

Peace River System Generating Stations

BC Hydro Projects Update – December 2021



Reopening in Spring 2022. W.A.C. Bennett Dam Visitor Centre is expected to welcome the public again with safety protocols in place. Check bchydro.com/bennett for updates.

Located on the Peace River, near Hudson's Hope, are two of BC Hydro's generating facilities: Gordon M. Shrum (GMS) and Peace Canyon (PCN). The GM Shrum Generating Station and nearby Peace Canyon Generating Station 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, or will start soon, at the generating stations. These projects are part of our investment to upgrade our aging assets.

GMS HVAC System Upgrade

At GMS, we'll be upgrading the 50-year old heating, ventilation and air conditioning (HVAC) system. The HVAC system provides conditioned air to building occupants and temperature regulation for generating equipment.

Targeted replacement of end-of-life components is expected to improve reliability, maintenance, accurate operation, comfort and safety. Work is planned to start in summer 2022 and be completed in 2023.

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.

GMS 500 kV Disconnect Switches Replacement Project

Thirty 500 kilovolt (kV) disconnect switches at GMS are aging, as many were manufactured in the 1960s and 1970s. These switches electrically isolate the individual generating units from the 500 kV switchyard, which is required for planned outages for maintenance and operations.

Eighteen disconnect switches have been replaced to date; the remaining 12 are to be replaced in 2022.

PCN Protection Upgrade Project

To ensure system reliability and stability, the project will upgrade the protection and control equipment for PCN generating units 1 to 4. The existing electromechanical equipment, installed in 1980, is past its service life. The new digital equipment is modern. The work includes installation of new protection and control panels and equipment for the generator exciter and transformer systems.

There are two stages for construction, timed to fit with the schedule of PCN generator outages for maintenance. The construction for units 3 and 4 started in April 2019 and was completed in September 2019. The remainder of construction has been rescheduled until 2024 to align with operational requirements.

GMS G1–10 Control System Upgrade

We're replacing unit controls for generating units 1 to 10 and retro-fitting governors for generating units 6 to 10. These control the water flow through the turbine to regulate the shaft speed of the generator. Also due for replacement are the exciters for generating units 9 and 10 – these control the current through the generator field winding to regulate the output voltage of the generator.

Additionally, we'll update controls for intake systems; controls for plant auxiliary systems; GMS plant central control room; and remote operation controls for GMS and PCN generating stations. When completed in the coming years, Site C Generating Station will also be controlled from GMS as part of this upgrade. Upgrade work has been completed for generating units 1 to 7 and 9 and 10. The outage for the unit controls upgrade and governor retrofit work for generating unit 8 was delayed due to the COVID-19 situation and is scheduled to be completed in December 2021. Upgrade work for the GMS intake and the balance of plant auxiliary systems has started and is scheduled to be completed in 2022. Work on the installation of a new control room is also scheduled to be completed in 2022. All upgrade work for this project is expected to be completed by mid-2023.

PCN Draft Tube Maintenance Gates Refurbishment—completed

There are a total of six draft tube maintenance gates at the PCN facility. The project completed refurbishment of all six through reconditioning of the gate sections and associated components.

The refurbishment was completed in August 2021.



Refurbished PCN draft tube maintenance gate section.

GMS Draft Tube Maintenance Gates Refurbishment—completed

There are a total of 10 draft tube maintenance gates at the GMS facility. The project completed refurbishments of all of them by reconditioning the gate sections and associated components.

The refurbishment was completed in June 2021.

What are draft tube maintenance gates?

These gates are required to isolate the turbine draft tubes from the tailrace and allow work in the draft tubes – either for maintenance on the turbine or the water passage itself.

What is a tailrace?

It is an outlet, downstream of a dam or generating station, which discharges water that has passed through the turbines to generate electricity.

Looking for Site C Project Information?

Please visit: sitecproject.com

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