

Emerson Smart Wireless Technology Used by BP Cherry Point and Naperville to Improve Process Equipment Monitoring and Availability

BENEFITS

- Emerson's Smart Wireless installation unit monitors bearing and calciner coke temperatures to help prevent fan and conveyor failure
- The 15-transmitter wireless installation in 2006, believed to be the world's first industrial wireless mesh network installation, continues to operate reliably



CHALLENGE

BP Cherry Point is a 225,000 bpd refinery, and is the largest supplier of calcined coke to the aluminum industry. One out of every six aluminum cans is made using BP Cherry Point's calcined coke. Fans can cost up to \$100,000 to repair but, more importantly, can be down for up to 10 days with associated production losses. BP Cherry Point wanted a way to monitor bearing and calciner coke temperature.

A second facility, BP Naperville R&D, is a world-class technology center including a modernized tank farm feeding an expanding number of pilot plants that develop processing technology options for BP refining worldwide.

SOLUTION

At Cherry Point, Emerson's Smart Wireless installation on the refinery's calciner unit monitors bearing and calciner coke temperatures to help prevent fan and conveyor failure.

The Naperville wireless network uses Rosemount® wireless transmitters to monitor suction, and discharge pressures, levels, flow, and temperatures. New wireless functions are installed as they become available, and emphasis is on collaboration with Emerson to expand the capabilities as rapidly as possible to cover refinery-wide applications. The real-world environment, in a pilot-scale operation, provides feedback to Emerson and hands-on experience for refinery management. Options for refinery process optimization and sharing of wireless automation technology are thereby shared globally by the Refining Technology team.

“The principal advantage we see around wireless is the ability to accumulate and analyze a much greater array of data than would otherwise be economically possible. Wireless enables us to get more data more efficiently, more economically than we ever have been able to in the past.”

Michael Ingraham
Technical Manager, BP Cherry Point Refinery

RESULTS

The 15-transmitter wireless installation in 2006 is believed to be the world's first industrial wireless mesh network installation, and continues to operate reliably while eliminating operator rounds in the field. Cherry Point has expanded wireless use to 35 transmitters including tank farm and utility applications, and installation of a Smart Wireless gateway in the diesel unit to make it ready for wireless notes.

Following the first application of Smart Wireless at BP's Cherry Point refinery, BP installed a 45-transmitter wireless network at the Naperville tank farm. Operational for about one year, this has provided strong operational experience and a platform for testing the technology, leading to significant take-up of wireless at other BP refineries throughout the world.

The wireless devices allow operators to be more efficient, collecting data from one central point as opposed to walking around the tank farm and recording all the values. The other advantage of the wireless devices is that they supply data continuously for recording in BP's historian, allowing them to see what is happening in the tank farm at any time of the day.

"Wireless is an important enabler for 'refinery of the future' technologies."

Mark Howard
Commercial Technology Manager, BP



Smart Wireless transmitter installation at BP tank farm.

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