

Poland Power Plant Saves \$20K USD with Fisher™ V500 Control Valve that Combats Flashing Damage

RESULTS

- Upgraded the condensate control valve in this severe service application due to flashing, thereby reducing downtime and improving productivity
- Lower total cost of ownership and labor costs as the provided Emerson valve package solution is designed for performance-demanding applications, such as flashing, resulting in longer valve lifecycle.
- Improved operational performance as the Fisher™ V500 rotary control valve is packaged with a Fisher™ 2052 actuator, and Fisher™ FIELDVUE™ DVC6200 digital valve controllers, which help control closer to setpoint, extend operating life, and battle erosion.



APPLICATION

Combined cycle gas turbine power plant utilizing a control valve to regulate the flow of condensed steam back to the feedwater tank.

CUSTOMER

A combined cycle power plant in southwestern Poland with heat and electricity as the end products.

CHALLENGE

A condensate control valve is used by the customer to regulate the flow of condensed steam (condensate) back to the feed water tank. If there is a sudden pressure drop or an increase in temperature, flashing can occur. Flashing can cause damage to the valve, including erosion, cavitation, and other forms of wear. It is therefore important that the condensate control valve can resist damage with its versatile trim materials and durable valve design while also being able to maintain control of the pressure drop across the valve.

A power plant customer in Poland was struggling with the frequent replacement of competitor condensate control valve every 2-3 years, costing them around \$4K USD plus labour costs for every replacement.



Fisher™ V500 flanged rotary control valve with Fisher™ 2052 actuator and Fisher™ FIELDVUE™ DVC6200 digital valve controller installed to regulate condensate flow back to the feed water tank.

CHALLENGE (continued)

Customer struggled due to regular flashing, which in turn would repeatedly damage the installed non-Emerson control valve that controls the flow of the condensate to the feed water tank. This non-Emerson valve had to be replaced every 2-3 years due to degradation caused by the flashing. The estimated cost of every valve replacement is at around \$4K USD plus labor costs.

The end-user asked the Emerson team to provide a resilient valve solution that can last longer than 2-3 years and lower the total cost of ownership and maintenance costs.

SOLUTION

The Emerson team assessed the pain points of the customer and proposed the solution to install the Fisher™ V500 Eccentric Plug Valve with 2052 Actuator and Fisher™ FIELDVUE™ DVC6200 digital valve controller in Advanced Diagnostics tier. The V500 installed is in DN100 valve size with Trim 3 (cobalt alloy) and reverse flow. The valve was replaced during a regular 10-year main shutdown. The installed V500 valve has a condensate flow of 25 to 100 ton/hour inlet pressure of 5.5 to 7.8 bar gauge, and a pressure drop of only 1 bar, but the inlet pressure is close to the saturation point.

The V500 valve was dismantled and inspected after two years of operation. Upon assessment, no damage or wear was found.

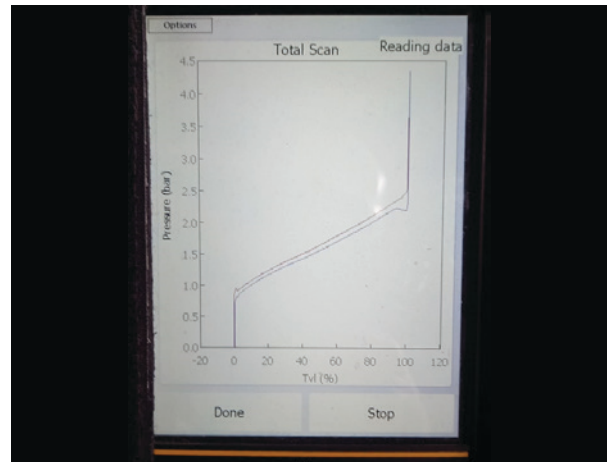


Fig. 1. Valve Signature curve for the new installed valve

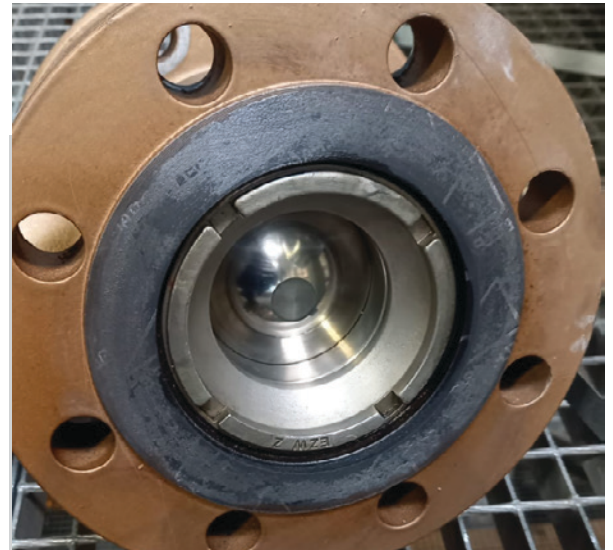


Fig. 2. Actual image of the V500 valve after two years of operation. As you can see in the image, there is no damage or wear found upon inspection.

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