

Flint Hills Resources-Port Arthur Breakthrough Turnaround

RESULTS

- Replaced 25 obsolete control valves with the Fisher® Best Match program
- Upgraded to low-e environmental packing
- Implemented in-line machining and repaired butt-weld valves to Fisher OEM specifications
- Upgraded and standardized on FIELDVUE™ DVC6200AD digital valve controllers
- Yielded zero delay rate with turnaround pre-planning and execution



APPLICATION

Olefin manufacturing plant producing Ethylene-Propylene

CUSTOMER

Flint Hills Resources - Port Arthur Chemical Plant in Port Arthur, Texas, USA

CHALLENGE

The control valves in the Olefins Unit are critical to the Port Arthur Chemical plant's performance. Historically, the site had instrumentation issues specifically related to their crack gas compressor anti-surge valve. Limited documentation on the unit's control valves meant a walk-down was required to confirm the "as-found" orientation and nameplate identification of the valves.

Upon completion of the walk-down data analysis, the NORM valves, obsolete valves, necessary field repairs, and long lead time items were identified for servicing. Additional discovery work on NPS 16 U-ball valves, a 16x30-inch valve, and butt welded steam valves added further service and logistics challenges to the schedule.

Flint Hills Resources wanted to complete the turnaround with minimal downtime and cost, while updating its process control equipment and improving future performance and diagnostic capabilities. They also wanted a single-point of contact for all field and depot repair work.

"The valve work scope was extensive, including in-line repairs, emergency replacements and upgrades, including low-e repacks. We found Scallon Controls, our Emerson LBP, to be very responsive to our needs during the execution phase. That made the project a success."

Clint George

Instrumentation Team Member, Center of Reliability Excellence



SOLUTION

Using the Six Step Outage Management Process, Emerson’s Instrument & Valve Services worked with Flint Hills Resources’ key personnel and lead contractor to develop a turnaround plan. Dedicated project leads carried out this process to provide the framework, structure, planning, and execution necessary to complete the work on schedule.

A complete walk-down of the Olefins Unit was conducted, including FlowScanner™ diagnostics on all valves. Pairing each asset’s tag information with its scans and “as-found” photos with orientation and noted obstructions were key elements in initiating an asset management program. This also helped identify obsolete products and valves with NORM potential that were slated for replacement using the Fisher Best Match program.

Instrument & Valve Services’ dedicated project manager tracked change orders against due dates for daily status reports to help manage technician resource scheduling. All machining was completed to Fisher OEM specifications using the latest specifications and drawings that only the local Instrument & Valve Service team has access to.

At the turnaround review, Flint Hills Resources received a comprehensive documentation packet consisting of updated serial cards, maintenance records with “as-found”/”as-left” photos, repair reports, specification sheets for each valve, recommended spare parts price lists, and a process condition analysis report. The FlowScanner valve diagnostics allowed for data-driven recommendations to be made for future turnaround planning.

The Olefins Unit upgrades to FIELDVUE DVC6200AD digital valve controllers provided improved control valve performance. The low-e packing upgrade provided the Port Arthur Chemical facility 100 ppmv leakage protection and low maintenance with an increased service life.

“A successful turnaround requires significant and detailed upfront planning. Scallon Controls worked as a site partner, in developing the valve repair and replacement work scopes. The thorough planning leading up to the turnaround, made for much smoother execution and minimized the surprises. We like to avoid turnaround surprises...”

Clint George
Instrumentation Team Member, Center of Reliability Excellence



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Emerson Process Management
Marshalltown, Iowa 50158 USA
Sorocaba, 18087 Brazil
Chatham, Kent ME4 4QZ UK
Dubai, United Arab Emirates
Singapore 128461 Singapore
www.Fisher.com

