



Engineering
GREAT Solutions

Extended life trim upgrade reduces wet steam erosion

The challenge

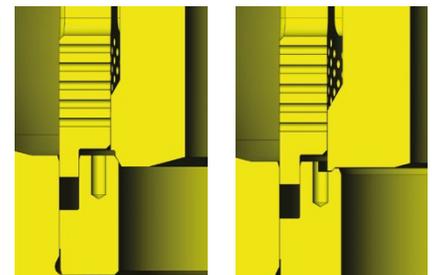
When a power plant located in India was having problems with leakage and erosion in their turbine bypass lines, the plant personnel contacted IMI CCI to assist them with the issue. IMI CCI had originally supplied the Sulzer technology HP and LP bypass valves about half a decade ago, but the customer was facing trim erosion issues with shortened operational life. The continuous leakage was affecting plant efficiency and required intermediate shutdowns leading to loss in production. IMI CCI engineers visited the plant to review the installations and the piping isometrics, discovering insufficient drains in the system leading to creation of wet steam conditions. Wet steam can be highly erosive to pipe and valve systems through a combination of high velocity water droplet impingement, as well as flashing in the valve trims.

The plant was also throttling the valves at low strokes, which combined with wet steam conditions led to trim erosion and leakage in the valves. The customer ruled out adding drains to the piping layout due to the significant costs due to recertification by the Indian Boiler Regulation.

The solution

The IMI CCI team suggested the tried-and-tested extended life trim upgrade package as a solution to reduce erosion and prolong trim life. The extended life trims are available across BTG and IMI Bopp & Reuther product lines as well as technology acquired from Sulzer and are designed to resist wet steam erosion. The upgrade offers a redesigned seating area with protection for the plug and seat to ensure the seating surfaces no longer face direct flow jet impingement. Further, the IMI CCI team worked with the customer's engineers to

suggest modifications to operational philosophy to reduce risk of erosion while taking care not to impact the plant efficiency. This solution will reduce efficiency losses together with ramping down financial losses related to unscheduled maintenance. IMI CCI's installation guidelines are a great resource which details optimal piping layout and operational philosophy for valve operation.



Original construction (left) and new construction (right)

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