

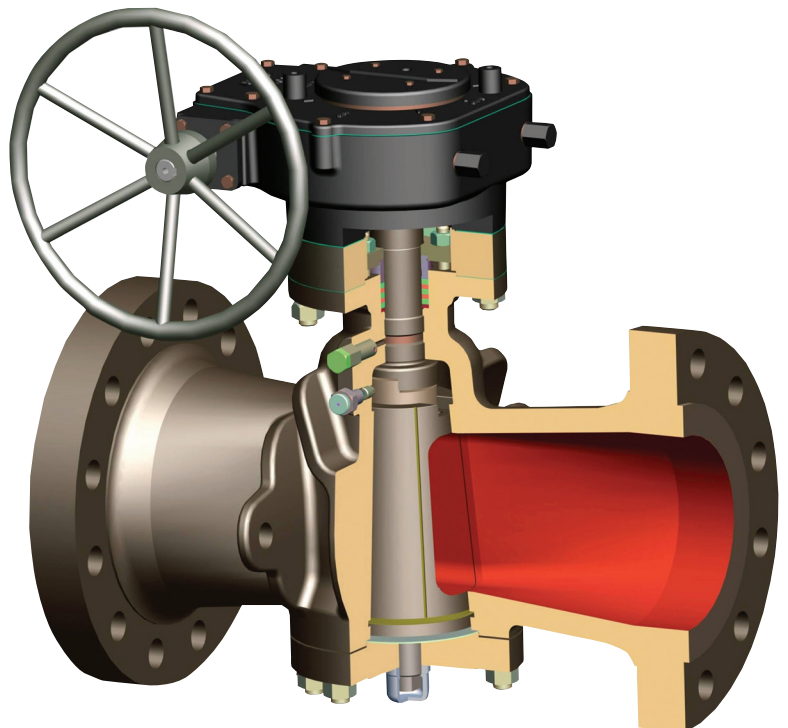
Reduced Downtime and Maintenance Costs in Sandy Upstream Conditions With Serck Audco™ Plug Valves

Abstract

Lubricated plug valves are a proven solution in high-pressure gas blowdown applications as well for drain and gas manifolds in natural gas and oil fields and pipelines. The design of plug valves provides a reliable, bubble-tight seal and enables plant operators and maintenance supervisors to avoid downtime while reducing parts inventory and maintenance costs.

Challenge

At a field operated by a Middle Eastern natural gas and petroleum company, API 602 gate valves in drain and gas blowdown lines experienced frequent failures. Gate valves are a well-established technology and appropriate for a broad range of industrial applications, including high temperatures and pressures, corrosive media along with lethal, toxic and sub-zero fluids. However, after some period of operation in harsh field conditions, the valves could not close properly because debris and sand from the wells routinely would settle in the wedge of the gate valves. The field operator's solution: purchase and stock replacement valves and frequently send maintenance teams to shut down operations to swap out the valves. As costs escalated, field managers asked their equipment consultant to recommend valve solution options.





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Solution

A casual conversation between a pipeline engineer for the equipment consultant and Flowserve representatives led to Flowserve suggesting the field operator replace the failing gate valves with Serck Audco Super-H lubricated plug valves from Flowserve. The design of plug valves prevents debris carried from a production well from blocking and closing the valve. Nevertheless, the field operator was reluctant to change their valve technology, but did agree to purchase a small number of plug valves and install them in a pilot project.

Results

In one test site, the Serck Audco Super-H plug valves from Flowserve outperformed the existing gate valves supplied by a competitor in terms of reliability. Sand and other well debris did not prevent the plug valves from closing. As a result, operational uptime improved immediately. Based on that successful test result, the field operator purchased plug valves to replace all the gate valves in sizes from 1 to 4 inches throughout the field and natural gas gathering facility.



Conclusion

The reliability of plug valves for applications in the harshest environments compared to gate valves has been demonstrated in some of the most demanding upstream operating conditions. In upstream applications for gas fields and natural gas gathering, petroleum companies confidently can invest in lubricated plug valves instead of conventional gate valves in the following applications:

- Bleed valves in double block and bleed applications
- Gas gathering manifolds
- Gas modular skids
- Glass blowdown lines
- Off-plot, tie-in facilities skids
- Remote header lines

Serck Audco Super-H plug valves from Flowserve provide greater process control because their design ensures that complete tightness is achieved while maintaining smooth valve operation. The design also prevents sand and other well debris from obstructing closure of the plug valves.



In addition, Serck Audco Super-H plug valves are known for reliable sealing and extended service life in severe environments. Their metal-seated design stands up to high-velocity or abrasive fluids that can damage non-metallic valve seats prematurely and cause leakage that severely impacts process integrity and safety. Additionally, their quarter-turn design enables faster cycling times and simplifies automation.

Installing plug valves can result in significant savings of costs for valve procurement, stock inventory and maintenance and well as lost production during downtime.

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