KOSEP's Yonghung Thermal Power Plant Achieves Low Emissions with Emerson Solutions

RESULTS

- Completion of plant testing and startup approximately 3 months ahead of schedule
- Lowest SOx, NOx, and dust emissions of all the thermal power plants in Korea
- Minimized of cabling and maintenance costs due to simplified circuitry

APPLICATION

Installation of an Integrated Control & Monitoring System (ICMS) in the 2x800-megawatt, coal-fired, supercritical Yonghung Thermal Power Plant Units 1 & 2.

CUSTOMER

Korea South-East Power Company, Ltd. (KOSEP)

CHALLENGE

South Korea consumes about 15 gigawatts of energy each year, half of which goes to the country's largest and most densely populated city, Seoul. With annual energy consumption growing at 8 percent, Korean power generators must take steps to maintain high levels of availability and reliability to maintain cost-effective production. The Yonghung Power Plant is part of KOSEP's strategy to maintain low-cost, high-quality electricity for Seoul's metropolitan area.

Newly constructed and online in 2004, Yonghung Units 1 & 2 were built to be the ultimate example of the next generation of clean-burning, highly efficient power plant operations. The plant is required to exhibit:

- Above-average heat rate
- Short hot and cold startup times
- Environmental protection
- Operational and fuel savings
- State-of-the-art technology

The Ovation™ system is fully integrated throughout the units' processes. The system permits operators in the main control room to control and monitor critical plant processes, while providing data to the plant's main computer.

OVATION™

EMERSON™

SOLUTION

Emerson provided Ovation™ automation technology for the Integrated Control and Monitoring System (ICMS) to manage all plant systems, including the following:

- Boiler control
- Burner management control
- Data acquisition
- Motor control
- Balance-of-plant control

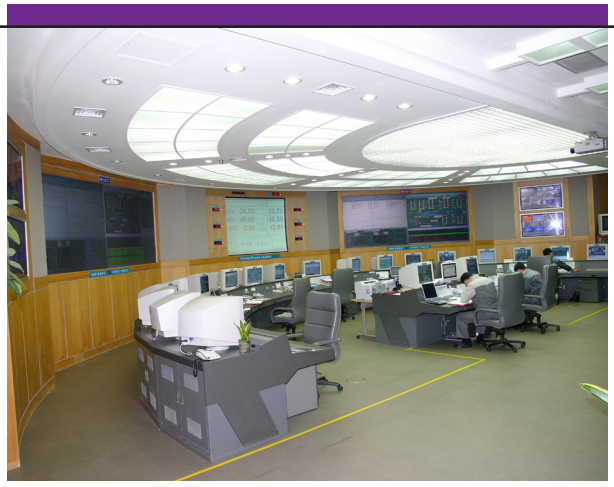
In addition to the control system, the ICMS also incorporates an advanced, high-fidelity Ovation simulator, plant optimization technology, furnace temperature monitoring, AMS Suite: Device Manager and seamless interfaces to the flue gas desulphurization, electrostatic precipitator and auxiliary systems.

Ovation Control System — The Ovation system is fully integrated throughout the units' processes. The system permits operators in the main control room to control and monitor critical plant processes, while providing data to the plant's main computer.

Ovation Simulator — KOSEP implemented twin high-fidelity simulators for Units 1 and 2. The simulators use real Ovation hardware and software in conjunction with modeling software to simulate startups, verify operating procedures and test new application software. The simulators offer a realistic opportunity to train and prepare plant staff to handle any situation.

Ovation Advanced Applications — Ovation advanced optimization applications generate optimal setpoints and biases, allowing the Yonghung plant to minimize the variations in steam temperature, increase its efficiency and reduce consumption of cooling water.

AMS Suite: Device Manager — KOSEP uses AMS Device Manager to monitor the plant's intelligent devices. AMS offers predictive maintenance capabilities so that plant personnel can predict and preemptively correct any potential problems with Yonghung's devices, thus reducing maintenance costs significantly.



The main control room at the Yonghung Power Plant allows operators to view information pertaining to any process in the plant.

Use of technologies like a flue gas desulphurization system helps to secure Yonghung's place as one of the most clean and efficient power plants in the world.

OVATION™

For more information:
www.Emerson.com/Ovation

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