



Case Study

Emergency Shutdown Valves

Severe Service Isolation Valve Solutions

Industry: Oil and gas
Plant type: Natural gas processing
Application: Emergency shutdown (ESD) valves on de-ethanizer reboilers
Location: Dallas, West Virginia
Product: V1-2

Overview: This project was a new project build; the plant never had a valve in this application - (ESD) valves on de-ethanizer reboilers - at this site. These severe service applications require three separate actuated valves: two 12" 300# ASME/ANSI class valves for the hot oil application (Therminol 55) to the de-ethanizer and one 8" 300# ASME/ANSI class valve for the hot oil to the amine still. ValvTechnologies and Portersville PRD are the trusted advisors and preferred suppliers of the industry-leading high-performance, zero-leakage isolation valves in critical applications for the engineering firm completing the design: the firm knew they could count on the superior expertise and global experience of ValvTechnologies and Portersville PRD.

Requirement: The customer required a metal seated, zero-leakage valve with design temperature rating to 575°F and closing speed of 30 seconds. Additionally, the plant required a competitive price and quick delivery for a reliable automated ball valve package.

Solution: ValvTechnologies supplied two 12" 300# Class valves for the hot oil (Therminol 55) to the de-ethanizer and one 8" 300# Class valve for the hot oil to the amine still. Benefits to the customer include:

- Through conduit design: No tortuous flow path. When open it has the highest possible Cv's. Minimized wear and tear resulting in eliminating vibration and reduced maintenance.
- Fixed position – quarter turn: No seating torques required resulting in minimized stem wear and lower cost of ownership.
- Hardened blowout proof stem: One piece, inserted through the body and shouldered. This eliminates the weak link of collared and pinned designs for increased plant safety.
- Metallic body seal ring: Increases body integrity by eliminating external leakage resulting in improved reliability and zero-leakage shutoff.
- Live-loaded packing gland: Minimum four bolt configuration with shallow stuffing box. This ensures consistent torque at variable pressures and temperatures or increased reliability.
- Hardcoated and mate lapped seats: High Velocity Oxygen Fuel (HVOF) RiTech® chrome carbide hardcoating with a Rockwell C of up to 72 with mate-lapped seats, making the valve wear and corrosion resistant, increasing reliability, and providing zero-leakage shutoff.
- Seat designs: Hardcoated, both ball and integral downstream seat to the end-cap to eliminate a potential leak path for increased reliability.
- Designed for ease of installation and maintenance, this valve is easily actuated, increases system reliability and efficiencies, is easy to operate and reduces maintenance time and cost
- Every valve is tested, documented and serialized for increased reliability, safety and total traceability.

Result:

ValvTechnologies and Portersville PRD together engineered turnkey automated ESD valve solutions that exceeded the expectations: with high safety factors, the customer has confidence in the event of an emergency that these systems will now safely be disabled to prevent potential catastrophic plant damage.