



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

Control Valve Case History

Industry: Natural Gas

Application: Pressure Letdown

Overview:

This utility customer uses control valves to reduce the pressure from the transmission line to the local distribution pressures. In this situation, the customer has an existing district station that is running at near maximum flow rates that has resulted in higher than desired noise levels. The station is now surrounded by more residential homes than when it was initially installed. They were looking for a solution to reduce the noise, increase the capacity, and minimize the disruption to the operation while making changes.

For safety and reliability reasons, the piping is two parallel 8" lines with a working monitor setup in each line. The working valves are Fisher 8" 600RF ET Globe valves with EQ% trim. Noise levels at maximum flow are just below 110 dBA.

Process Conditions:

Clean Dry Natural Gas
P1 = 2500 to 2750 kPag
P2 = 1600 kPag
Flow = 100 to 180 E3M3.hr

Solution:

Spartan engineers inserted all the existing operating conditions into the Fisher sizing program to ensure they could replicate the current operating conditions. The flow capacity, % travel and noise level calculated corresponded to actual operating conditions.



The first choice was to consider a Whisper I cage that would retrofit into the existing valve. This cage has a 10% higher capacity and can reduce the noise level from standard trim by up to 20 dBA. It is typically used in applications of gas or steam letdown with pressure drops less than 60% of inlet pressure.

The customer is very pleased with this solution, as they are able to retrofit these cages into the existing valves, reduce the noise by almost 20 dbA, and pick up additional capacity in the valves. They were able to reuse the same actuators, and achieve ANSI Class IV shutoff. As well, they were able to retrofit these cages into all 4 valves in less than one day without interrupting the gas supply to their customers.



SPARTAN CONTROLS

CH1 Natural Gas Pressure Reduction WH1.doc

