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MIDWESTERN POWER PLANT USES CAV4 TRIM TO AVOID RECIRCULATION VALVE LEAKAGE PROBLEMS

A 525 MW power plant in the Midwest experienced repeated issues with leakage in two of its boiler feedpump recirculation valves. The leakage led to continual valve maintenance needs and created excessive feedpump horsepower requirements. Both situations had a negative impact on the power plant's output.

Plant personnel contacted their local Fisher business partner, NOVAspect, and asked them to take a look at the recirculation valve problem. After a thorough review of the installation, NOVAspect engineers proposed a solution that included field-proven CAV4 anti-cavitation trim from the Fisher Valve Division.

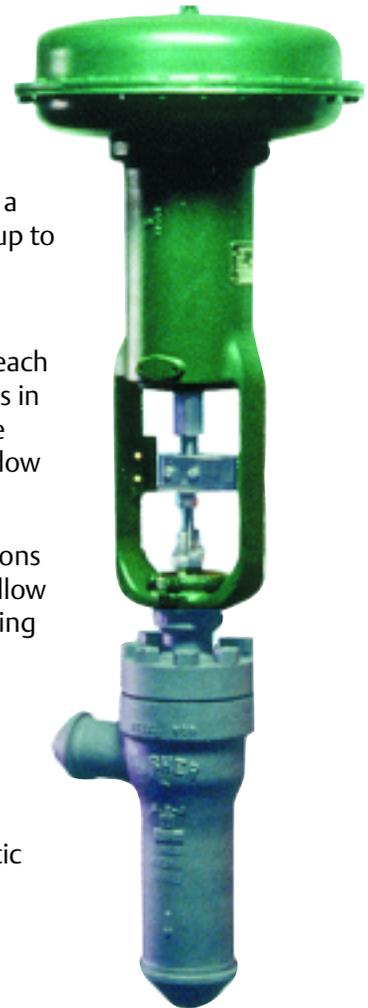
The CAV4 trim was designed specifically for feedpump recirculation applications. This solution incorporates four stages of anti-cavitation protection, a technique that prevents the formation of damaging cavitation at pressure drops up to 6000 psid.

A properly sized CAV4 valve prevents cavitation, and therefore the noise and vibration it causes, by directing flow through successively larger flow areas, with each causing a reduction in pressure. This "staging" of the overall pressure drop results in more than 90 percent of the total drop being taken in the first three stages where there is little danger of bubble formation. The last stage experiences a relatively low inlet pressure, and there is minimal fluid energy exiting the trim.

The pressure staging together with the separation of shutoff and throttling locations within the CAV4 trim prevent clearance-flow erosion. The trim design does not allow any significant pressure drop to be taken until the fluid is downstream of the seating surface. All clearance flow is subjected to a staged pressure drop. Unlike linear, cage-style anti-cavitation trim sets, there are no flowing conditions where pressure can go directly from P_1 to P_2 .

Since the installation of these valves, the plant has not experienced any issues with leakage through these valves or any need for maintenance. Based on the success of this solution, plant engineers are currently looking for other problematic valves to replace.

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