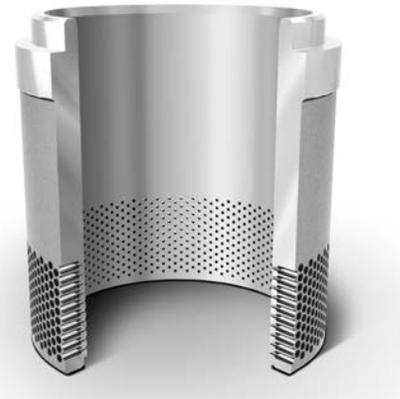


Fisher® EWT Valve with Cavitrol™ trim and FIELDVUE™ Diagnostics Proves to be the “Ultimate Solution” for Dearator Level Control.

RESULTS

- Saved \$100,000 USD by avoiding repairs and downtime on one valve
- Eliminated cavitation and the need for trim replacement
- Improved valve monitoring and plant reliability
- Saved an additional \$100,000 by avoiding unplanned downtime and visual inspections of up to 100 valves



Cavitrol™ III trim can effectively eliminate the damage caused by cavitation. The cage contains a multitude of specially shaped holes that help reduce fluid turbulence and facilitate flow from one restriction to another, a feature called pressure staging.

APPLICATION

Dearator Level Control

CUSTOMER

Power plant in Southeast Wisconsin, USA

CHALLENGE

This co-generation facility provides electricity and steam heat (in winter) to a large city. Because reliability is important, especially during periods of extreme cold or heat, the plant's managers have been investing in Emerson diagnostics technology to monitor critical valves.

Dearator level control, for example, is a demanding application that requires valves to handle high flows, high pressure drops (165 psid), and potentially damaging cavitation. The existing rotary valves had experienced control problems and needed trim replacements at least once a year. The annual maintenance bill for one of these valves was \$100,000: trim (\$20,000), eight hours of downtime (\$80,000), and labor (\$2,000).

SOLUTION

During an asset management upgrade at the site, engineers from Novaspect (Emerson's local business partner) analyzed the application. Selecting a control valve required an analysis of the change in pressure drop across the valve as a function of the unit load. They recommended a replacement Fisher valve with built-in protection against cavitation.

Plant managers ordered and installed a new Fisher® EWT sliding stem valve with a 585C actuator, two-stage Cavitrol™ III trim, ENVIRO-SEAL™ packing, and a FIELDVUE™ digital valve controller.

“We have learned over many years that Emerson diagnostics technology pays for itself through improved operation and cost avoidance. Fisher FIELDVUE digital valve controllers do improve the performance of control valves, resulting in longer life and greater reliability.”

Instruments & Controls Team Leader
Co-generation Power Plant

Wisconsin USA



FIELDVUE instruments provide online monitoring and Performance Diagnostic capabilities, which have proven their value over many years. Since the late 1990s, FIELDVUE instruments have been installed throughout the plant as a means of identifying potential valve problems before a costly failure can occur. Besides dearator level control, they monitor valves controlling desuperheater spraywater, boiler feedwater, turbine steam bypass, and the sootblower system.

In 2005, maintenance managers began using FIELDVUE instruments in combination with ValveLink™ software. The tools provide real-time performance data and alerts while the valves remain in operation. The monitoring system has reduced the need for visual checks and off-line valve inspections, saving countless hours.

RESULT

With built-in protection against cavitation and on-board monitoring capabilities, the Fisher high-capacity sliding stem valve providing dearator control has reduced annual maintenance costs by \$100,000 and improved this power plant's reliability.

The FIELDVUE instruments applied to dearator and other critical valves have simplified calibration, reduced variability, and improved boiler control—all of which contributes to more efficient steam production. Plant managers estimate that predictive maintenance, enabled by Emerson diagnostics, has cut 50 hours of unplanned downtime each year and reduced the need for annual, visual inspections of up to 100 critical valves. That's saved the plant another \$100,000 per year.



A FIELDVUE™ digital valve controller is used in combination with ValveLink™ software as a diagnostic tool to monitor control valve performance.

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