

# CCPP installs EroSolve trim to prevent erosion from flashing

## The challenge

A South Korean CCPP began to experience erosion due to flashing in four blowdown valves in the plant's heat recovery steam generators after the plant had been operating for just two years. The degree of erosion meant the client was experiencing erosion to the seat and disk stack as well as the outlet piping.

Flashing is a common problem in steam applications. Flashing occurs when the pressure of a fluid passing through the valve is lower than its vapour pressure, causing the fluid to boil. Flashing can cause severe damage to the valve through erosion. As this erosion can put safety at risk, the client was keen to find a solution and turned to IMI Critical Engineering for an answer.

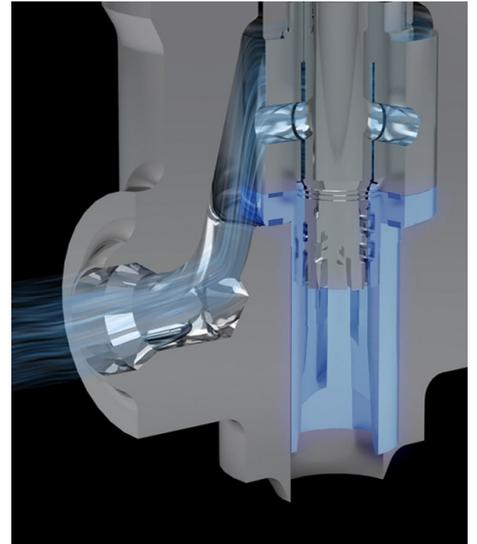


## The solution

IMI Critical Engineering carried out a root cause analysis to determine the operating conditions in the plant. This revealed a water-steam mix of over 45%, which was causing severe flashing and erosion of the angle-type 100D valves used in the application. The damage was concentrated in the plug-seat contact area and the end of the seat sleeve, with additional damage to piping connected to the valve outlet.

The IMI Critical Engineering team proposed replacing the 100D DRAG® valves with its 860G-ESF bare stem valve with flashing trim. This included a special plug and seat design to move the flashing point away from the plug and seat. In addition, the new plug and seat were manufactured in 440C stainless steel, a very hard steel alloy that is resistant to erosion. The valve body was also upgraded to a more resistant material, SA217 WC9, and periodic inspections were recommended to ensure the valve remained in good operating condition.

As well as resolving safety concerns for the client, they expect to see commercial benefits with reduced maintenance and a lower operational and total cost of ownership over the valve lifecycle.



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