



E.ON Finland - SCADA Project

**Sector of activity :**

Energy Control Systems

**Client :**

E.ON Finland

**Year of completion :**

2000

**Financing :**

Client

**Mandate :**

To design, supply, install, and commission a new SCADA system for E.ON Finland (formerly Espoon Sähkö Oyj), which operates and maintains the power distribution network in Espoo, Finland. The scope of supply included all hardware, software, documentation, and training for the SCADA system, as well as the interfaces to external business systems.

**Description :**

E.ON Finland is part of the world's largest investor-owned energy service provider, E.ON Energie AG. They produce, acquire and sell electricity, district heating and natural gas for the energy needs of their customers. E.ON Finland supplies electricity to some 110,977 customers and services an area covering 670 square kilometres.

The SCADA system is installed in Espoo, the second largest city in Finland, and the largest technology centre in Scandinavia. The SCADA system includes interfaces to the corporate GIS, corporate EMS and ELCOM partners. The large historical subsystem serves as a repository for information from these other systems. E.ON Finland trades electricity in an extremely deregulated environment where profits are made based on the accuracy of forecast information. The

SCADA system provided by SNC-Lavalin Energy Control Systems plays an important role in their planning and trading activities.

The SCADA 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 HP Alpha servers, HP Alpha workstations, communication equipment, large screen display, and other peripheral equipment. The system includes redundant components to ensure high availability, and provides automatic fail-over features.

The SCADA software is based on the GEN-3 product developed by SNC-Lavalin Energy Control Systems, and uses the Oracle RDBMS for database management, historical data storage, and reporting. The RDBMS 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 SCADA system controls the existing NETCON remote terminal units through four ADTranz data concentrators using the IEC 870-5-101 protocol. In addition, the SCADA System sends and receives information from energy trading partners via ELCOM-90 data links. These ELCOM partners include the corporate GIS system, process control system, district heating telecontrol system, and other power companies in Finland and abroad. The SCADA system's large historical database is also a repository for trading information.

The SCADA system provides tools to effectively manage the operation of the electric power system in real-time, and provides planning tools that identify ways to optimize the use of the utility's resources and improve the quality and reliability of service.

**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.