



Elektro Gorenjska - SCADA/DMS

**Sector of activity :**  
Energy Control Systems

**Client :**  
ENSICO

**Year of completion :**  
2003

**Financing :**  
Client

**Mandate :**

To design, supply, install, and commission a new SCADA/DMS for Elektro Gorenjska, which operates and maintains the distribution network in the northwest region of Slovenia. Working with our local partner, ENSICO, 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 :**

Elektro Gorenjska provides a regular supply of electrical energy to 78,012 consumers scattered over an area of 2,091 km<sup>2</sup>. It supplies 767,569,950 kWh of electrical energy to its users annually with the aid of 15 distribution transformer stations, 1,276 transformer stations and 4,342 km of distribution power lines. It manages 15 power plants with an installed power of 9.4 MW, annually producing 47,317,000 kWh of electrical energy and thus satisfying 5.7% of the overall demand for electrical energy in the Upper Carniola region.

The SCADA/DMS is installed in Kranj, Slovenia and is used to monitor and control the power distribution network in Elektro Gorenjska's service territory. The SCADA/DMS includes Supervisory Control and Data Acquisition (SCADA) applications, distribution network

analysis, trouble call management, service order management, and outage management applications. The objective of the system is to improve 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.

For this project, SNC-Lavalin Energy Control Systems was responsible for the supply of the SCADA/DMS software. The prime contractor, ENSICO, was responsible for the supply of the system hardware, installation, commissioning, and hardware maintenance. ENSICO is a system integration company specializing in distribution automation and telecommunications in Slovenia, and is an authorized value-added reseller for the GEN-3 and GEN-4 suite of products.

The SCADA/DMS 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 Alpha 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/DMS software is based on the GEN-3 product developed by SNC-Lavalin Energy Control Systems. The distribution network model 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. The system includes redundant serial channels supporting IEC-870-5-101 and DCP1 protocols. The system also supports the ELCOM-90 protocol.

**Services provided :**

Supply of GEN-3 software, documentation, and support for the Supervisory Control and Data Acquisition (SCADA) and Distribution Management (DMS) applications, including Switching Orders and Trouble Call Management.



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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.