## **SC-3PC Chosen for HP Turbine**

## Bypass Attemperator Block Valve

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Plant type: Subcritical

**Location:** Spraywater Block Valve for HP Turbine Bypass Valve

Attemperator. HP turbine bypass line off of main steam line

going into the cold reheat line

Media: Boiler Feedwater

 Temperature:
 370°F

 Pressure:
 3000 psig

 Size:
 4 x 2 inch

Class: ASME 1500 Class

Materials: Ball / Seat – 410 SS / HVOF Chromium Carbide

Inner Stem Seal - 410 SS

Body - F22

Operator: Morin Pneumatic

Application: Isolation service in and around the turbine and its bypass

lines is critical to the operation of the plant. This particular bypass line is used during start-up to bypass the HP turbine during the warm-up process. More importantly, it is used again in the case of an emergency turbine trip — recirculating the main steam into the cold reheat line, enabling the boiler to stay up and running during turbine

repairs.

Working in tandem, the isolation valve, control valve and attemperators are fed boiler feedwater that is used to drop the pressure and temperature of the incoming main steam before it enters the cold reheat line — critical to protect the piping. A previously installed globe type valve was used in the place of the isolation valve. The valve leaked through the seat which allowed boiler feedwater to pass through the control valve and into the cold reheat line, subsequently reducing the unit heat rate and causing a damaging water hammer upon start-up.

The MOGAS SC-3PC, a three-piece valve assembly, proved to be an excellent choice for this application. It is critical that the isolation valve provide a tight seal during online operation to avoid leaking boiler feedwater through the control valve. The SC-3PC offered an attemperator block valve with zero leakage, inline repairability and at a price comparable to replacement costs



The MOGAS SC-3PC was chosen to replace a leaking globe type valve on a HP turbine bypass line. The isolation valve must seal during online operation to avoid leaking boiler feedwater through the control valve.