

Refinery Improved Product Quality and Throughput with Smart Wireless

BENEFITS

- Improved product quality
- Minimized capital expenditure
- Increased plant throughput

CHALLENGE

This refinery was having problems with process upsets at the Crude Distillation Unit (CDU), resulting in off-spec product due to steam supply pressure fluctuations, and at times, steam supply failure.

The problem was caused by pressure dial gauges on steam lines at the compressor, which did not provide any real-time pressure monitoring. Additionally, being an old and congested refinery, it was difficult and costly to install new wiring due to space limitations in the marshalling cabinets, junction boxes, and I/O limitations in the legacy control system.

Absence of online steam pressure monitoring on the compressor had negative business impacts to the customer, which resulted in poor product quality and lower plant throughput. Also, the capital costs (CAPEX) for installing additional wired inputs to the legacy control system were high and acted as a barrier to solving the problem.

SOLUTION

Three pressure dial gauges on the compressor were replaced with Rosemount 3051S Wireless Pressure Transmitters, part of Emerson's Smart Wireless solutions. This allowed automatic monitoring of steam pressure. A Smart Wireless Gateway was also installed to complete the wireless network. Emerson's Smart Wireless field network installation effectively solved all the problems related to space congestion for new wiring, and eliminated higher CAPEX costs associated with a wired solution.

RESULTS

Improved field intelligence, facilitated by wireless online measurement of steam pressures on the compressor resulted in better control of the compressor operation. This stabilized the steam supply pressure to the crude unit product side steams, which resulted in improved product quality and increased plant throughput.

Emerson's Smart Wireless solutions allowed this customer to implement wireless steam pressure measurement points at minimal additional CAPEX in congested areas with wiring limitations.



This wireless high density temperature transmitter was centrally located, allowing for a reliable and low cost solution for the temperature measurement.



The Rosemount 3051S Wireless series of instrumentation.

For more information:
www.EmersonProcess.com/SmartWireless

