



Electricidad de Caracas - GENE SCADA/EMS Upgrade

Sector of activity :

Energy Control Systems

Client :

C.A. La Electricidad de Caracas

Financing :

Client

Mandate :

A full system upgrade of the existing SCADA/EMS for Electricidad de Caracas, which operates and maintains the transmission network in Caracas, Venezuela. The scope of work includes the delivery of all hardware, software, integration, testing, documentation, and training for the main control system, dispatcher training simulator, and business continuity solution as well as support services for installation and commissioning.

Description :

Electricidad de Caracas (EDC), is a reputable Venezuelan utility devoted to providing the best electric service for its customers, with the objective of improving the quality of life of Venezuelans.

Its transmission system operates at 230 kV, and includes a 69 kV and 30 kV sub-transmission network. Their primary role is to provide a secure and reliable network to transport high-voltage electricity from generators to electricity distribution networks.

Electricidad de Caracas is a repeat customer for SNC-Lavalin Energy Control Systems, having previously purchased a GEN3 SCADA/EMS to monitor and control its transmission network, as well as a GEN3

SCADA/DMS to monitor and control its distribution network in Venezuela.

The SCADA/EMS is based on a highly secure, distributed client/server architecture designed to internationally recognized standards. The system is fully based on the Red Hat Linux operating system, and includes HP ProLiant servers and HP xw-workstations, communication equipment, mapboard, large screen display, and peripheral equipment. The SCADA/EMS is fully redundant for high availability, and provides automatic fail-over features.

The SCADA/EMS software is based on the GENE product developed by SNC-Lavalin Energy Control Systems. The power network model is maintained in an Oracle RDBMS stored on a fault-tolerant storage area network (SAN) appliance. The system includes redundant serial channels supporting the DNP3 IP protocol for communicating with remote terminal units. The system includes the ICCP TASE.2 protocol for communicating with other control centres. The system also includes a Business Continuity System that is updated in real-time from the Main Control System.

The GENE EMS applications are fully integrated with Nexant PCA Powersuite,

and include Load Forecast, Thermal Unit Commitment, Interchange Transaction Scheduling, Automatic Generation Control (AGC), Economic Dispatch, Reserve Monitor, Network Topology Processor, State Estimator, Dispatcher Power Flow, Transmission Loss Penalty Factor Calculation, Reactive Reserve Monitor, Contingency Analysis, Contingency Remedial Action, Optimal Power Flow, Security Constrained Generation Dispatch, Volt-VAR Scheduling, Study Short Circuit Analysis, Pre-Switching Validation, and Fault Level Calculation. A built-in Application Sequence Controller coordinates the execution of these applications.

The SCADA/EMS includes a Dispatcher Training Simulator (DTS) to provide the system operators with valuable tools to assist in operating the electric power system to high performance standards, in particular, network security.

Services provided :

Services provided include project management, hardware, software, system integration, acceptance testing, documentation, customer training, and support services for all field installation and adaptation services.



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CUSTOMER CONTACT :

C.A. LA ELECTRICIDAD DE CARACAS

Apartado 2299, Caracas 1010-A
Avenida Vollmer, San Bernardino
Caracas, Venezuela

Mr. Juan Dupouy
58-212-502-2514
Email: juan.dupouy@aes.com

www.laedc.com.ve

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.