

ValvTechnologies Specialties

Tandem Double Ball Valve



Customer: Major Global HRSG OEM
Location: Europe
Plant type: Combined Cycle - Natural Gas (CCNG)
Industry: Power
Application: O-C-I (Open-Closed-Intermediate)/Mid-Point Flow (Inching)

Background: O-C-I/mid-point flow (inching) valves in CCNG power plants function primarily during power plant start-ups. This specific inching requirement is for the steam line condensate drain valve application. As the plant is starting up, the valves move into a "mid-point flow" position, mid meaning interim, not actual 50% position. Once the plant reaches the required temperatures/pressures, the valves continue the process in operating first in the modulating position all the way through to that of isolation/closed position.

Requirement: This application is well-known as problematic for most valve types. The mid-point flow position is hard on valves designed for isolation and those designed to modulate doesn't provide 100% shut-off during close. With the valve seats being exposed in the partial open position, the media flow can cause severe damage, prohibiting the valve from achieving a meaningful shut-off rate when moved to the closed position. The customer needed to resolve the damage resulting from the paradox of the valve being used as both the modulator and the isolator.

Compounding the issue was that modern-day combined cycle plants are designed with frequent and daily start-ups in mind vs. those that have operated as base loaded. Frequent and daily start-ups tend to complicate the process, as they add excessive wear and tear to the internal components. This application was exposed to:

Number of plant start-ups per year:	
Cold (over 64 hr. shutdown)	10
Warm (16 up to 64 hr. shutdown)	50
Hot (up to 16 hr. shutdown)	200

Solution: Working alongside of our VTIS team, ValvTechnologies determined our tandem double ball valve was the best solution. The HRSG OEM customer identified ValvTechnologies' tandem double ball valve to be the best solution. It meets the demand of the inching process and accommodates the critical need requirement of maintaining 100% positive shut-off, despite the rigorous activity endured during continual start-ups.

ValvTechnologies engineered design solution: double ball valve in tandem	
Product Line Type	V1-1
Valve NPS	2"
ANSI CLASS	900#
Port	FP
Bore size	1.5"
End connection:	Socket weld
Body material	F22 material
Actuator type	Pneumatic
Special notes: Downstream valve (to be used as the Modulator) has 4-20mA positioner on the fail close actuator	
Upstream valve (to be used as the isolator) has just fail close actuator	

Isolator maintains
100% positive shut-
off, despite rigorous
activity endured
during continual
start-ups

For more information,
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