

Sinopec Tianjin Improves Control Valve Maintenance Efficiency Using Fisher™ Digital Valve Controllers and Diagnostics Software

RESULTS

- Reduced over-maintenance and under-maintenance through data-driven valve health assessment.
- Improved maintenance planning by identifying valves requiring offline repair earlier in the turnaround cycle.
- Reduced labor requirements compared with traditional control-room and field-coordination testing methods.
- Established a foundation for predictive, condition-based maintenance and long-term reliability improvement.



APPLICATION

Control valve diagnostics and maintenance optimization during refinery turnaround operations.

CUSTOMER

Sinopec Tianjin

CHALLENGE

During a planned turnaround of a 10 MTPA refinery, Sinopec Tianjin needed a more effective way to determine which control valves required offline maintenance, which positioners required PID tuning, and which assets could safely remain in service.

Traditionally, valve calibration and commissioning before plant startup relied on close coordination between an operator in the central control room and a technician in the field. This approach was labor-intensive, difficult to scale across a large installed base, and limited in its ability to provide diagnostic insight into valve condition.

Beyond meeting the turnaround schedule, the refinery faced a broader maintenance challenge: shifting from traditional breakdown and preventive maintenance practices to a predictive, precision-maintenance approach. Without valve health diagnostics, maintenance teams risked over-maintenance—removing and repairing valves unnecessarily—or under-maintenance, where valve issues remained unnoticed until startup or final commissioning checks.

“The real value of this project was not simply speed. By using Fisher ValveLink™ diagnostics, we could avoid both over-maintenance and under-maintenance, identify which valves truly needed offline repair, and complete the work with far fewer labor resources than traditional testing methods.”

Instrument Engineer, Sinopec Tianjin

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CHALLENGE (continued)

Sinopec Tianjin needed a data-driven method to evaluate valve condition, prioritize maintenance activities, and verify maintenance resources were focused on the assets that truly required attention.

SOLUTION

Sinopec Tianjin implemented a digital diagnostics approach using Fisher FIELDVUE™ DVC6200 digital valve controllers integrated with Fisher ValveLink Software, enabling a shift from manual inspection to data-driven maintenance.

The configuration of the digital valve controller was completed in just three days with one technician. By capitalizing on the shutdown and purging windows of the units, it was possible to successfully perform stroke tests on 1,280 valves and advance the valve calibration schedule. This enabled stroke testing and unit shutdown handover to progress nearly in parallel, securing additional time for valves requiring offline maintenance to be returned to the factory for repair.

This solution enabled plant operators to adjust maintenance strategies and achieve the following objectives:

- Identify which valves require maintenance
- Avoid both over-maintenance and under-maintenance
- Improve turnaround planning, allowing teams to prioritize offline repairs earlier in the schedule.
- Reduce labor compared with traditional control-panel and field-coordination methods
- Support condition-based maintenance using diagnostic data

By using valve health insights to prioritize work, the refinery improved maintenance decision-making and reduced turnaround risk. Fisher ValveLink software helps address key challenges in control valve maintenance management by providing actionable diagnostic insights that support more effective maintenance decisions.



A technician using Fisher ValveLink Software connected to a Fisher FIELDVUE DVC6200 digital valve controller to remotely test a control valve prior to a turnaround shutdown

RESOURCES

Fisher™ ValveLink™ Software
[Emerson.com/FisherValveLink](https://emerson.com/FisherValveLink)

**Fisher™ FIELDVUE™ DVC6200
Digital Valve Controller**
[Emerson.com/FisherDVC6200](https://emerson.com/FisherDVC6200)

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