



Enersource Hydro Mississauga - SCADA Project

**Sector of activity :**

Energy Control Systems

**Client :**

Enersource Hydro Mississauga

**Year of completion :**

2000

**Financing :**

Client

**Mandate :**

To design, supply, install, and commission a new Distribution SCADA System for Enersource Hydro Mississauga, which operates and maintains the power distribution network in Mississauga, Ontario. The scope of work included the delivery of all hardware, software, documentation and training for the new system, as well as all necessary testing, field installation and adaptation services.

**Description :**

Enersource Hydro Mississauga, the regulated electricity distribution affiliate of Enersource Corporation, has delivered electricity reliably and safely throughout Mississauga for 86 years. Enersource Hydro Mississauga is one of the largest distributors of electricity in Ontario, and has gained a national reputation for service excellence. Their distribution network covers an area of approximately 300 km<sup>2</sup> which includes various distribution and sub-transmission networks at voltages of up to 44 kV, including some 300 feeders and 80 distribution substations.

The Distribution SCADA System supplied by SNC-Lavalin Energy Control Systems is used to monitor and control the power distribution network in Enersource Hydro Mississauga's service territory. The system allows

operators to effectively manage the distribution system in real-time, and provides planning tools that identify ways to optimize the use of the utility's resources, and improve the quality and reliability of service.

The system is based on a distributed client/server architecture designed to internationally recognized standards. Commercial off-the-shelf equipment is used throughout the system, which provides simplified maintenance and easier system expansion. The system includes redundant HP Alpha servers, HP Intel workstations, communication equipment, and peripheral equipment connected to a redundant local area network. The system includes redundant components to ensure high availability, and provides automatic fail-over features.

The SCADA software is based on the GEN-3 product developed by SNC-Lavalin Energy Control Systems. The database is maintained in an Oracle RDBMS stored on RAID-1 storage arrays, and is complemented by a set of memory-resident real-time databases that are replicated to all of the servers and workstations on the local area network for optimal performance. All database edits can be performed online without the need to failover any servers or workstations to bring the changes

online. The system includes redundant serial channels supporting the DNP3 and CAE protocol for communicating with the substation RTUs, and approximately 110 CAE feeder RTUs that communicate via a multi-point radio system. The system includes the TASE.2 ICCP protocol for communicating with neighbouring utilities.

Enersource Hydro Mississauga is a repeat customer for SNC-Lavalin Energy Control Systems, having previously purchased a GEN-2 SCADA to monitor and control its distribution network. Since installing the GEN-3 SCADA system, Enersource Hydro Mississauga has earned the highest overall impression rating in a survey benchmarking performance among 19 major Canadian electricity utilities. In 2003, they averaged 23 minutes annual outage time per customer; this reliability is far ahead of most Canadian and U.S. large urban utilities.

**Services provided :**

A turnkey contract including project management, hardware, software, data conversion, system integration, acceptance testing, documentation, customer training, and necessary field installation and adaptation services.



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**SNC-LAVALIN ENERGY CONTROL SYSTEMS INC.** SNC-Lavalin is Canada's largest engineering and construction firm. SNC-Lavalin Energy Control Systems has nearly 40 years experience, with systems installed on six continents. Our SCADA, Distribution Management System (DMS), Energy Management System (EMS) and Generation Management System (GMS) products are being used by some of the world's largest utilities. We also offer SCADA systems to monitor and control water distribution networks and natural gas distribution systems.