EROSOLVE WET STEAM

EroSolve trim fixes valve erosion from flashing at chemical plant

The challenge

A major chemical plant in South Korea was having to repair its boiler blowdown valves every year and carry out a full valve replacement every three years, due to high levels of erosion to the valves caused by flashing.

Flashing is common in boiler blowdown applications. It occurs when the pressure of a fluid passing through the valve is lower than its vapour pressure, causing the fluid to boil – this is what is known as 'flashing'. Flashing can both 'choke' the valve, reducing flow capacity through it, and can damage the valve itself through severe erosion. The client had carried out repairs to the valves for over a decade, and had become increasingly concerned about the safety of the valves. They turned to IMI Critical Engineering for a solution.

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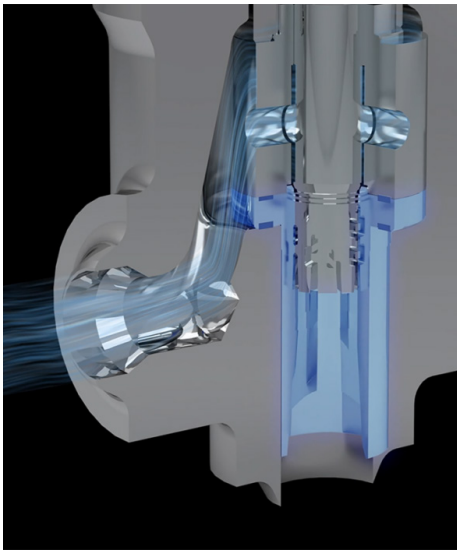
The solution



The client's boiler blowdown valves already had an angle-type body configuration, which is generally more effective at controlling flashing than a globe-type valve. However, when the IMI Critical Engineering team carried out a root cause analysis of the problems, they found that the valve trim had not been specified for flashing conditions. This meant that the seat and plug were experiencing severe erosion, which can create a real safety hazard.

The team recommended replacing the existing valve with an 860G-ESF complete angle valve, with IMI Critical Engineering's proprietary EroSolve trim, which is engineered to combat flashing. The customised valve trim uses hardened materials that are more resistant to erosion and IMI Critical Engineering's renowned DRAG® multi-path, multi-stage design to maintain seat tightness and move the flashing point away from the seating area of the trim. The trim increases resistance to erosion, reducing maintenance time and costs, improving safety, and extending valve life significantly.

The client is expected to make a substantial commercial gain from the switch. As the replacement valve has a life of 2-4 times longer than the previous valve, the total cost of ownership of the valves should be around 40% lower per year.

For more information on how our team can help you, contact your local IMI Critical Engineering sales team.

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