Fisher FIELDVUE® Instrument Avoids Shutdown and Saves a Refinery $300,000 USD

RESULTS

- Saved $300,000 USD by avoiding a shutdown and the resulting re-start time and costs
- With FIELDVUE® instruments on every critical valve, the hydrocracker unit has reduced its annual maintenance costs by about 5%.

APPLICATION

A Fisher® FIELDVUE DVC6000f Series (fieldbus) instrument was applied to a valve in a hydrocracker unit (HCU).

CUSTOMER

A gasoline refinery in Louisiana

CHALLENGE

In April 2005, this refinery began a major upgrade involving several processing units, a PlantWeb® with FOUNDATION fieldbus control system, and the installation of more than 1300 devices from Emerson Process Management. The plant produces gasoline and diesel fuel. Managers at the site were looking to increase productivity, improve process availability, and minimize maintenance.

After ten years of experience using FIELDVUE® digital valve controllers, the Maintenance Manager in particular had learned to value Emerson's predictive diagnostics technology. "To optimize plant control," he said, "I start by improving control valve performance. I've made sure that every critical valve has a FIELDVUE controller."

Along with modernizing their equipment, the maitenance team developed a better methodology and process for prioritizing and responding to maintenance concerns. The refinery's operators have increased their experience and appreciation for FIELDVUE instrument capabilities, including PlantWeb alerts. They review device alerts on a daily basis and respond to any valve performance concerns---before the problem becomes serious enough to affect production.

"With any other device, a travel sensor failure would have caused an upset or shutdown. The FIELDVUE instrument, however, detected and reported the problem, enabled a critical valve to maintain control, and avoided a costly process failure."

Maintenance Manager,

Louisiana Refinery

FISHER

For more information: www.fisher.com

EMERSON. Process Management

SOLUTION

For the site's most recent instrument upgrade, the valve maintenance team focused on the hydrocracker unit (HCU) in the middle of the plant. The HCU is the refinery's most critical unit and the most costly unit to shutdown or divert. The order for Fisher products included nearly 300 FIELDVUE DVC6000f (fieldbus) Series digital valve controllers, one for every valve in the HCU.

Using a gag and block arrangement, maintenance technicians added new digital valve controllers to existing Fisher® and non-Fisher valves via a hot or live cutover. In other words, they utilized the FIELDVUE instrument's pressure-control mode to act as a fieldbus-to-pneumatic converter.

One of the new FIELDVUE DVC6000f instruments, just 30 days old, proved its worth and helped justify the Maintenance Manager's faith in Fisher diagnostics and reliability. The instrument was added to a valve controlling seal oil on a compressor in the HCU. Somehow, the FIELDVUE unit itself was damaged, probably by a pipe or debris falling from a scaffold.

Because of the damage, the instrument lost its travel feedback, but automatically switched to Pressure Control mode (analogous to bypassing the positioner), and began acting as a fieldbus-to-pneumatic transducer. By preventing a shutdown, this single FIELDVUE digital valve controller saved the plant an estimated $300,000 in re-start time and costs.

"I've had a FIELDVUE instrument tell me (via Signal or Travel Deviation alerts) that its ability to perform was limited due to desiccant powder in its flapper nozzles."

Maintenance Manager,
Louisiana Refinery

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