CASE STUDY • REFINING

REFINERY WIRELESSLY MONITORS JUNCTION BOX PRESSURE, ELIMINATING MANUAL CHECKS, IMPROVING MONITORING COVERAGE, AND PRESERVING WIRING INFRASTRUCTURE

Customer

Refining Company

Application

Monitor positive air pressure in Z-Purge Junction Boxes

Challenge

The refining company needed to continuously monitor the pressure in Z-Purge junction boxes around the refinery. These junction boxes are maintained at a low positive pressure to prevent process gasses from entering the junction boxes. These junction boxes are widely distributed throughout the plant. Previously these junction boxes were manually monitored by operators on periodic rounds in the refinery.

No instruments currently existed to monitor the junction box pressure. Limited wiring existed to instrument the junction boxes to add new instruments. In addition, wiring available was not always analog. Sometimes only digital inputs were available.

Lack of continuous monitoring meant refinery was not meeting their safety standards. Having operators take manual readings increased operations cost and exposed operators to hazardous areas in the plant. Using a wired solution would have used much of the available spare wiring infrastructure in the plant increasing cost and reducing spares available for future plant needs. Finally, the lack of consistent input type available at the different junction boxes would increase project cost as different types of solutions would have been needed..

Results

- Reduced Operations Cost
- Reduced Safety Risk
- Reduced Project Cost
- Reduced Infrastructure Used

The Rosemount™ 3051S Wireless Pressure Transmitter

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Solution

The problem was solved by monitoring the Z-Purge junction boxes with Rosemount™ 3051S Wireless Pressure Transmitters. Each Z-Purge junction box was monitored for proper pressure on a continuous basis. The wireless solution eliminated the need to use existing spare wire capacity to monitor the junction boxes. Finally, since no wires were needed, engineering didn't need to design multiple solutions to accommodate different wiring types, and operations and maintenance didn't need to run additional wires to areas with no spare wire capacity.

Operations costs were reduced and operator safety was improved by eliminating operator rounds to check junction box pressure. In addition, plant safety goals were met. Next, project costs were reduced since the 3051S wireless pressure transmitters could be used in every location, eliminating the cost of designing multiple solutions. Project costs were further reduced by eliminating the need to engineer the wiring connections associated with wired solutions. In addition, spare plant wiring infrastructure was preserved as no wires were needed to implement the solution. Finally, adding future wireless devices will save an estimated $5,000 per device compared to wired solutions.

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

The Rosemount™ 3051S Wireless Pressure Transmitter provided a solution that could be used everywhere without consuming limited spare wiring capacity.

For more information,visit
Emerson.com/RosemountProductPage

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