Success Story

Honeywell

E.ON’s Louisville Gas and Electric Company Turns to Honeywell and Wood Group for Complete Turbine Control Solution

“We were in need of a new turbine control system that was reliable and also worked with our DCS system already in place. With Honeywell and its partner Wood Group Turbine Control Services we were able to have an integrated DCS and turbine control solution that fit perfectly within our environment and met our business needs with a single powerful solution.”

Alan Crone, Senior Control Specialist, E.ON

Benefits

E.ON U.S., headquartered in Louisville, Kentucky, U.S.A., is a diversified energy services company that operates the Louisville Gas and Electric Company. At its Cane Run Station, a coal-fired generating station in Louisville, there were three units out of six in working order and they needed a turbine control overhaul. The plant was looking for a new turbine control system that would integrate with its existing Honeywell control system and lower the number of trips to deal with various operability issues.

Having been a longstanding Honeywell customer, E.ON turned to Honeywell and its partner, Wood Group Turbine Control, to implement a new integrated turbine control system. Benefits experienced from the combined Honeywell Experion® Process Knowledge System (PKS) and turbine control included:

- Increased reliability and availability through redundancy features of the Experion system
- Consolidated and reliable data reporting and archiving
- Plant-wide, single-interface control for the integrated solution
- Seamlessly combined hardware and software provided an integrated and reliable solution from one vendor
- Common engineering, diagnostics and documentation console
- Increased operator effectiveness with the ease-of-use of the system and unbeatable service and training
- Effective and consolidated data reporting and archiving

E.ON installed a new turbine control system with integrated Honeywell and Wood Group technology for increased reliability.

Background

E.ON U.S. is a diversified energy services company that owns and operates Louisville Gas and Electric Company, a regulated utility that serves 318,000 natural gas and 390,000 electric customers in Louisville and 16 surrounding counties. It also owns Kentucky Utilities Company, a regulated electric utility in Lexington, Kentucky that serves 518,000 customers in Kentucky and Virginia.

One of the U.S.'s lowest-cost energy providers and an industry innovator, the company operates in domestic and international markets from its Kentucky headquarters.

Challenges

E.ON was looking for a turbine control solution that would integrate with its existing Honeywell control system as seamlessly as possible. Having several issues with its old turbine control system and a recent pattern of more and more unit trips instigated the need for a new capital project to find and install a new system.

"With our previous technology there was just a serial interface where we could pull information across the system to make things work," said Alan Crone, senior control specialist, E.ON. "Because we were a Honeywell shop we wanted something that worked with our current controllers and still gave us the latest and greatest in terms of turbine control."

Solution

E.ON turned to Honeywell and its partner Wood Group to help implement a new solution at the plant and update its technology. With Honeywell, E.ON obtained an integrated solution thanks to Honeywell's partnership with Wood Group Turbine Control Services, an international energy services company with expertise in turbines.

"We have a great relationship with Honeywell and with their four decades of experience in the power industry offering proven technology for complete power plant automation, we knew we couldn't go wrong," continued Crone.

"More power generation companies are upgrading their older control systems because they are becoming increasingly harder to maintain and simply don't meet the demands of today's marketplace," said Gary Schwartz, managing director of Wood Group Turbine Control Services. "Power plants are discovering that tight integration between systems such as boilers and turbines can improve overall system operations and therefore, business results."

Honeywell's turbine control technology ties together process control and automation of plant subsystems and feeds the most relevant information directly to operators to help them make critical decisions in the control room. Combining these capabilities with Wood Group's expertise, the Honeywell Turbine Control System provides a single, unified platform to control boiler, turbine and balance-of-plant operations.

The turbine control system is based on Experion PKS, which integrates process control with advanced solutions and services in an open systems environment that increases efficiency, productivity, safety and security. High-speed Experion controllers along with high-speed servo valve positioner modules and speed sensor input modules meet the stringent requirement for fast response crucial for turbine control and protection systems. Redundancy features at the processor, power supply and communication levels, as well as the unique Fault Tolerant Ethernet (FTE) based network solution enhance system reliability and availability.

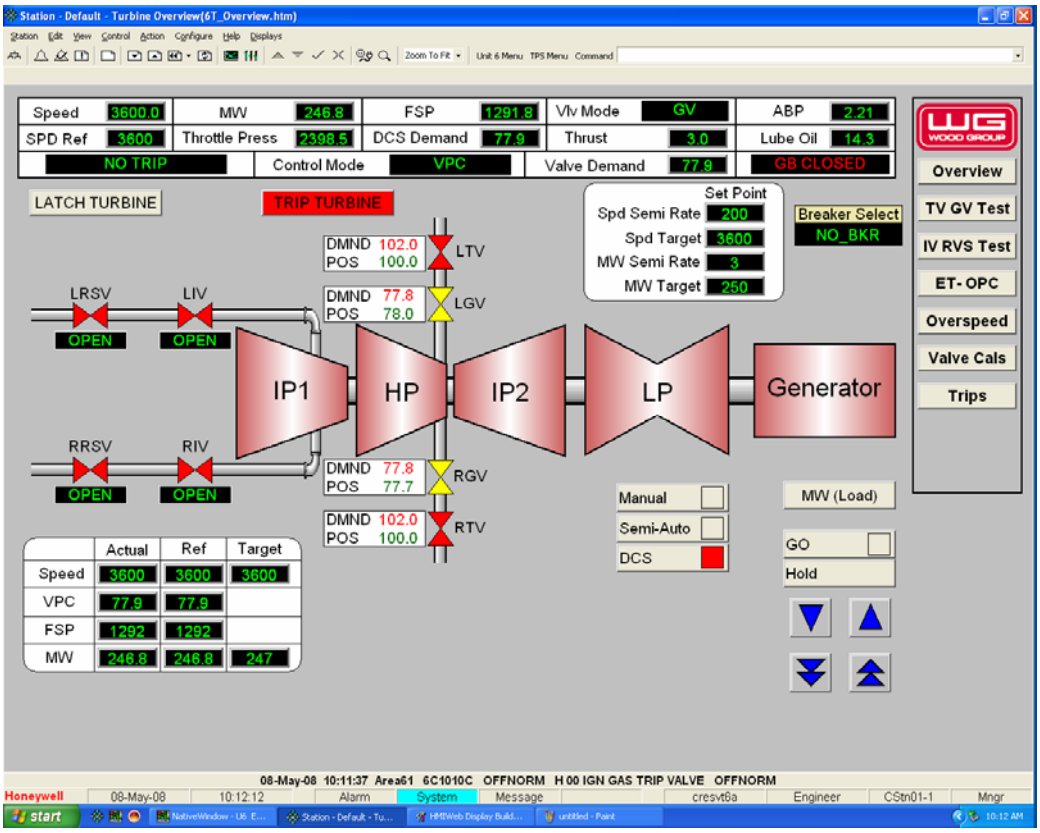
E.ON's Cane Run Station has been operational since 1954 and three of its six units have been retired. The three remaining units have a generating capacity of 618 MW. The number six unit is a Westinghouse turbine with a 260 MW capacity and was previously controlled by a compressor control system with a serial interface to a Honeywell APM cabinet. Honeywell replaced this controller with a new Experion controller to allow for easy integration and advanced process control.

The complete offering at E.ON has custom displays and faceplates with ease of monitoring and ease-of-use for operators, customized to the specific needs of the company.

Various turbine control functions are available with the Honeywell turbine control solution that spans two broad functional categories: turbine regulation and turbine protection. Apart from the standard requirement of steam/fuel valve lift control and electronic over speed protection, the following functionalities are part of the offering:

- Speed, pressure and load control mode of operation
- Initial pressure and limit pressure control mode
- Automatic turbine startup and shutdown sequence
- Turbine stress evaluator
- Online testing of valves and trip devices
- Load shading and unit islanding operation
- Frequency correction for generated load
- Automatic synchronization

"Honeywell's partnership with Wood Group Turbine Control Services enabled us to implement a turbine control solution that fit perfectly with our existing systems and enabled us to rely on our valued partner to help us along the way, when and how we needed it with only one support contract to worry about," concluded Crone.



More Information

For more information on Honeywell's turbine control solution, visit www.honeywell.com/ps or contact your Honeywell account manager.

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