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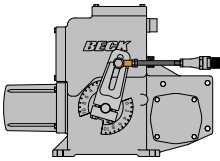
Electric Actuators for Industrial Process Control

Refinery Upgrades a Problematic Pneumatic Actuator with a Precision Electric Actuator on the Main Natural Gas Supply Line



California U.S.A.

One of the largest independent refiners in the U.S. experienced several costly failures on the plant's main natural gas supply valve. This valve was modulated by a pneumatic actuator that had an internal linkage failure, causing the valve to slam closed, consequently stopping natural gas flow to the refinery. Realizing that this problem could happen again, plant personnel replaced the pneumatic actuator with a more reliable precision electric actuator. A Beck 29E-609 linear actuator was chosen as the replacement.

Choosing the Beck actuator was an easy decision. Both engineering and maintenance personnel were already familiar with Beck actuators from a previous project. Months earlier, Beck rotary actuators were purchased to replace pneumatic actuators on the plant's waste gas boiler economizer damper applications. The excellent control performance and reliability obtained from the Beck rotary actuators simplified the decision for the linear gas valve application.

The Beck 29E-609 linear actuator was installed on the natural gas supply valve in May 2010. (Figure 1) Not only has this eliminated unplanned gas valve failures, but the actuator performance has greatly improved the overall gas header pressure control. The results have been so favorable, in fact, that plant personnel are now identifying and retrofitting other applications they believe will benefit from the reliability and tight control Beck actuators provide. In September 2010, a Beck 11E-209 rotary actuator was purchased for a hydrocracker compressor fluid coupling application. In the same year, a sister refinery followed suit and ordered nine actuators for catalytic reformer fan dampers.

Pneumatic actuators have long been used as the standard for modulating control in refineries and chemical plants. However, these projects demonstrate the importance of evaluating the Beck actuator for critical control applications. For this refinery, the investment in actuator reliability and positioning performance is paying dividends in eliminating process upsets and improving operational efficiencies.

Figure 1

Beck 29E-609 Linear Actuator modulating an 8" Fisher Globe Valve on a Natural Gas Supply Line [Hazardous Location Rated Class I Div 2]

BECK VIDEO Scan W/ Smartphone

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