



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

## HPT VALVE WITH Cavitrol® TRIM REDUCES CAVITATION AND IMPROVES CONTROL IN BOILER FEEDWATER APPLICATION

A co-generation power plant in Pittsburgh, California had two valves providing split-range control in a boiler feedwater drum level system. The smaller, low-flow valve had problems with erosion and cavitation. (Cavitation, the formation and subsequent collapse of vapor in liquid fluids, is a major source of valve damage and vibration.) Plant operators were replacing the valve's trim every six months at a cost of \$30,000 or more, not counting downtime.

Fortunately, the plant had an alliance agreement with Fisher®, and its Local Business Partner sent an engineer to the site to investigate and analyze the control and maintenance issues. In an effort to avoid a valve replacement, he added FIELDVUE® digital valve controllers to the existing valves and ran a series of diagnostic tests. Tuning the loop and modifying the control logic improved control, but the customer was still not satisfied with the existing valves' performance. The Local Business Partner concluded that one new Fisher valve could probably do the work of the two competitors' valves (and thus save the customer money).

The Fisher Severe Service team provided technical support for selecting and sizing the new replacement valve, a six-inch Design HPT with Cavitrol® III (four-stage) trim and ANSI Class V shut-off capabilities. Characterized Cavitrol trim stages the pressure drop by directing flow through successively larger flow areas and keeping the overall pressure drop above the vapor pressure. Cavitrol cages have specially-shaped holes, spaced diametrically around the cage circumference. These holes reduce fluid turbulence, dissipate fluid pressure, and help increase capacity.



The valve assembly included a FIELDVUE® DVC6020 instrument with Advanced Diagnostics capabilities. The instrument monitors the performance of this critical valve and provides data for its predictive maintenance.

The plant modified its piping to accommodate one valve instead of the split-range duo. The new Fisher valve was installed in November 2004 and has required no maintenance to date. Operators reportedly love the improved control it provides during startup and shutdown.

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Severe Service