

On-Site Specialist for Fisher™ Valves Reduces Costs for a New PDH Unit by \$600,000 USD

RESULTS

- Customized Fisher antisurge valves split a high-flow rate and protected the gas compressor
- Reduced material and labor costs by \$500,000 USD
- Improved valve monitoring and diagnostics saved up to \$100,000 USD in avoided maintenance



APPLICATION

Antisurge control for a propane dehydrogenation unit (PDH)

CUSTOMER

A polypropylene producer in Texas, USA

CHALLENGE

When completed, a new propane dehydrogenation unit (PDH) along the Texas Gulf Coast will produce up to 25,000 barrels per day (bpd) of polymer-grade polypropylene. The production process includes some critical- and severe-service applications for control valves. A projected flow rate of 380,000 pounds per hour could result in surge conditions and potentially damage one of the most important pieces of equipment in the facility—the gas compressor.

The customer's wish-list for this critical valve included fast-stroking and on-line monitoring capabilities. Noise could also be a problem. The valve would need to address noise abatement on the low end and yet enable high flow when it opens under surge conditions.

Because of Emerson's reputation for product quality and on-site support, the plant manager contacted the Local Business Partner, Puffer-Sweiven, for technical assistance.

SOLUTION

Initially, the plant manager and his engineering contractor thought that one giant valve could handle the high-flow demands. But, application experts from Emerson's flow laboratory in Marshalltown, Iowa, USA, recommended that they split the flow between two large Fisher EAT valves, size 42x48 inches.

Having a dedicated Fisher valve specialist on site simplified project planning, cut days off the original schedule, and enhanced safety and efficiency once the installation began.



When completed, the NPS 42x48 Fisher antisurge valve assembly produced in Marshalltown, Iowa, was 15 feet tall and nearly 15,000 pounds.

Puffer-Sweiven assigned an on-site manager to the project. Over several weeks, he formalized a plan to reduce material and labor costs while getting the valves installed safely and efficiently. The Fisher antisurge valve package he developed for this PDH unit was designed to address all the challenging application requirements. Each antisurge valve assembly features a drilled-hole cage for noise abatement; a 32-inch diameter port for the high-flow; and a FIELDVUE™ DVC6200 instrument with Optimized Digital Valve (ODV) diagnostics to monitor and report on the valves' performance.

The assemblies were tested to meet the strenuous FGS4L11 and FGS4L12 requirements for fast response. Though the plug weighs 2,000 pounds and travels 32 inches, the valve delivers a stroke time under two seconds on control and one second on a trip. No small feat!

Emerson's manufacturing personnel also produced two Fisher EA assemblies (30x36 and 20x30) and a NPS 24 EW for this project. They were able to utilize angle-body castings instead of the previously specified and more expensive fabricated body valves.

Delivered in September 2015, the large Fisher valves are providing quiet, accurate, fast-acting control for a critical process.

RESOURCES



Brochure: Fisher Valves and Antisurge Control
<http://www.documentation.emersonprocess.com/groups/public/documents/brochures/d351146x012.pdf>



Lifecycle Services Flyer: Diagnostic Services
<http://www.documentation.emersonprocess.com/groups/public/documents/brochures/d350976x012.pdf>

 <http://www.Facebook.com/FisherValves>

 <http://www.YouTube.com/user/FisherControlValve>

 <http://www.Twitter.com/FisherValves>

 <http://www.Linkedin.com/groups/Fisher-3941826>

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In addition to the quality of Fisher products, managers at this chemical plant praised the on-site service, application expertise, and project management support that got this new PDH unit running on-time and under budget.



A customized, drilled-hole cage (inside the body) provides noise abatement on the low end and yet enables the big valve to open under surge conditions.