

BC Hydro – Meeting Demand for Generations

BC's current and growing demand for electricity is projected to rise by up to 30% over the next two decades. BC Hydro has taken important steps to secure our province's future electricity needs through conserving more, building more, and buying more. Building more includes reinvesting in our aging heritage hydro assets to expand their lifespan and capacity.

Reinvesting in our heritage assets

BC Hydro continues to modernize, extending the life of our existing hydroelectric assets and adding additional capacity. These investments, totalling over \$3.4 billion over the next three years alone, will continue to ensure that the backbone of our system remains strong and reliable. One of the largest capital projects currently underway is the upgrade and refurbishment of Mica Generating Station.

Upgrades and refurbishment to Mica Generating Station

The Mica Generating Station, located 135 kilometres north of Revelstoke, is a cornerstone of BC Hydro's Columbia River generation system. Built in 1977 with room for six generating units, the underground power plant currently houses four generating units with a combined maximum capacity of 1,805 megawatts (MW). Mica generation accounts for roughly 15 percent of BC Hydro's current installed capacity with a historic annual average power production of 7,202 gigawatt hours (GWh).

Mica Stator Upgrade

BC Hydro is replacing the stator and rotor poles on each of the four units at the Mica Generating Station to improve generation reliability. We began the work in 2006 and have completed three units as planned. The fourth unit remains on schedule for completion in 2010.

Mica Switchgear Project

In addition, BC Hydro proposes to replace aging 500 kilovolt (kV) switchgear equipment at Mica Generating Station to improve generation and transmission reliability. The project will involve replacing the existing switchgear equipment and installing additional equipment that will be needed for generating units five and six.

Power is brought from Mica's underground generators to the above-ground transmission system through gas insulated conductors installed in two lead shafts. The lead shafts end in the switchgear building that houses two 500 kilovolt (kV) circuit breakers and other electrical equipment needed to safely transmit electrical energy.

Project Construction

The existing conductors, circuit breakers, and related electrical equipment will be replaced. At the same time the third conductor will be installed in a third lead shaft excavated at the time the powerhouse was built. This third conductor will be used to

support the existing 4 generating units while lead shafts 1 and 2 are being replaced. The third conductor will also be required to support the fifth and sixth generating units.

To accommodate the third lead shaft the switchgear building will be extended by 124 feet or roughly 1/3 of its current length to accommodate the commissioning of a third conductor and lead shaft. The extension of the switchgear building will occur on a previously disturbed site within the BCH generating station yard. Environmental assessments conducted for BC Hydro indicate there will be no effect on wildlife, vegetation or heritage resources.

Mica GIS
Switchgear Building Addition
Rendering by Vincent Wright



Artist's impression of the extended Mica Switchgear building.

Construction is expected to start in 2010 and will be phased to allow the continued operation of Mica Generating Station.

Mica Units 5 and 6 Projects

BC Hydro also proposes to install two additional generating units into empty bays at Mica Generating Station. Each additional unit would provide approximately 500 MW of capacity. BC Hydro filed Project Descriptions with the BC Environmental Assessment Office in 2008. Visit www.eao.gov.bc.ca for details on the environmental review.

For more information

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