

Nokian Capacitors' Series Capacitor Bank improves transmission network security in Canada

Nokian Capacitors has delivered a 500 kV Series Capacitor Bank to British Columbia, Canada. Apart from the capacitor equipment, the Guichon turnkey project is comprised of civil works, foundations, disconnectors and bypass breakers, a control building complete with equipment, a station battery with charger and a station service system with a stand-by diesel generator, a SCADA system, alarm center, sanitary and storage facilities.

The buyer, BC Hydro, is one of Canada's biggest power utilities. The company produces and distributes energy for British Columbia and the west coast of Canada including the Vancouver area. BC Hydro also exports electricity to the United States.

The Guichon station is located 400 km northeast of Vancouver close to Logan Lake mining city. The station increases the current of the line sector from 1,600 to 2,400 amperes, improves system stability and reduces losses. In addition, it ensures sufficient power supply in case of faults in parallel lines.

The protection of the Series Capacitor Bank and the automation of the substation have been implemented with state-of-the-art digital control & protection (NDP+) designed by Nokian Capacitors. Local control is provided by two Windows 2000-based workstations in which FLASH disks were substituted for conventional hard disks.

Communication from the unmanned station is managed through a microwave link to two control centers in charge of energy distribution. Remote monitoring stations control not only the series capacitor bank but also the operation of the entire Guichon station.

The location of the Guichon station is in an earthquake prone area, which was taken into account during the engineering. Before start-up, the station was subjected to a seismic simulation test designed by the Technical Research Centre of Finland.

A supply contract was signed in May 2002 and the station was put to commercial use, on schedule, in November 2003. The customer is highly satisfied with the performance of the equipment and our advanced technical solutions.

BC Hydro has been one of our key customers since the 1960s. Our cooperation began with the supply of Kennedy and McLease Series Capacitor Banks in 1970. The equipment of this initial delivery is still in operation, though modernized.



TECHNICAL DATA

Rated voltage	500 kV		
	Initial Stage	Future 1	Future 2
Rated current	2400 A	2400 A	2730 A
Rated power	420 Mvar	524 Mvar	531 Mvar