

Service Technician Prevents a Unit Shutdown and Saves a Refinery Millions

RESULTS

- Avoided an olefins unit shutdown and downtime costs of up to \$1M USD per day
- Upgraded a feedstock valve's positioner to improve monitoring and reliability



APPLICATION

Hydrocarbon feedstock valve in an olefins unit

CUSTOMER

A refinery in Texas

CHALLENGE

If a control valve fails within an olefins unit, its safe repair requires a unit shutdown and re-start that may take days. For this reason, control valves in olefin units are considered critical assets and their reliability is a top priority for the site's maintenance team.

When operators at a refinery in Texas noticed sluggish response from a hydrocarbon feedstock valve, they knew it was in their best interest to address the issue quickly. The big NPS 36 Fisher™ 7600 valve had a 480 actuator and 3750 positioner. It needed to operate with minimal variability and provide precise control over a wide range of flow rates, from startup to full output. Unstable valve performance could upset trigger an unplanned outage as well as upset processes downstream.

The valve was slow to move to the desired set point, and its positioner had severe stiction issues. If the valve failed, it would take seven days to pull it out of line and make the repairs, plus another seven days to restart the unit. Anticipating lost production costs of up to \$1M per day, the refinery's maintenance team called Emerson personnel for help to improve the valve's reliability and avoid a shutdown.

SOLUTION

With technical support from Puffer-Sweiven and Lifecycle Services personnel, the refinery team decided on a valve upgrade.

The team ordered a FIELDVUE™ DVC6200 digital valve controller with Performance Diagnostics to replace the 3750 positioner. The new instrument would enable on-line, real-time monitoring of the valve's performance, and it could be installed via hot-cutover. Doing a hot-swap meant that the new DVC6200-PD had to be pre-calibrated on a

Managers of a critical-to-process olefins unit praised an Emerson service technician for his skill and timely response to an on-site, control valve issue.



different valve at the service facility in Pasadena before it was installed in the olefins unit. The big valve couldn't stroke more than 3%, but when it was returned to service, it had to be responsive and accurate.

When the new controller and parts were ready, an Emerson repair technician traveled to the site to conduct the valve upgrade. First, he replaced the actuator's o-rings and soft parts. Then, without taking the valve out of service, he removed the top casing and clamped the valve in place.

As the maintenance procedures continued, the unit began moving into a trip scenario – requiring the immediate use of the control valve. Unable to operate the valve remotely, the technician took hold of the hand wheel and spent the next eight hours manually controlling the valve while operators in the control room relayed its position needs via radio.

When the unit was stable again, the Emerson employee completed the hot-swap and returned the valve to fully automated operation.

In the right place, at the right time, and with the right skills, his actions avoided a unit shutdown and saved the refinery an estimated \$15M USD! The upgraded valve is providing faster and tighter control to set point. Its improved performance has made the olefins unit more efficient.

RESOURCES

Flyer: On-site Service Technicians (D352562X012)

<http://emr.sn/QL5w>



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

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

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

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