

John Hart Generating Station Replacement Project

December 2016

Community Construction Update Report #42

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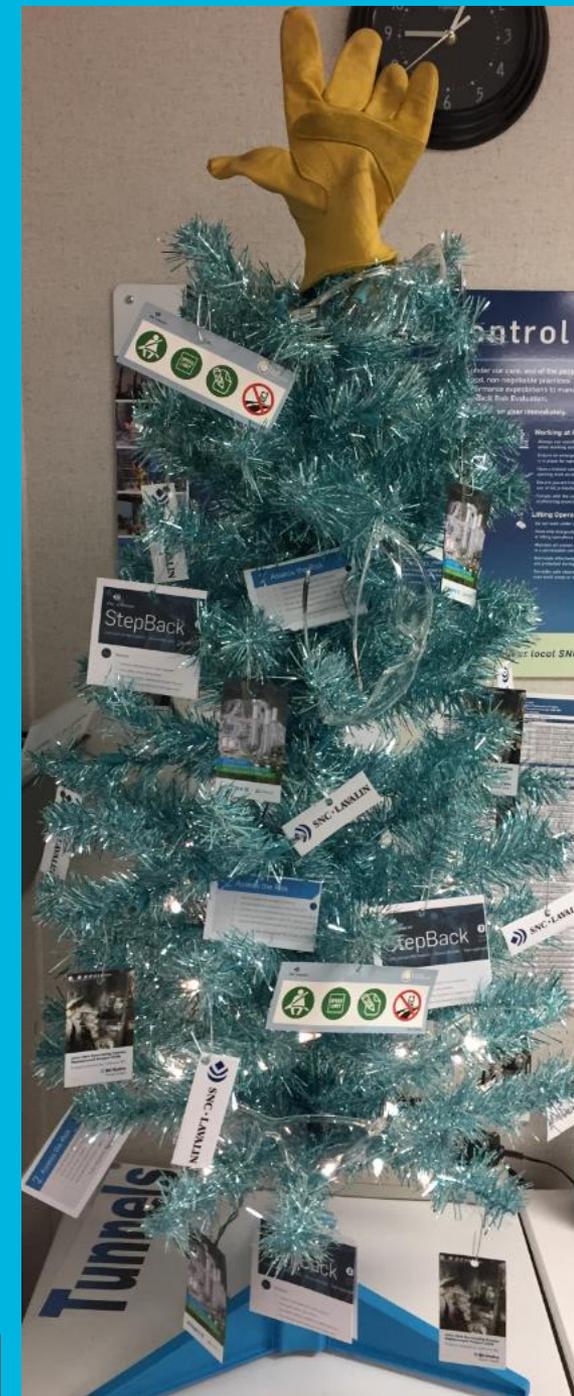
Dec 9 postcard of the snowy scene at the John Hart reservoir and cofferdam area.



Project Status

- Drilling and excavator hoe-ramming is being used for the tunnelling beneath the John Hart dam, to connect the upstream water intake to the downstream power tunnel;
- Excavation of the power tunnel is approaching 60% completion, with over 910 metres of the 1,575 metre tunnel now excavated;
- The permanent crane in the powerhouse is now commissioned, with training of the operators also complete;
- First stage concrete in the powerhouse is 75% complete with over 7,200 cubic metres of concrete placed to date. Second stage concrete is now underway in some areas of the powerhouse;
- The 520 metre tailrace tunnel, which is excavated in two sections (a 'top heading' and 'bench') is progressing with about 55% of the excavation now complete; and
- Gate guides at the tailrace outlet (next to the existing generating station) are being installed with support from manufacturer (Kuenz). Second stage concrete in the area began in mid-December.

SNC-Lavalin's safety Christmas tree.



Project Schedule

- January: Turbine Inlet Valves for powerhouse to be delivered;
- January: Mechanical work to begin at tailrace outlet;
- February: Excavation under the existing John Hart dam complete;
- March: Installation of stop logs at the tailrace outlet;
- April: Complete tailrace tunnel; and
- May: Complete construction of elbow entering power tunnel on downstream side of the dam.



Category 6: REACH OUT - Communication, Marketing and Public Engagement

- Inspiration Port Credit, Mississauga, Ontario
- John Hart Generating Station Replacement, Campbell River, British Columbia
- Leadership in Brownfields Renewal, Federation of Canadian Municipalities, Ottawa, Ontario

We were pleased to be a top-three finalist in the national Brownie Awards acknowledging the significant work undertaken around communications and public engagement for the project. While we didn't win, we are proud of our ongoing community engagement and outreach that goes back to 2007 when the project was initiated. And to be successful in a two-way dialogue, we really appreciate the time and effort people in the community have put in to engage with us on this project.

ASL-JV participated in the Campbell River Big Truck Parade.



Construction Pictures – John Hart Dam Area



Dec 14

Construction Pictures – Water Intake Maintenance Gate Area



The placement of concrete for the water intake maintenance gates on the upstream side of the John Hart dam is complete.

Construction Pictures – Downstream Work Area Below John Hart Dam Area



Rock excavation for the water release valves to go down Elk Falls Canyon.



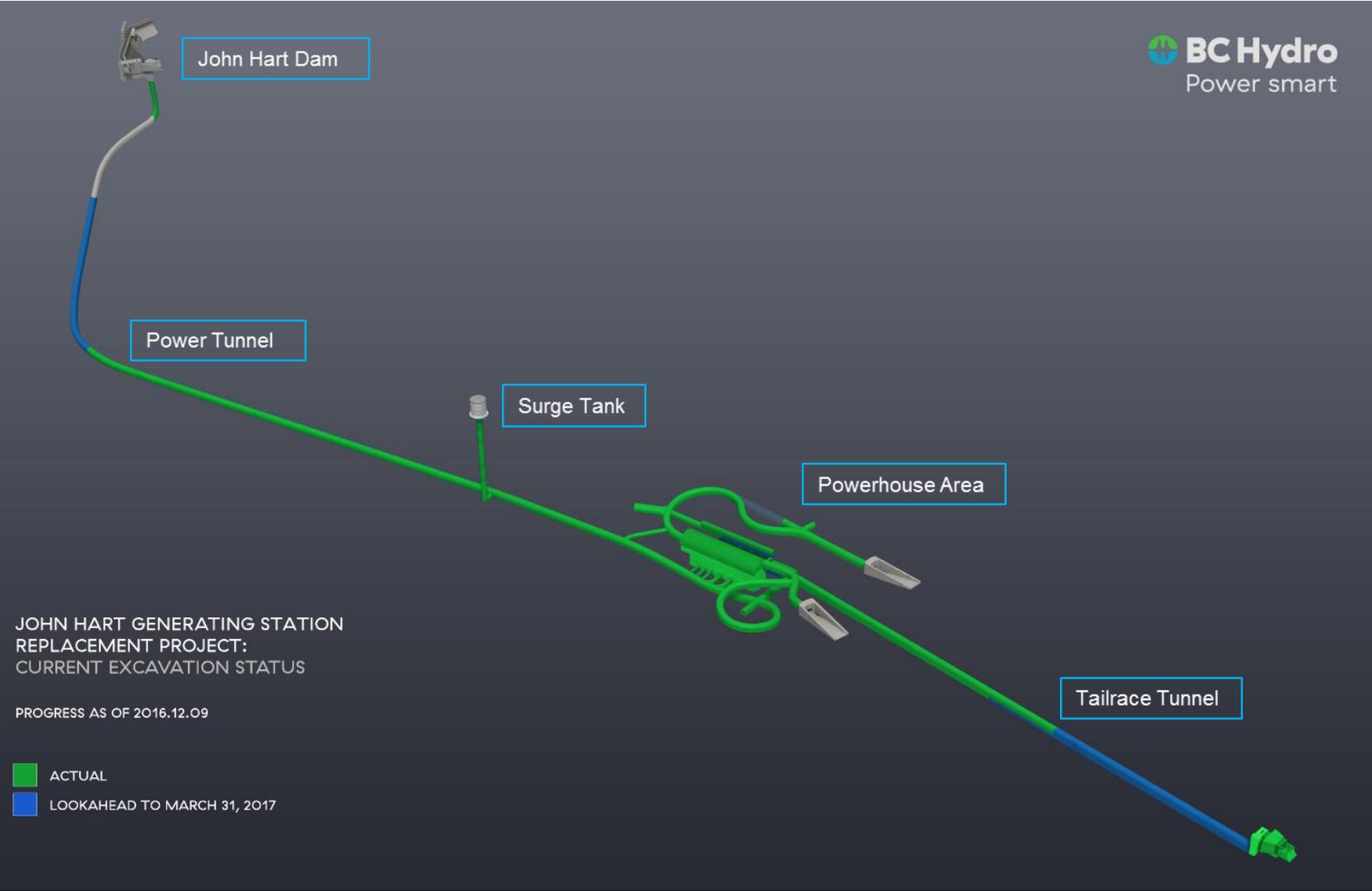
Tunnelling work under the John Hart dam

Construction Pictures – Below John Hart Dam



Dec 18

Current Rock Excavation Status



JOHN HART GENERATING STATION
REPLACEMENT PROJECT:
CURRENT EXCAVATION STATUS

PROGRESS AS OF 2016.12.09

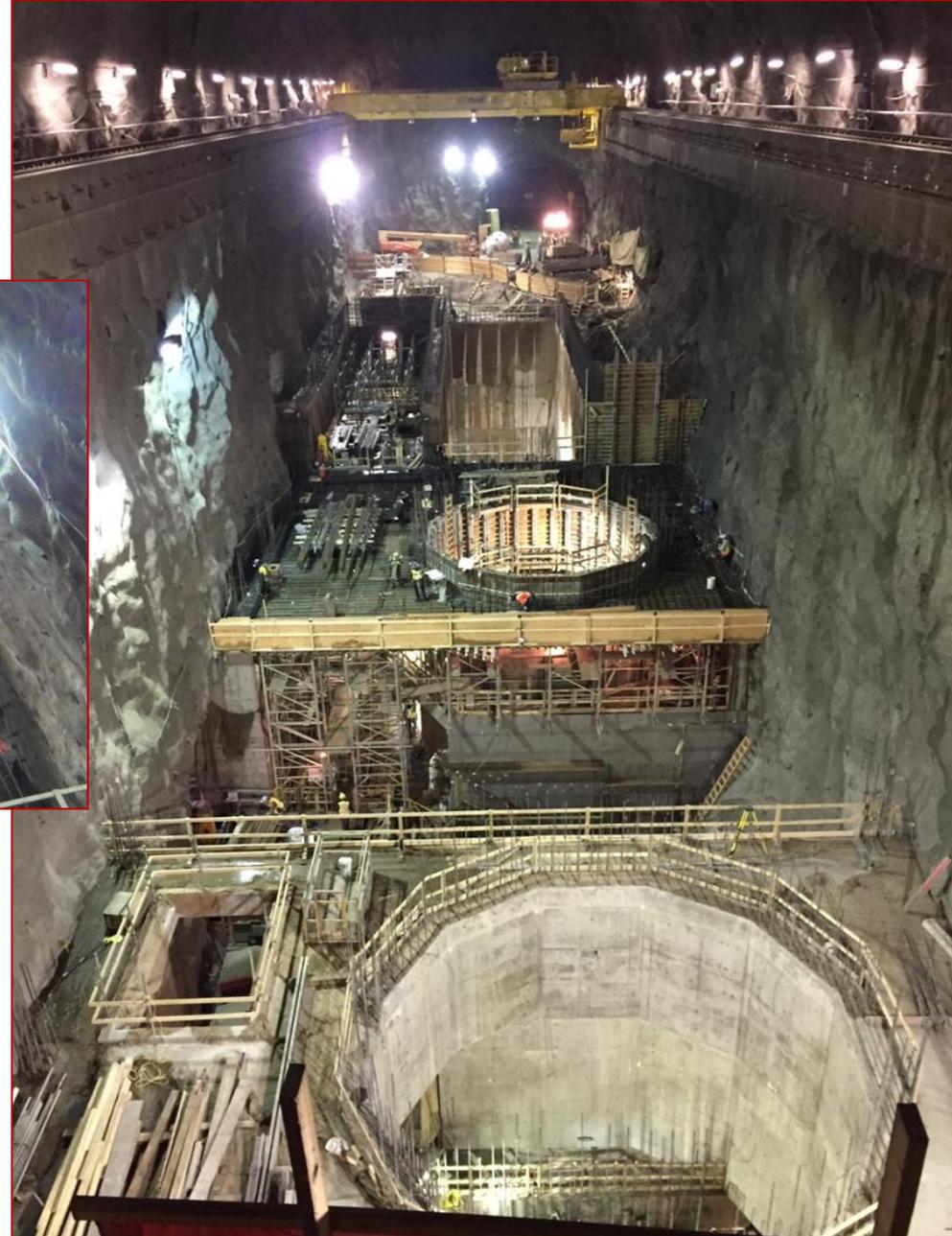
- ACTUAL
- LOOKAHEAD TO MARCH 31, 2017

10 In 2016, significant project milestones have been achieved including the completion of the powerhouse cavern in May and the steady progress of the tunnelling work. In the power tunnel, through controlled drilling and blasting, we can advance just over 5 metres per blast.

Construction Pictures – Powerhouse Cavern

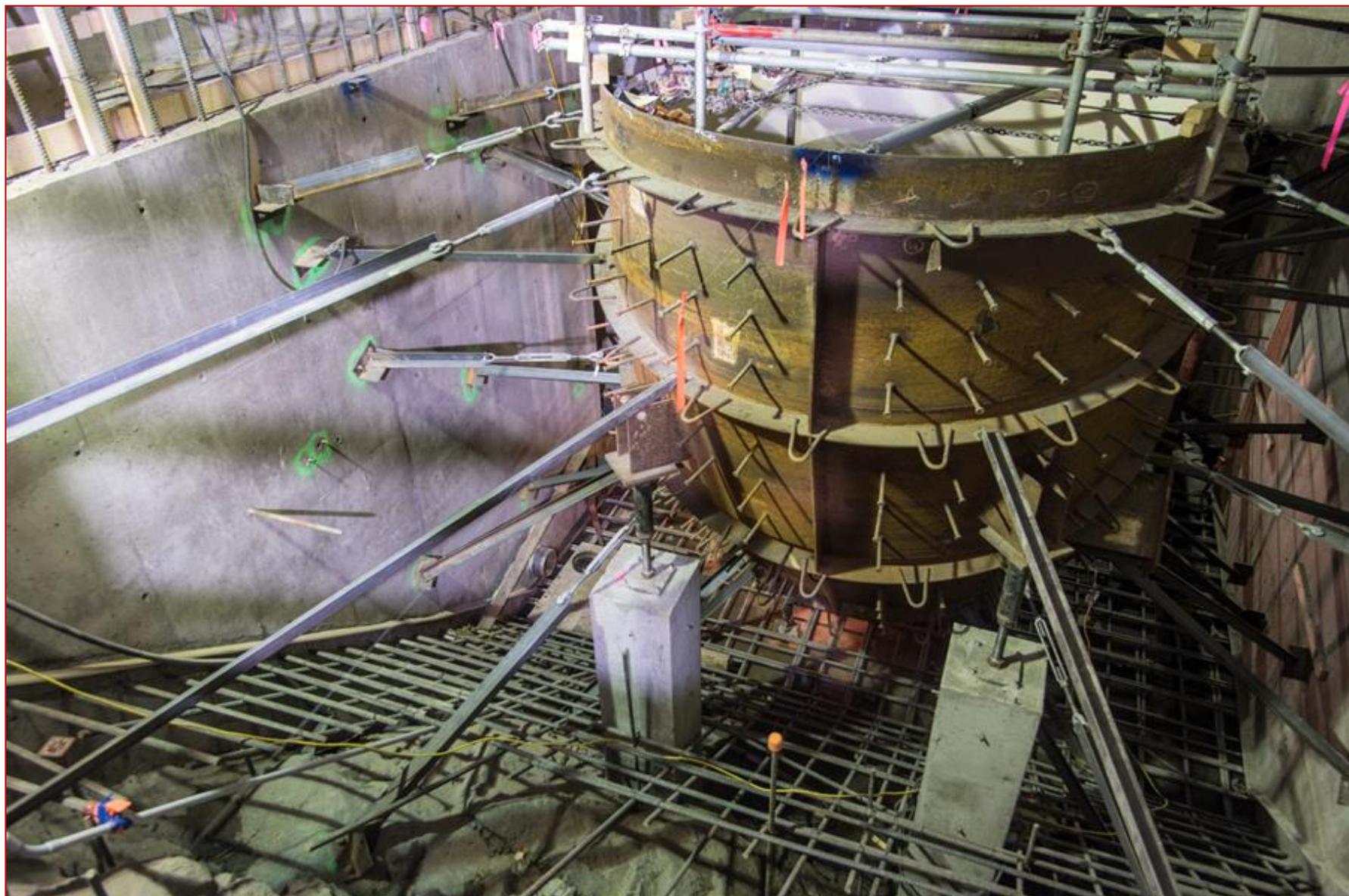


Construction Pictures – Powerhouse Cavern



The powerhouse advancements and the newly commissioned crane.

Construction Pictures – Powerhouse Cavern



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Turbine/Generator #2: the draft tube elbow is prepared to be concreted in place.

Construction Pictures – Powerhouse Cavern



We have come a long way in 2016 with our accomplishments within the powerhouse cavern.

Construction Pictures – Powerhouse Inlet



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View from the power tunnel down the inlet towards Generator #2.

Construction Pictures – Tailrace Outlet



Economic Update

Total number of workers and employees on site (including subcontractors): 360

- Total on-site ASL-JV employees: 182
 - 72.5 per cent local resident;
 - 26.4 per cent BC resident; and
 - 1.1 per cent outside of BC.
- Of the current ASL-JV unionized workforce:
 - Almost 13% of those employees are female; and
 - Almost 14% are self-identified First Nations.
- Total ASL-JV employee and sub-contractor project hours to-date is now about 1.7 million.
- Vendors/suppliers/subcontractors: Project-to-date spends:
 - Vancouver Island about \$40 million; and
 - British Columbia (excluding Vancouver Island) about \$149 million.



Environment

Continued Monitoring of Slope slide: The project team, led by the environment team's recommendations have undertaken the immediate mitigation work required following a slide on BC Hydro property caused by saturation resulting from heavy rains and a broken water treatment plant line. Hazard trees left by the slide have been removed and fencing has been installed to protect hikers in the area. A survey is complete, and straw has been placed on the slope to prevent runoff. Long-term, the team is looking to re-planting plans for the spring of 2017.

Preparing for the holidays: For crews on site, closing up for the holidays isn't as simple as turning off the lights and locking the doors. To prepare the site for a period of reduced activity, some maintenance has to be done – including clearing road drainage cattleguards and swales, ensuring oil spill trays are below parked vehicles, to maintenance checks of the wastewater treatment plants. Designated staff will monitor site throughout the holidays, ensuring that everything continues to work the way it should.

2016 was another busy year in the focused efforts of workers to recover 'critters' that enter the construction site.



Project Construction Video #4 Released



Chief Brian Assu
We Wai Kai Nation



Chief Rob Everson
K'ómoks First Nation



Mayor Andy Adams
City of Campbell River



Stephen Watson
BC Hydro

Filmed in November, our fourth construction video updates the project site advancements and highlights the July 2016 community site event and our First Nation consultation. Link: <https://www.youtube.com/watch?v=HGaGNEoJYJA>

Community Liaison Committee Tour



Through our ongoing community engagement, we provided the Campbell River System Hydroelectric Facilities Liaison Committee members with a unique opportunity to see the site construction work.

People Profile – Louis Réal Girard

About Louis

Background:

Louis is a Professional Mechanical Engineer registered in BC and Quebec who's been in the hydro business since 1973. In this province, he's put 29 units on the grid (John Hart will move that total to 32) including Revelstoke Unit-5 and two units in Waneta. The John Hart project is his third underground hydro project.

Home:

Born and raised in a small village in Gaspésie, Quebec, Louis now lives in Comox.

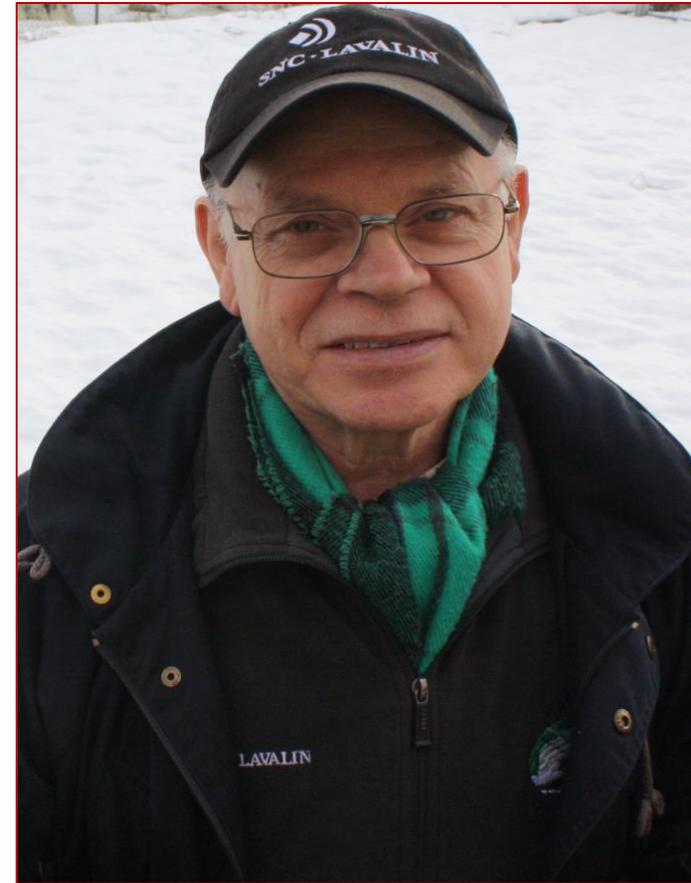
Hobbies:

Hiking and gardening mostly, but Louis also likes street cycling and fishing.

Project Responsibility:

As the site manager for the prime contractor SNC-Lavalin Construction Pacific, his responsibilities are various - but the major one is to help the project be completed on time and within the budget by solving most of the irritants that can create delay.

“This project is my last project. I will retire when the three units will be on line. It is not every day that you can have a hydro project in your back yard. I like very much the challenge of this one and I'm happy to share the life of this particular community. It is my first public-private project and I'm proud to be able to say that I had worked on this one.”



Construction – Point Of Interest

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

A look back on safety – 2016

Safety is a critical focus for the project team and the John Hart project team is proud of the record that has resulted from diligent attention and training. That record has now reached 1.7 million hours of work on the project with no lost-time incidents. This past year has been another successful one, as the statistics below show:

- In November, 897 Step Back cards were completed: These are task-specific safety assessments required by project team members to be filled out before work begins. Over 8,000 were filled out in 2016.
- In November, 80 Positive Incentive cards were handed out. This card recognizes proactive, positive behavior to protect safety and earn recipients an entry into weekly and monthly prize draws.
- The SNC-Lavalin Constructors Pacific team undertakes roughly 100 informal safety inspections each month. That doesn't include the safety inspections by the civil contractor, BC Hydro and others.

The civil contractor, ASL-JV, has reported 467 safety opportunities on the project to date. Safety opportunities record times where workers have identified a way to improve safety on site and have brought it to the attention of the project team to enable correction/improvement.