

SEL and GarrettCom Chosen for Honduras NACO Power Plant Automation

An Industrial Networking Application

TECHNOLOGY TODAY

With fuel prices increasing with no long-term end in sight, energy efficiency and energy-generation efficiency have become more important than ever. Economic opportunities are available for generation companies such as Independent Power Producers (IPPs) to provide efficiently generated power to utility companies in urgent need of power. These IPPs can also contract directly with the manufacturing sites that need a reliable source of power with predictable costs.

An Independent Power Producer is a corporation that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an electric utility.

ABOUT THE NACO ENVASA PROJECT

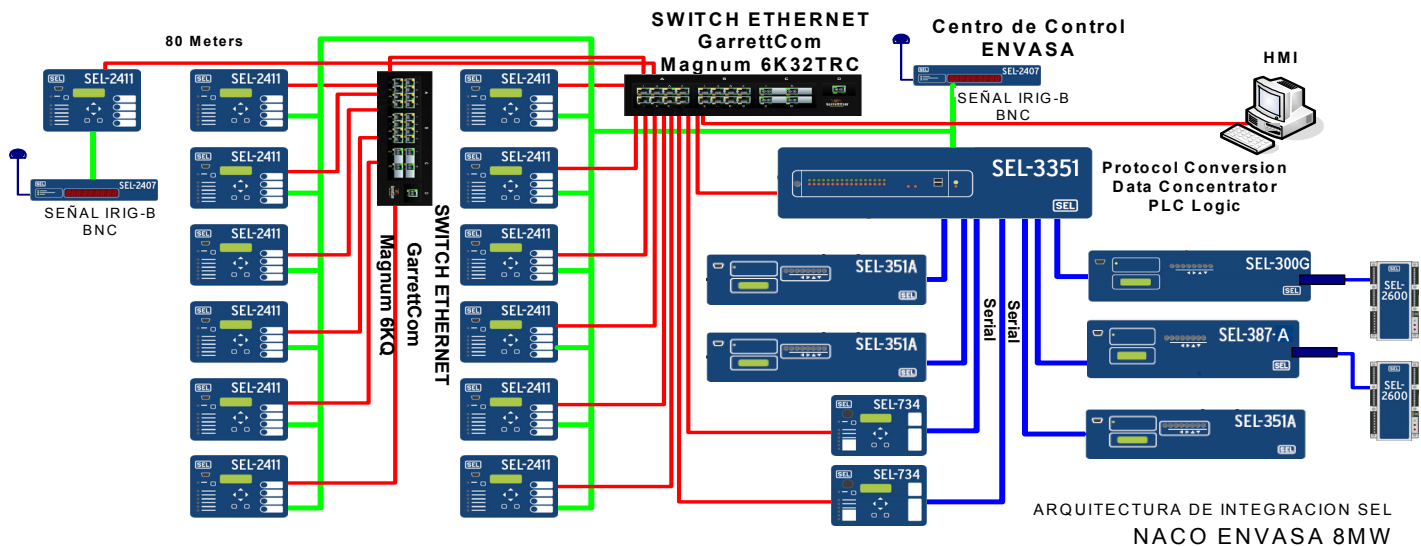
NACO is an IPP located about 45 kilometers from San Pedro Sula, Honduras. NACO ENVASA is a greenfield project--all new construction. Adjacent to NACO Power Plant, which is a coal-fired steam turbine generator, is a large textile mill. NACO provides the mill with a very reliable source of energy with predictable costs--thanks to a long-term contract. In Honduras' deregulated market, NACO is not only able to build a generator but also able to sell the energy on the open market. Because of economic growth in Honduras, there is a net demand for additional generation so that the local utility will readily purchase any otherwise uncontracted power from NACO.

Schweitzer Engineering Laboratories (SEL) has worked with NACO on other projects in the region, and NACO owners and engineers trust SEL's products and recommendations for this site. The project scope of work included controls and electrical system protection as well as generator protection on the ENVASA project. NACO provides the expertise for the coal-fired boiler and steam turbine generator installation. SEL serves electric power utilities and industrial clients worldwide through the design, manufacture and support of digital protective relays and automation products, plus services for power system protection, control, monitoring, integration and automation.

THE CHALLENGE

A key goal for the NACO ENVISA Project was to create a new networked protection and control system for the NACO generation plant that would allow more visibility and control into the plant operations, including devices like conveyors and blowers on the boiler. This is a unique application in that the electrical system protection and control are combined with process control, in one integrated system. The power plant generates eight megawatts electricity. Main contracts are to supply electricity to the textile mill with overages to the local power utility.

To network all of the IEDs in the harsh plant environments, SEL not only chose Ethernet--but Ethernet switches designed for substation environments--and as hardened and reliable as SEL's own products.



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THE SOLUTION

GarrettCom Magnum 6K Managed Ethernet Switches were chosen for the project. The Magnum Switches chosen are convection-cooled (no fans) and are impervious to dust and dirt--which can impede the normal cooling of switches with fans. The high port count density of the Magnum switches also enabled concentration of all of the IEDs and remote management of the IEDs all over the plant.

The control room of the plant (see diagram preceding page) also includes multiple SEL-2411 Programmable Automation Controllers (PAC) that combine a PLC's ruggedness with PC functionality. Other SEL control room products include the SEL 3351 Integration Engine and the SEL-2407 Clock, as well as various meters, relays, and voltage regulators.

THE RESULTS

GarrettCom switches have been specified into projects, throughout North, Central, and South America. Based on this experience, SEL Engineer Eduardo Palma was confident in the choice of GarrettCom 6K Magnum switches for the NACO power plant and boiler protection and control system. The system was recently commissioned and is operating--another success for NACO and SEL as well as GarrettCom.

ABOUT MAGNUM PRODUCTS

Magnum 6K Managed Switches are highly configurable switches, providing modular slots for user selection of 100Mb, 10Mb, or Gigabit Ethernet fiber or copper ports, and are substation hardened with "no-fans" or fan-based cooling. Power input choices include AC, 125VDC, -48VDC, 24VDC, and dual DC input for redundancy. For a top cover-off view of one of the Magnum 6K switches used by SEL in these applications, click here.

MNS-6K Managed Network Software provides the latest technology for switch management, network management and security. Based on network standards, it is easily integrated into existing networks, and features standards-based redundancy functionality and Secure Web Management (SWM) GUI. MNS-6K offers standards-based cyber security tools for supporting NERC CIP network and systems compliance for power utilities and other critical industrial operations. MNS-6K-SECURE is available for those customers demanding *extra* security in their networks.

ABOUT SEL

SEL serves the electric power industry worldwide through the design, manufacture, supply, and support of products and services for power system protection, monitoring, control, automation, and metering. SEL offers unmatched local technical support, a worldwide, ten-year product warranty, and a commitment to making electric power safer, more reliable, and more economical.

ABOUT GARRETTCOM

GarrettCom, Inc. is the leading manufacturer of industrial and power utility networking products. GarrettCom offers a comprehensive line of IEC 61850, NEBS and ETSI-certified switches for use in power utility, factory floor, telecommunications, and outdoor environments. The company's management software supports redundant rings and secure web-based access to local and remote networks. GarrettCom offers a full solution of cyber and physical security solutions design to protect power utilities and other critical industries as well as insure NERC CIP compliance. GarrettCom markets its products through a network of resellers, OEMs, system integrators, and distributors worldwide. For more information on GarrettCom and its products, visit www.GarrettCom.com.



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