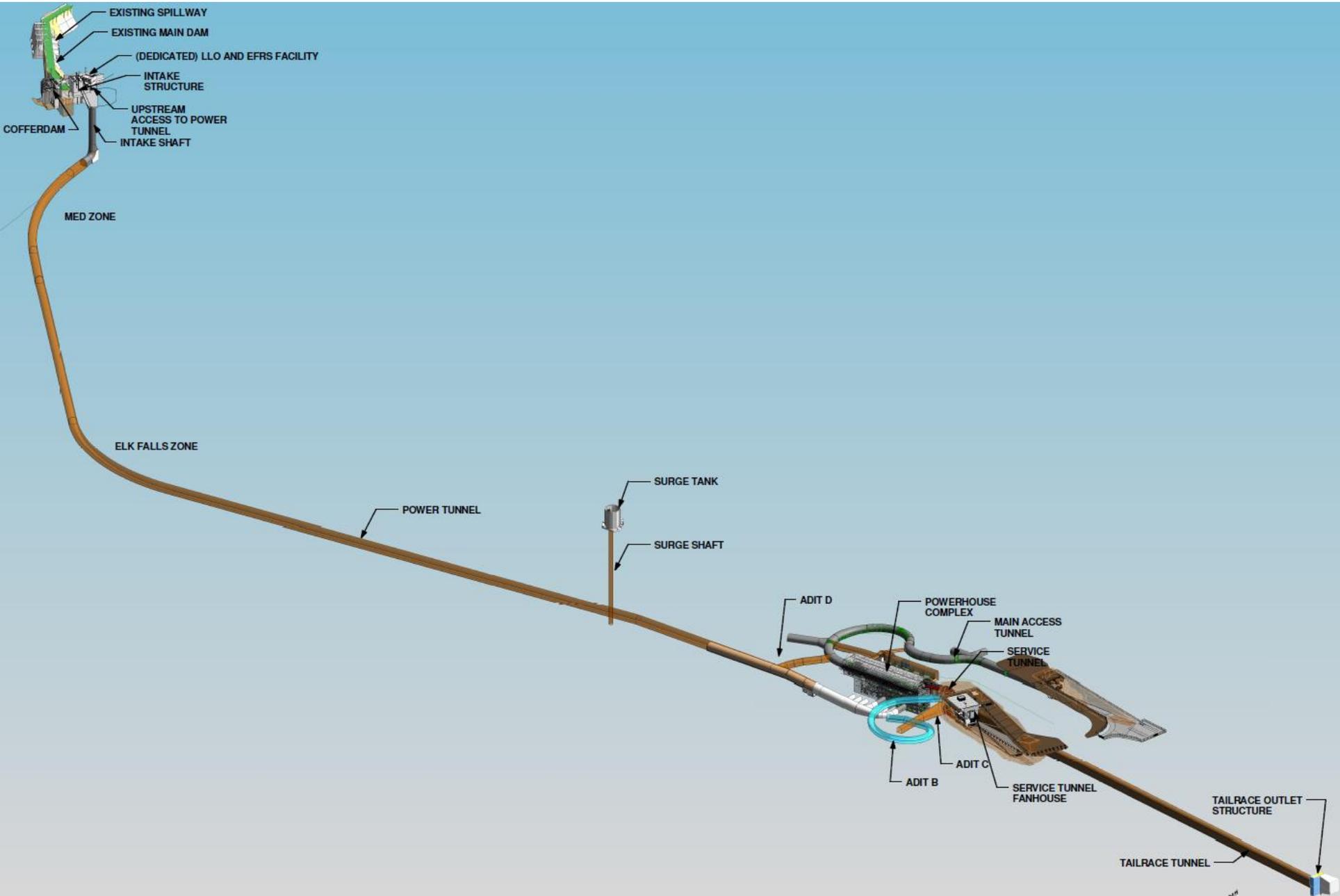
- Ongoing: Training;
- Last generator to be officially commissioned in early November;
- Water bypass facility to be fully automated (currently operating in manual mode) in early November;
- Nov: Finishing touches on powerhouse completed;
- Nov – Dec: Demobilization of construction crews and equipment;
- Nov – Feb 2019: Woodstave penstock removal;
- Feb/March 2019: Removal of old surge towers begins; and
- March/April: Turbines and generators from old powerhouse removed and facility is deconstructed.

The final construction report, for November-December, will be issued on December 19. There will then be some periodic John Hart decommissioning reports issued in 2019.

Good view of the surge towers, substation and old generating station. Work to remove the three penstocks, or pipes, and two of the three surge towers, along with the old powerhouse to be removed down to the ground level, will begin next month through next summer.



John Hart Project Underground Site Map



John Hart dam and the new water intake works.

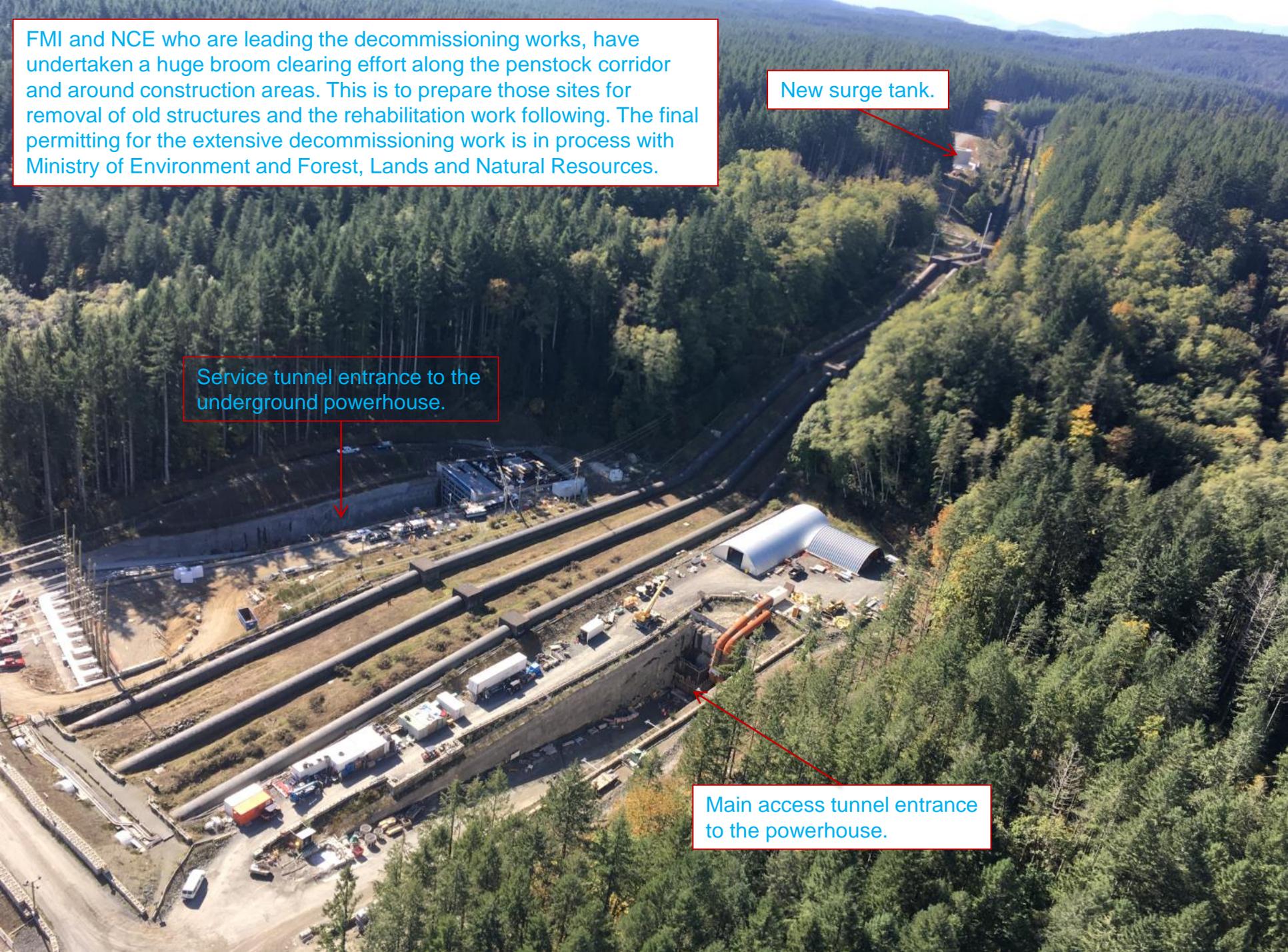


FMI and NCE who are leading the decommissioning works, have undertaken a huge broom clearing effort along the penstock corridor and around construction areas. This is to prepare those sites for removal of old structures and the rehabilitation work following. The final permitting for the extensive decommissioning work is in process with Ministry of Environment and Forest, Lands and Natural Resources.

New surge tank.

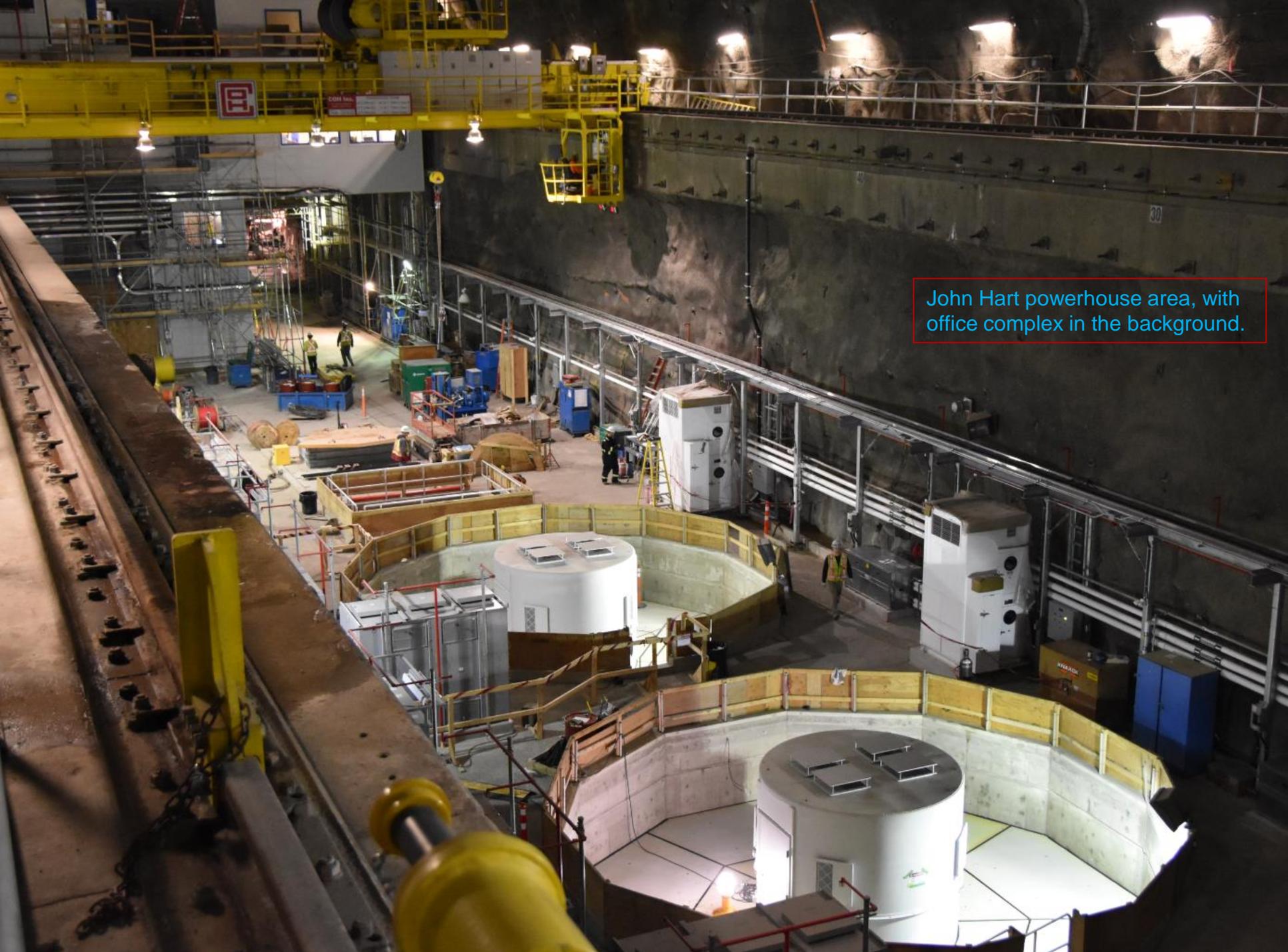
Service tunnel entrance to the underground powerhouse.

Main access tunnel entrance to the powerhouse.



On a foggy day, the service tunnel entrance.





John Hart powerhouse area, with office complex in the background.

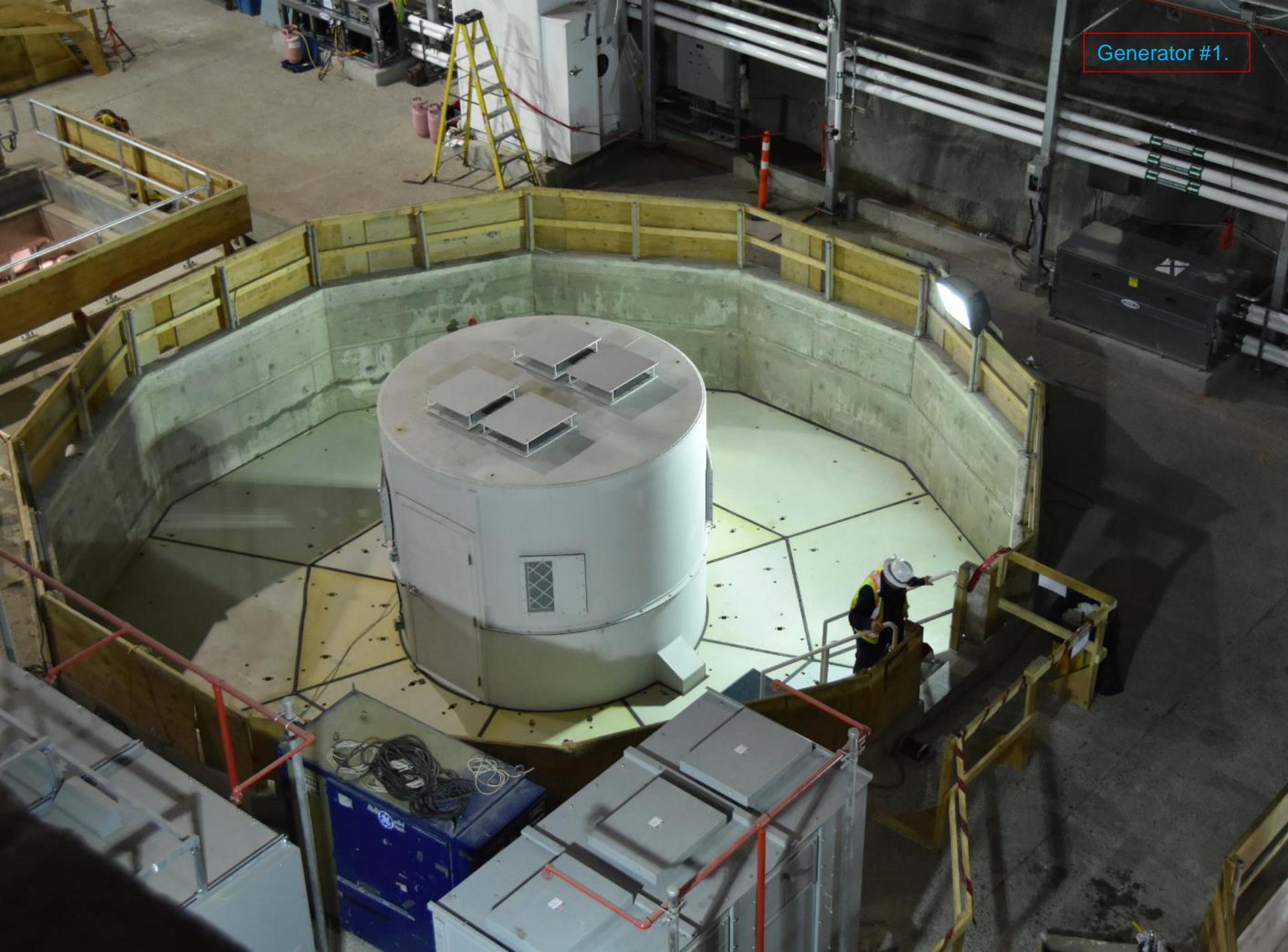
Powerhouse view from the top of the office complex.



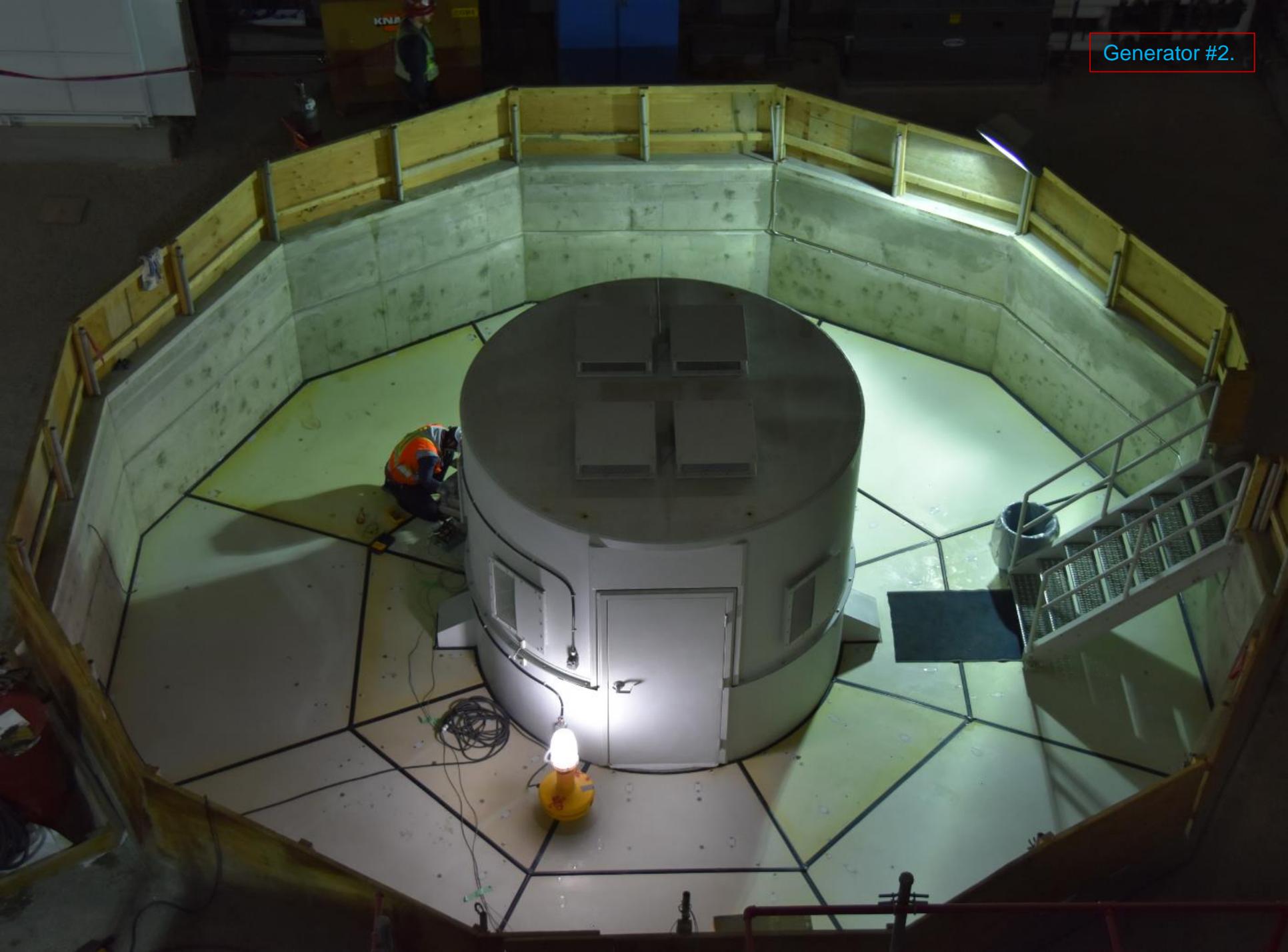
OH I.C. POWERHOUSE CRANE
FORNADSA 10 M.T. CMAA Class B
FORNADSA 15 M.T. CMAA Class C
FORNADSA 20 M.T. CMAA Class C



Generator #1.

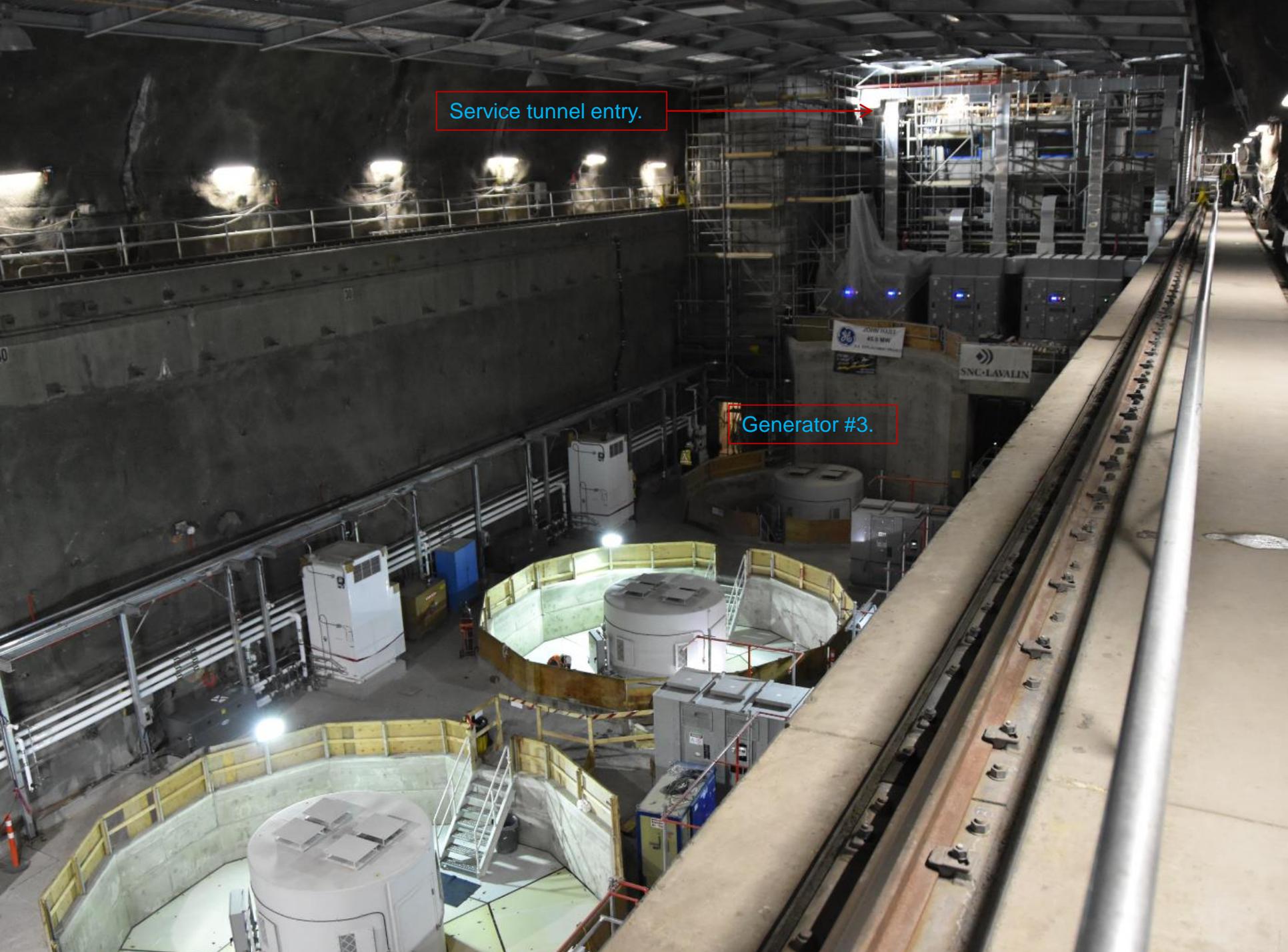


Generator #2.



Service tunnel entry.

Generator #3.



View from the generator floor of the powerhouse.





View from the mezzanine area of the powerhouse.



Siren system tests begin: In late October the new public warning system for the John Hart hydroelectric facility went into early testing. The plan is to replace the old 360 degree air raid siren sound with a whooping sound that is more directional, with the sirens facing upstream or downstream of the canyon or river. The first siren tests occurred at the dam and near Elk Falls.

The new sound may create some confusion as to what the sound means, so the project communicated out to the Campbell River community.

The siren tests down by the powerhouse and by the old pulp and paper mill water intake below Second Island may take place at the end of November. The plan is to have the new system in place by the end of the year. Until then, the old system will remain in place to ensure public safety notification of sudden water flow changes.

The new siren system will be more reliable and up to current public safety guidelines. Water flow changes down Elk Falls Canyon or below the generating station can take place at any time, and it's imperative that we have a good siren system in place to properly warn people downstream."

The work is part of the final components of the John Hart project.

Photo: New siren placed near Elk Falls.

Old Generator 4 Permanently Shut Down

www.campbellrivermirror.com

Campbell River Mirror

Friday, October 5, 2018 A7

Fourth John Hart generator shut down

Another old John Hart generator was shut down on Monday and the occasion was used to celebrate the relationship between BC Hydro and local First Nations.

BC Hydro shut down a fourth generator as it continues to transition from its old facility on the Campbell River to the new underground facility. This time First Nations had the opportunity to pull the switch.

“We appreciated the request for us to shut down one of the six old generators,” said We Wai Kai Chief, Brian Assu. “A rare opportunity. It’s an example of the close relationship we’ve developed over time, since 2007, with BC Hydro. It is an ongoing relationship process, and Monday’s event was very meaningful to us.”

“To be able to pull the lever to signal the process to permanently shut down the old generator was something I will always remember,” said Wei Wai Kum Chief, Chris Roberts. “Our people were not consulted when the first facility was built in the 1940s. For the new and improved underground

John Hart facility, we were consulted. Today is a symbolic day in moving forward from the old way to the appropriate new way – the proper way forward where we all benefit.”

The remaining two generators will be permanently shut down in mid-October. After that, all water flows will be passed through the new tunnel and underground powerhouse. BC Hydro also provides a minimum water flow for fish habitat down Elk Falls Canyon.

“It was important for us to reach out to the community to be a part of these milestone shutdown events,” says BC Hydro’s Stephen Watson. “It’s a big deal to see and be a part of, as this facility has been a big part of Campbell River for about 71 years.”

Previously Georgean Price, wife of the first plant manager at John Hart, Art Price, shut down the first unit in October 2017. This year, Campbell River Mayor and Council and then members of BC Hydro’s community liaison committee each shut down a generator.



Chief Chris Roberts, left, and Chief Brian Assu, standing within a safe zone, pull the lever to signal the permanent shutdown of Generator 4 within the old John Hart generating station. BC Hydro photo



Last two generators at John Hart shut down

MIKE CHOUINARD
Campbell River Mirror

The old powerhouse at the new John Hart Generating Station site is now history. BC Hydro shut down the last two of the six generators at the powerhouse for good during a ceremony Thursday morning.

“The John Hart Generating Station Replacement Project was built, or rather initiated, in 2007,” said Stephen Watson, BC Hydro stakeholder engagement advisor. “Here we are, shutting down the old powerhouse.”

For the event, a Campbell River employee, Greg Remfert, was chosen through a lottery to shut down one of the generators. With other company representatives standing by his side, he pulled the switch at about 10:15 a.m.

He admits the honour came as a surprise.

“I didn’t even know it was happening,” he said. “They put everyone’s name in a hat.”

He has spent roughly 26 years there.

“I’ve seen a lot of changes,” he said.

BC Hydro President and COO Chris O’Riley was scheduled to shut down the final unit, but could not fly in for the ceremony because

of fog.

“I know Chris wanted to be here,” Watson said. “His first job at BC Hydro was at John Hart, and he’s been very intricately involved with the facility throughout his career.”

Other BC Hydro representatives stepped in and turned off the generator at about 10:45 a.m.

Neil Dermody, BC Hydro field manager for the area, credited the work of many, from BC Hydro executive to management to staff in getting the John Hart project to this point.

“I’ve likely missed a few, but suffice it to say it’s been an entire team effort,” he said.

BC Hydro staff and Power Pioneers, or retired BC Hydro staff, were on hand for the moment when the generators came to a stop. The utility says the idea behind Thursday’s ceremony was to celebrate the old facility and what it had meant for the Campbell River area since the 1940s.

The closures are part of the massive John Hart Generating Station Replacement Project. Construction work started on the new facilities in July 2014. By early summer 2017, all of the underground rock had been removed.

The commissioning stage began



BC Hydro representatives shut down Generator 2, the last of the old generators, shortly before 11 a.m. Photo by Mike Chouinard
Chouinard/Campbell River Mirror

with new water release valves on the downstream side of the dam and the a new water bypass facility within the underground powerhouse in early May.

For the new facility, there will be three new generators, the first of which was commissioned in July on schedule, while the remaining two start operating this week to take over full hydroelectric operations on Thursday.

By 11 a.m. the hum at the old site had been silenced, but the old generators may need to be used as a backup over the next couple of weeks, though are otherwise out of

service. Decommission work at the site should be done by the end of next summer.

“By basically the end of summer next year, the three penstocks will be removed, two to three search towers will be removed down to the ground level. One will stay ... but it’s not part of the new system, and then this powerhouse will be removed down to the ground level,” said Watson, “so it’ll be a big change.”

Over the past year, BC Hydro has held four ceremonies to close other generators at the powerhouse. Last October, Georgan Price, wife of

first John Hart plant manager Art Price, and her family took part in shutting down Generator 5. In March, Campbell River’s mayor and council had the opportunity to close down Generator 3. Two months later, members of BC Hydro’s Campbell River Community Liaison Committee shut down Generator 1. Earlier this month, We Wai Kai Nation and Wei Wai Kum Nation were picked to turn off Generator 4.

“These were really meaningful shutdown events for these community members and BC Hydro,” Watson said.

Generator 6 and 2 operating at 5 MW prior to being shutdown on October 11.



EXTREME DANGER
Keep Out
Access Beyond This Point
May Result in Drowning
Siren Indicates Rapid Changes
In Water Levels And Flow



View of the celebration event. Pic courtesy of Mary Ruth Harris at Shaw TV.

BC Hydro staff and Power Pioneers were on hand to recall the 71 years of nostalgia of the facility.



BC Hydro's Stephen Watson, involved in communications with the Campbell River community for almost 19 years, reflects on the John Hart facility and the staff that kept it operating all these years.



Senior Field Manager, Neal Dermody, discusses the passion and commitment of the staff at John Hart, and staff from around the province, that were able to keep the facility running until today.



Shutting Down Generator 6

Greg Remfert, a staff member in Campbell River, was drawn by lottery to pull the lever to signal the shutdown of Generator 6.





BC Hydro's Regional Manager, Fawn Hollard, pulls the level to Generator 2 as staff and Power Pioneers look on. This was when the powerhouse sounds went quiet and the vibrations stopped. A surreal moment.

JHT
G-2

BC Hydro

Heavy Duty Safety Switch
Intermittent de-energized indicator
SBA 800Vdc/V - 500Vdc/V
Intermittent Indicator / Phasorlock variable on top

ON
OFF

⚠ DANGER
⚠ DANGER

John Hart

BC Hydro

BC Hydro

NEAL DERRICK



EXTREME DANGER
Keep Out!
Access Beyond This Point
May Result In Drowning
Siren Indicates Rapid Changes
In Water Levels And Flow

No more water outflow out of the old tailrace. Water flows now come out of the tunnel outlet to the top right on the photo.

BC Hydro staff and Power Pioneers gather for a group picture once the generators were shut down.



People Profile – Andy Brown

About Andy

Background:

Andy was born, raised and educated in Australia and shortly after graduating from the University of Adelaide, took off on a round-the-world excursion. As his trip neared its end in Edmonton in 1974, he met his wife and laid down roots. His two sons still live in Edmonton. Now, he calls Courtenay home, although he still considers himself an Aussie at heart.

Home:

With the bulk of his career with Alberta Transportation, Andy managed the construction and maintenance of rural highways before moving into the private sector in 2006 in Calgary, focusing on two of the Stoney Trail (Calgary ring road) P3 projects. Working with SNC-Lavalin on one of those projects led to the John Hart project opportunity.

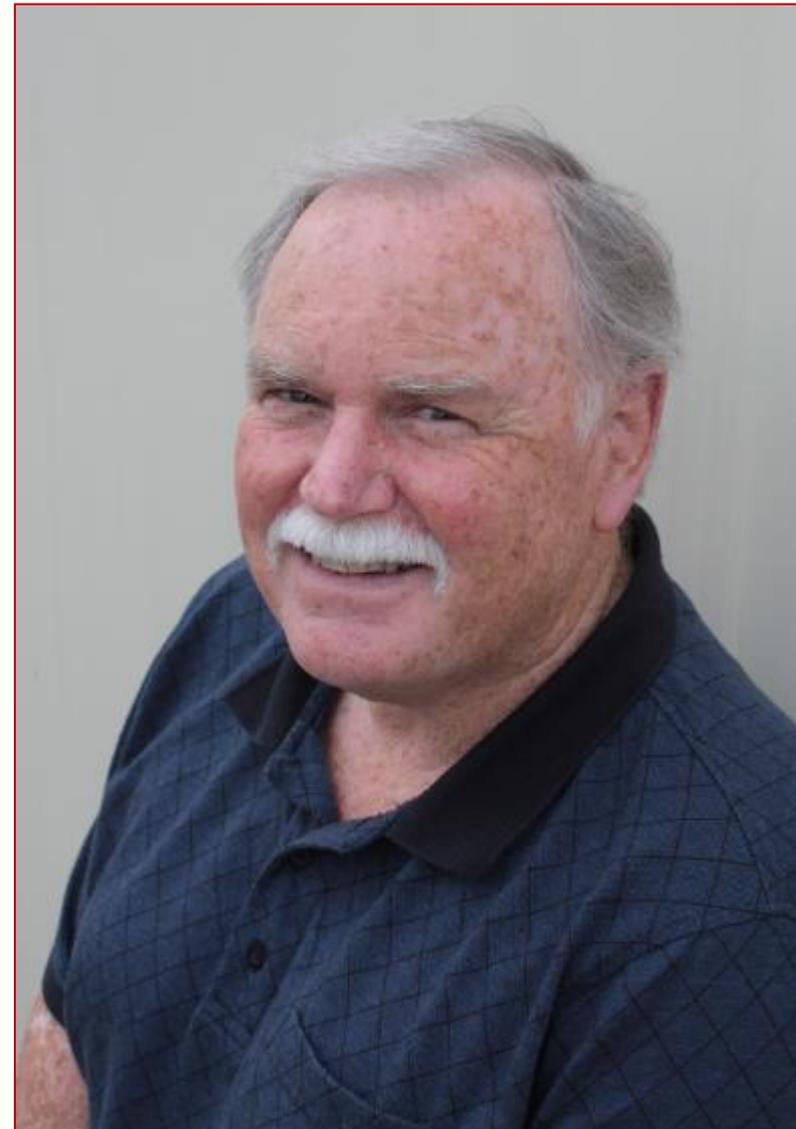
Hobbies:

When he's not working, Andy's main interest is travelling to off-the-beaten-path locations, from one coast of Canada to the other, and other stops like Iceland and Zambia. His aim in retirement is to explore the outback areas of his home country Australia. Andy is also part of the BMW car club of Canada and owns two of them; one practical, the other 'his toy'. Photography has always been an interest, but he's not yet given over to the intricacies of today's cameras in the digital world.

Project Responsibility:

As Technical Director for InPower BC, Andy's role on the John Hart project is to liaise between the project site and InPower/SNC-Lavalin's Vancouver/Montreal offices during the construction phase, observing the work in progress and assisting proactively with any contractual issues that have arisen or could become a concern. Being on-site allows InPower BC to be an active and visible part of the team delivering this very important project.

"I've always worked on big projects aboveground and the chance to work on this project underground was too big for me to let it go. It's been more interesting than I could have imagined."



Construction – Point Of Interest

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

Decommissioning

With the new John Hart facility now operating, the project team is turning it's eyes to the decommissioning and removal of the old infrastructure, including the generating station, penstocks and two of the three surge towers. Pictures on right taken prior to 2011. Below is how it's generally planned to roll out.

October 2018-February 2019:

- Powerhouse cleaned/prepped for demo;
- First of three turbine-generators in the powerhouse dismantled and removed;
- Water intake at the reservoir plugged/decommissioned;
- Woodstave penstock removal begins; and
- Surge Tower 3 comes down/removed.

March-August 2019:

- Final three turbines-generators dismantled and removed;
- Powerhouse taken down;
- Penstock – wood and steel – removal completed;
- Contaminated soils disposed off site at approved facilities; and
- Surge Tower 2 comes down and is removed.

