



AGL Electricity - SCADA/DMS

Sector of activity :
Energy Control Systems

Client :
AGL Electricity

Year of completion :
1997

Financing :
Client

Mandate :

To design, supply, install, and commission a new SCADA/DMS for AGL Electricity, which operates and maintains the power distribution network in Melbourne, Australia. 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 :

AGL Electricity, a division of the Australian Gas & Light Company (AGL), supplies electricity to approximately 261,000 homes and businesses through its 7,041 kilometres of distribution system. AGL Electricity's distribution system services 950 square kilometres of northwest greater Melbourne. Careful planning and forecasting enables AGL Electricity to achieve high reliability targets and deliver a quality electricity supply to meet the needs of all its customers.

The SCADA/DMS is installed in Melbourne, Victoria, and a Disaster Recovery System is installed at a remote location. The system is used to monitor and control the power distribution network in AGL Electricity's service territory with the objective of improving the quality and reliability of service; this is achieved primarily by the

distribution management applications developed by SNC-Lavalin Energy Control Systems. These applications provide a means to effectively manage the operation of the distribution system in real-time, and provide planning tools that identify ways to optimize the use of the utility's resources.

The SCADA/DMS 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 Alpha workstations, communication equipment, and peripheral equipment connected to a redundant local area network. The SCADA/DMS is fully redundant for high availability, and provides automatic fail-over features.

The SCADA/DMS software is based on the GEN-3 product developed by SNC-Lavalin Energy Control Systems. The distribution network model is maintained in the Sybase 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 Conitel, DNP3 serial, and DNP3 IP protocols for communicating with intelligent electronic devices (IED) and remote terminal units, including Schweitzer 351 relays, Foxboro RTUs, and Moscad RTUs. The system also includes the ICCP TASE.2 protocol for communicating with other control centres.

The SCADA/DMS includes 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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CUSTOMER CONTACT :

AGL ELECTRICITY

Level 2, 333 Collins Street
Melbourne, Victoria
3000
Australia

Mr. Michael Eccles
Tel.: +61-3-9201-7664

CONTACT US :

**SNC-LAVALIN
ENERGY CONTROL SYSTEMS INC.**

2425 Pitfield Blvd.
Montreal, Quebec
Canada H4S 1W8
Tel.: +1 (514) 334-6780
Fax: +1 (514) 334-2610
Email: ecs@snclavalin.com

www.snclavalin.com/ecs

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.