

# Peace River System Dam Safety

## BC Hydro Projects Update – December 2021



The W.A.C. Bennett Dam spillway was in use for short periods during the last two summers including this spill during July 2020.

The W.A.C. Bennett Dam, located west of Hudson's Hope, is our largest dam. The G.M. Shrum powerhouse and downstream Peace Canyon Generating Station (located at Peace Canyon Dam), supply a large amount of power to all of British Columbia, playing an important role in our hydroelectric system.

To ensure continued reliable, affordable and clean power, a number of projects are underway at the dams, or will start soon. These projects are part of our investment to upgrade our aging assets.

### W.A.C. Bennett Dam Visitor Centre Water Supply Project

Water supply for the Visitor Centre historically comes from a pond retained by the small Durack Brook Dam. The dam is aging and needs to be removed.

Various water supply options were considered, and a water well appeared to be the most economical solution. A test water well was drilled near the visitor centre in 2017. Tests in 2018 showed that this well will meet the water needs of the centre and adjacent facilities.

The water license and construction permit have been received, and construction is planned for 2022. A separate project has been initiated to remove the aging Durack Brook Dam.

#### Powered by Water

BC Hydro provides clean, reliable and affordable electricity to British Columbians. We generate about 98% clean energy for the province, mostly from our hydroelectric resources.

### W.A.C. Bennett Dam Spillway Concrete Upgrades

The objective of this project is to upgrade the spillway chute's concrete surface to ensure continued safe operation of the spillway. This project follows the Spillway Chute Upgrade Project, completed in 2016, which identified damage throughout the entire length of the spillway chute and remediated the highest priority areas. The specific sections of the spillway chute to be remediated as part of this project are the next highest priority sections in the inclined chute, both above and below the previously resurfaced area.

The project will address the priority areas by placing new sections of reinforced concrete. The main milestone achieved in 2021 was the upgrade work on the steep portion of the spillway chute.

### W.A.C. Bennett Dam Spillway Reliability Upgrade

We're upgrading the electromechanical systems of the spillway gates at the W.A.C. Bennett Dam to increase the overall reliability of the dam safety water discharge system. The three spillway gates at this site are used to release water to lower the Williston Reservoir when required. Project construction will be completed in spring 2022.

## W.A.C. Bennett Dam Reservoir Boom Replacement

The scope of the project includes the replacement of the aging and deteriorating debris boom at W.A.C. Bennett Dam with a new, next-generation reservoir boom that meets both debris interception and public safety requirements.

The boom alignment and configuration design is substantially complete and preliminary design is well underway. Construction is planned for 2022.

## Peace Canyon Left Abutment Drainage Adit Refurbishment Project

The project plan is to refurbish the existing rock support elements at the Peace Canyon left adit – a passage located in the dam abutment – to facilitate safe access for drainage maintenance at the left abutment. With the safe access objective achieved, staff will then resume regular maintenance of the pressure relief drains to promote overall abutment stability.

The project is currently in the construction phase and to date, we have scaled and installed reinforced meshing at the adit tunnel crown.



Refurbishing the existing rock support elements at the Peace Canyon left adit – a passage located in the dam abutment.

### Looking for Site C Project Information?

Please visit: [sitecproject.com](http://sitecproject.com)

Please contact BC Hydro Community Relations at 250 561 4858 or [bob.gammer@bchydro.com](mailto:bob.gammer@bchydro.com), or BC Hydro Indigenous Relations at 604 528 3290 or [anne.pigott@bchydro.com](mailto:anne.pigott@bchydro.com) for more information on the above projects.

## W.A.C. Bennett Dam Sluiceway Plug Installation and Stoplog Replacement

There are nine sluiceways and slide gates at the W.A.C. Bennett Dam spillway located below the three spillway operating gates. They are over 50 years old and haven't been used since the late 1980s.

The sluiceways and slide gates are not required for flood discharge or other operations and we've determined that the selected alternative is to decommission all nine sluiceways and slide gates. Decommissioning will involve sealing each sluiceway with a reinforced concrete plug on the upstream side of the slide gate.

To install the concrete plug in the sluiceway, new stoplogs will be required to isolate the worksite from the reservoir, as the existing stoplogs are not suitable for this purpose.

Fabrication of the stoplogs is planned for 2022, with site installation in 2023. The sluiceway plug installation is expected to commence in 2024.

### What is a stoplog?

A stoplog is a water retention device placed in front of a structure, typically in front of gates or valves that allow water passage. Multiple stoplogs are stacked one on top of the other for the full height of the waterbody, and sealed together to isolate a working area between the structure and the stoplogs to keep out water and provide a safe working area.

### What is a spillway? A sluiceway? A slide gate?

A spillway is a structure built into, or near, a dam to direct the release of water from the reservoir into the water course downstream of the dam. A spillway gate is a moveable structure that can be raised to release water from a reservoir when required.

A sluiceway is a water passage, and a slide gate is a barrier which can be opened and closed to control the flow of water.