

Hydro One Detweiler TS Static Var Compensator & Control Building

Kitchener, ON

Owner: Hydro One

Value: \$8,000,000

Date: May 2011

Trades: Electrical
Mechanical
HVAC
Civil



Project Description and Scope:

The State Group was sub-contracted to construct a Static Var Compensator (SVC) and Control Building at the Detweiler TS site. The Control Building contains the operating and control equipment for the SVC system. The undertaking was to construct a “Turn Key” project for Hydro One. The State Group was responsible for the civil, electrical and mechanical scope of work.

The civil scope included all civil construction, from site surveying through excavation, concrete foundations, and all required site fencing. A metal framed block and brick control building was also erected, complete with the mechanical and electrical building services.

The mechanical scope included the installation of thyristors which are cooled by a closed loop water system. The complete mechanical system was installed and commissioned by The State Group.

The electrical scope included 4 – single phase 230/27.6kV transformers. The scope included the delivery from a local rail side to site and the offloading onto their footings. The transformers were dressed installing all the bushings, cooling radiators, conservator tanks and associated piping. There were 2 – 230kV SF6 circuit breakers ahead of the transformers, with isolating 230kV motorized switches on each side. On the 27.6kV side 5”, 8” and 12” aluminum welded bus systems were fabricated on site. From the bus large wire drops were installed connecting motorized and manual switches, controlling reactors and capacitor banks all part of the system. The equipment was controlled and monitored through the control panels in the control building. Cable trench was installed providing a raceway for power and control cables from the field equipment. A large grounding grid was installed providing grounding to all equipment and steel structures.

The SVC system provides fast acting, reactive power to the High Voltage Electrical Transmission Network. These installations are relatively new to Ontario and are extremely technically advanced. SVC installs are part of the A.C. transmission system, regulating voltages bringing stability, all with no moving parts other than the breakers and switches. The purpose of a SVC is to bring the system closer to unity Power Factor. ABB Inc. designed the project and the installation was completed on schedule by The State Group. This “Turn Key” project was successfully turned over to Hydro One.