



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

DIRTY SERVICE TRIM ADDRESSES PLUGGED FEEDWATER VALVES

Several years ago, a 450-megawatt power plant in Michigan experienced repeated issues with plugged cages in its boiler feedwater valves. These valves utilized a small passage, anti-cavitation trim to address recirculation and startup needs. The valves would plug in a matter of months, however, usually providing less than three months of operation before the plugging would reduce capacity to the point of affecting plant operation.

This is a common problem in many older power plants that experience issues with debris in the feedwater lines. Most anti-cavitation trims rely upon small passages to eliminate the potential for cavitation. As in this example, these types of trim can serve as great “strainers.”

In order to address this issue, the plant turned to members of the Fisher Engineered Products group. Their solution incorporated large passages that allowed the entrained particulate to pass and also provided pressure staging to eliminate the formation of damaging cavitation. The Dirty Service Trim, commonly referred to as DST, has been used repeatedly in applications where plugging and reduced capacity are concerns.



The DST design uses combined axial and radial flow paths that feature large openings, allowing for the flow of particulate up to $\frac{3}{4}$ -inch in diameter. The large passages not only allow the particulate to pass, but also eliminate the potential for velocity-induced erosion effects.

The DST design also incorporates a protected seat that separates the shutoff and throttling locations. All significant pressure drop is, therefore, taken downstream of the seating surface. As a result, the seating surfaces are not worn away by throttling control action.

Since the trim has been installed in 1996, the valves have yet to be opened. No issues with either capacity reduction or leakage through the valves have occurred.

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