



For **Severe Service** Control Solutions, Turn to Fisher Technology and Innovation

## WhisperFlo® REPLACES TORTUROUS-PATH TRIM, REDUCES NOISE, AND ELIMINATES VIBRATION AT A GAS PLANT IN SAUDI ARABIA

Back in 1996, gas plant personnel in Saudi Arabia were searching for the cause of a 12-inch crack in their 54-inch Acid Flare Header. The header pipe was nickel alloy and very costly to replace. The Header's equipment included solenoid-operated (on/off) valves and competitor control valves with torturous-path trim. Operators conducted vibration tests and made recommended changes in the valves' piping design and schematic. Damaging vibration continued, however, and more cracks developed in the piping and supports.

In early 2000, the gas plant team conducted another more comprehensive vibration test and used CFD (Computational Fluid Dynamics) software to simulate the overall process conditions. These tests revealed that the existing control valves—10X10, six-stage, balanced plug design—were inadequately sized for the application.

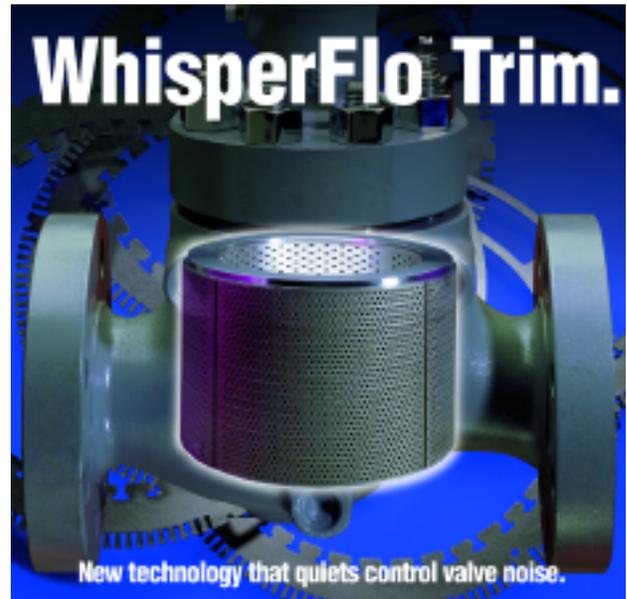
The customer invited the supplier to check the valve conditions and perform their own calculations. They also invited Fisher® personnel from the office of Saudi Fal's Control Division in Dubai to work on the problem.

Two Fisher engineers studied the process conditions and concluded that the existing (competitor's) valves were contributing to the excessive vibration and noise. The valves were actually generating velocities close to sonic—0.7 mach—noise levels within the valve and at its outlet. As a retrofit, the competitor wanted to add more stages, but calculations showed that that change alone would not improve performance.

After several visits to this remote site and consultations with members of the Severe Service group in Marshalltown (USA), Team Fisher recommended a larger replacement valve with WhisperFlo® trim that would meet all of the process conditions. (Calculations showed that velocities with WhisperFlo noise-abatement trim were 0.3 mach or less, when compared against the competitor's calculations.) The local service, technical expertise, and timely response provided by Fisher personnel enhanced the end-user's confidence in the Fisher package.

Ultimately, the customer's engineering team placed an order with Fisher for two 16-inch, Design EUT-2 control valves with WhisperFlo, Level Z Trim. They also wrote "Fisher only" on their standard Specification Sheets. (The competitor was given an equal chance to justify their product, but couldn't make it work.) Thus, Fisher displaced two competitor valves at this site.

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