



Scarborough Public Utilities Commission - SCADA/DMS

Sector of activity :

Energy Control Systems

Client :

Scarborough Public Utilities Commission

Year of completion :

1996

Financing :

Client

Mandate :

To design, supply, install, and commission a new SCADA/DMS for the Scarborough Public Utilities Commission (PUC), which operates and maintains the power distribution network in Scarborough, Ontario, Canada. 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 :

The Scarborough Public Utilities Commission (PUC) managed the electric and water distribution business within the city of Scarborough, Canada. In 1998 the city of Scarborough was amalgamated with the city of Toronto, and is now known as the Toronto East District.

The SCADA/DMS supplied by SNC-Lavalin Energy Control Systems was used to monitor and control the power distribution network in Scarborough PUC's service territory with the objective of improving the quality and reliability of service; this was achieved primarily by the distribution management applications developed by SNC-Lavalin Energy Control Systems. These applications provided a means to effectively manage the operation of the distribution system in real-time, and

provided planning tools that identified ways to optimize the use of the utility's resources.

The SCADA/DMS was based on a distributed client/server architecture designed to internationally recognized standards. Commercial off-the-shelf equipment was used throughout the system, which provided simplified maintenance and easier system expansion. The system included redundant HP Alpha servers, HP Alpha workstations, communication equipment, and peripheral equipment connected to a redundant local area network. The SCADA/DMS was fully redundant for high availability, and provided automatic fail-over features.

The SCADA/DMS software was based on the GEN-3 product developed by SNC-Lavalin Energy Control Systems. The distribution network model was maintained in Sybase RDBMS stored on RAID-1 storage arrays, and was complemented by a set of memory-resident real-time databases that were replicated to all of the servers and workstations on the local area network for optimal performance. All database edits could be performed online without the need to failover any servers or workstations to bring the changes online. The system included redundant serial channels supporting the Motorola

CIU and DNP3 protocols for communicating with intelligent electronic devices (IED) and remote terminal units.

The SCADA/DMS included sophisticated distribution management applications, including connectivity analysis, distribution power flow, load forecasting, demand allocation, power loss minimization, energy loss minimization, load balancing, load shedding, and feeder voltage control. The distribution network model and geographic displays were imported from the corporate GIS system.

Services provided :

A turnkey contract including project management, hardware, software, system integration, acceptance testing, documentation, customer training, and all 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.