



IMI CCI wins replacement of competitor's turbine bypass valves in Middle East power plant

*Engineering
GREAT Solutions*



The challenge

A power plant in the Middle East required a replacement of its competitor installed valves in a high pressure turbine bypass application which had severe erosion and cracking problems. Not only were the valves severely eroded, but a faulty bypass control feedback signal was causing high steam temperature in the valve outlet which was tripping the unit. The customer was looking for a reliable solution that would improve process controllability and eliminate plant trips. Reducing the maintenance and shutdown period of the plant would enable the customer to meet their contract deliverables to their own customer and maximise their profits.

The solution

The IMI CCI team already had an excellent on-going aftermarket relationship and the IMI CCI pressure desuperheating valves that were installed elsewhere in the plant were performing well for the customer. The confidence in IMI CCI's solutions and the trust that had built up over many years meant the team was able to work closely with the customer from the start of the replacement process. Engineers and Valve Doctors® visited the plant to fully understand the issues and gather data and information about the existing installation, previous problems and the operation of the valves.

The Valve Doctors® identified that the problems with the competitor's existing valve were due to wet steam and thermal

stress during plant start-ups. Poor desuperheating of steam due to high rangeability requirements was another major factor associated with the failure of the existing valves. The final valve replacement solution recommended to the customer incorporated a diffuser to reduce the valve outlet from 64 inch to 44 inch, a special internal trim design with a quick change feature to handle wet steam and a special desuperheating system with steam assist nozzles for low flow conditions and a standard nozzle for normal flow conditions.

This overall system solution offered by the team delivered the reliability required by the customer, with the other features helping to reduce outage time and maintenance costs.

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