



Early winter scene of the central control building and switchyard that sits over the underground powerhouse at W.A.C. Bennett Dam.

## Peace River Generating Stations Projects Update—March 2017

Located on the Peace River, near Hudson's Hope, are two of BC Hydro's largest generating facilities: Gordon M. Shrum (GMS) and Peace Canyon (PCN). Several projects are underway, or will start soon, that will renew aging equipment at the GMS Generating Station next to the W.A.C. Bennett Dam and downstream at Peace Canyon. The projects are part of our plan to invest approximately \$2 billion a year, over the next decade, in B.C.'s electricity system.

### GMS G1–10 control system upgrade

The new digital upgrade at the GMS powerhouse at the W.A.C. Bennett Dam will be increasing the monitoring of the units. For example, it will improve our oversight from 64 alarm points to 1,000 points.

We're replacing unit controls for Units 1 to 10; governor controllers for Units 6 to 10—these control the water flow through the turbine to regulate the shaft speed of the generator; exciters for Units 9 and 10—these control the current through the generator field winding to regulate the output voltage of the generator; controls for intake systems; controls for plant auxiliary systems; GMS plant central control room; and remote operation controls for GMS and the PCN Generating Station.

Unit control upgrade work has been completed for Units 1, 2, 3 and 5. Unit control upgrade work for Unit 4 started in February 2017.



G5 unit control board—before



G5 unit control board—after

## GMS 500 kilovolt 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 – required for planned outages for maintenance and operations – from the 500 kV switchyard and the rest of the power system. The project is currently in the design phase and replacement of the switches is scheduled for completion by the spring of 2020.

## W.A.C. Bennett Dam Visitor Centre

In May 2016, an Aboriginal Blessing event was held at the visitor centre. It was attended by members of the Peace Aboriginal Advisory Committee and Kwadacha Nation who were instrumental in developing Aboriginal content for the centre. The program included prayers (in Sekani and English), a smudging ceremony, speeches, drumming by Doig River First Nation and Blueberry River First Nation and recognition of the individuals who helped the project come to life.

The new exhibits include the Our Story, Our Voice gallery within the visitor centre; it speaks to impacts of the creation of the Williston Reservoir on Aboriginal Peoples, taking visitors on an emotional journey back in time, to before, during and after the valley was flooded in 1968. The gallery also features a powerful documentary video, created by the Kwadacha Nation, called Kwadacha by the River.

More than 7,000 visitors came through the updated centre in the 2016 season.



An artistic representation of a canoe is one of the Aboriginal-themed outdoor displays at the visitor centre.

## GMS units 1 to 5 exciter transformer replacement

Beginning in 2018, we're planning to install new exciter transformers to replace units 1 to 5. This equipment controls the magnetic field in the generator system and the output voltage.

## GMS and PCN HVAC system upgrades

At GMS, we'll be modernizing and making upgrades to the Heating, Ventilation and Air Conditioning (HVAC) system, which has been operating since the 1960s. The HVAC system provides conditioned air to building occupants and temperature regulation for generating equipment. Major HVAC components – including supply, exhaust and transfer fans – will be replaced in the powerhouse and other buildings. We're currently preparing preliminary designs with project implementation planned for mid-2018 to late 2020.

At PCN, the heating, cooling and ventilation needs aren't being efficiently met by the existing HVAC system. Major components need to be replaced and we're currently preparing feasibility designs. We're looking to combine this work with the GMS HVAC project to take advantage of synergies for the procurement schedule and equipment standardization, as well as potential cost savings.

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