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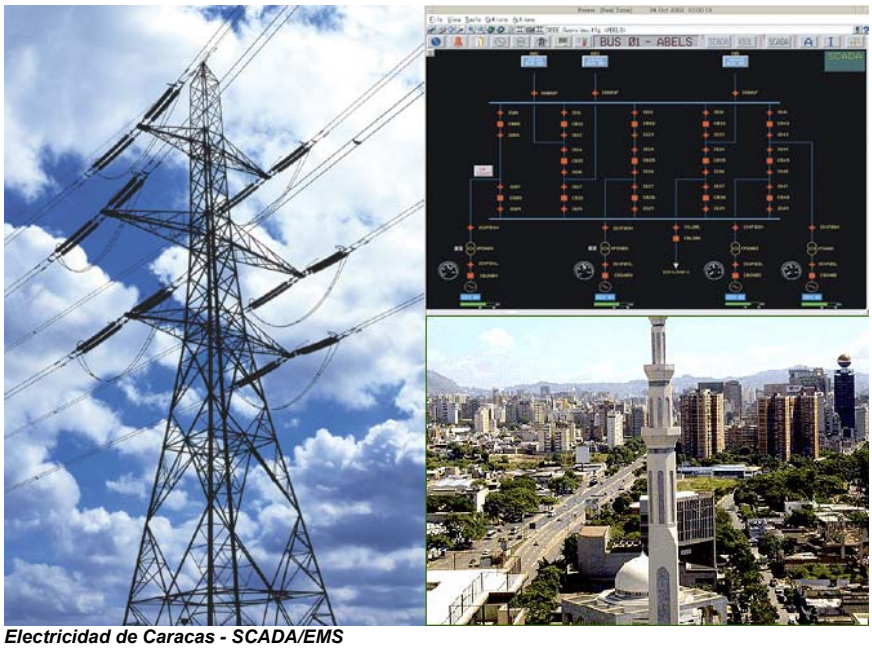
Electricidad de Caracas - SCADA/EMS

Caracas, Venezuela



Electricidad de Caracas - SCADA/EMS

Sector of activity :
Energy Control Systems

Client :
C.A. La Electricidad de Caracas

Year of completion :
2000

Financing :
Client

Mandate :

To design, supply, install, and commission a new SCADA/EMS for Electricidad de Caracas, which operates and maintains the transmission network in Caracas, Venezuela. The scope of work included the delivery of all hardware, software, documentation, and training for the main control system and disaster recovery system.

Description :

Electricidad de Caracas (EDC), a branch of AES Corporation, is a private company 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 GEN-3 SCADA/DMS to monitor and control its distribution network in Caracas, Venezuela.

The SCADA/EMS is installed in Caracas, Venezuela and is used to monitor and control the transmission network in EDC's service territory. The SCADA/EMS 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, mapboard controllers, and peripheral equipment connected to a redundant local area network. The SCADA/EMS is fully redundant for high availability, and provides automatic fail-over features.

The SCADA/EMS software is based on the GEN-3 product developed by SNC-Lavalin Energy Control Systems. The power network model is maintained in an Oracle RDBMS stored on RAID-1 storage arrays. 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 RTU protocol for communicating with remote terminal units. The system also includes the ICCP TASE.2 protocol for communicating with other control centres.

The EMS applications are fully integrated with Nexant PCA Powersuite, and include the Short-Term Load Forecast, Network Topology Processor, Bus Load Scheduler, State Estimator, Dispatcher Power Flow, Transmission Loss Penalty Factor Calculation, Reserve Monitor, Contingency Analysis, Contingency Remedial Action, Optimal Power Flow, and Fault Level Calculation. A built-in Application Sequence Controller coordinates the execution of these applications.

The SCADA/EMS provides the system operators with valuable tools to assist in operating the electric power system to high performance standards, in particular, network security.

Customer training consisted of formal classroom training and on-the-job training (OJT) to ensure the customer was prepared to operate and maintain the 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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