

TPC Group achieves more reliable valve performance with AMS Device Manager

RESULTS

- Eliminated valve maintenance program costing over \$100,000
- Discovered multiple valve misconfigurations saving hundreds of thousands of dollars
- Identified persistent costly flaw in critical butterfly valve
- Improved plant safety, uptime, and overall reliability



APPLICATION

TPC Group wanted to implement a proactive valve maintenance program to prevent unexpected failures that would shut down operations.

CUSTOMER

TPC Group is a leader in providing highly specialized lines of chemical products to major chemical and petroleum-based companies worldwide. The Houston plant strives to be a dependable supplier of butadiene, butene-1, fuel products, isobutylene derivatives, and polyisobutylenes.

CHALLENGE

Monthly field checks were not catching all of the valve problems that TPC Group wanted to remedy. Because the checks were short and intermittent, small problems could occasionally slip through the cracks. The company had a mechanical integrity program to protect the most critical control valves, but the reliability team wanted to make sure that even the smallest problems were detected and remedied before they could become serious issues.

SOLUTION

TPC Group had previously purchased AMS Device Manager with the ValveLink SNAP-ON application, and had already installed the monitors necessary to keep close tabs on the hundreds of control valves it had in the field. However, the reliability team needed to fine-tune configuration to ensure the hardware and software would operate to its full potential. As part of a new reliability initiative, the process control team acquired management approval to fully configure and effectively implement the control system, entirely transforming how TPC Group managed plant assets.

The AMS Device Manager system was brought fully online in February of 2015. Almost immediately after the system was turned on, it flagged a problem: one bypass control on a boiler was stuck open at 52 percent. The valve had been operating with this misconfiguration

With AMS Device Manager, small problems are far less likely to interrupt operations, and TPC Group can maintain its high safety and environmental standards.

for nearly six weeks, costing the company tens of thousands of dollars. With the problem identified, it was simple to fix.

Early results from using AMS Device Manager and ValveLink led to further changes in the way TPC Group approached reliability. The process control team set up a temporary monitoring station with a remote AMS Device Manager client on the plant's anti-surge valves instead of bringing them into the shop as part of regular preventive maintenance. This change allowed the team to eliminate a program that cost more than \$100,000 whether problems were discovered or not. Using the remote client, the group discovered poor performance stemming from misconfiguration on a critical valve, a problem that was easily solved, saving hundreds of thousands of dollars in unnecessary surging and leakage.

Diagnostic data from AMS Device Manager has been invaluable to the control team. Previously, the technicians spent weeks trying to determine why a butterfly valve had been contributing to excessive missing off-gas, but could not find the problem. When the technicians examined the valve in AMS Device Manager, they discovered that it was 10 percent open, and was only getting 39 psi of air supply when it needed 58 psi. After a quick adjustment, the valve functioned as expected.

The AMS Device Manager database lets TPC Group maintain a collection of initial readings for all 193 installed valves, which can be used as a baseline when the team is diagnosing problems in the field. This baseline gives technicians the tools they need to determine if packing is too loose or too tight, or if air supply is dropping due to a defective diaphragm, simplifying and expediting device management in the field.

Most importantly, TPC's enhanced reliability program allows the organization to detect small problems before they become severe, enabling proactive maintenance planning. This increased flexibility allows for customization of maintenance schedules, restricting necessary repairs to times between production runs or during a planned outage. Moreover, technicians go into the field armed with knowledge of the problems they face, resulting in less time around functioning equipment, ultimately reducing incident rates. With help from AMS Device Manager, TPC Group is now staying ahead of critical failures, improving safety while simultaneously increasing production and reducing unexpected outages.

©2017, Emerson. All rights reserved.

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

Emerson
Reliability Solutions
12001 Technology Drive
Eden Prairie, MN 55344 USA

www.emerson.com/ams