

Trio of Inconel® Valves Resist H₂S Corrosion, Supply Feed Gas to LNG Trains



RESULTS

- Custom trim reduces noise, eliminates emissions, and supports the high C_v.
- FIELDVUE® instrument improves valve monitoring and enables diagnostics.



This photo of Inconel valve #1 was taken during its final inspection. Manufacturing personnel in Cernay, France, produced three of these super-large assemblies, which were a challenge to machine, transport, and test.

APPLICATION

Main feed valves.

CUSTOMER

LNG processing plant in Qatar

CHALLENGE

Corrosion is a serious concern for the main feed valves at an Liquefied Natural Gas (LNG) processing unit. Installed upstream, the valves control the flow of “raw” gas into the plant and that raw gas contains hydrogen sulfide (H₂S), an acid which leads to the stress cracking, blistering, and corrosion of metal surfaces.

Amid this corrosive application, the valves must be reliable. In the event of an unexpected shutdown, the valves will have to close quickly and — if they don't, the LNG plant and all downstream processing may go off-line.



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SOLUTION

When asked to supply valves for this critical application, Emerson Process Management design engineers recommended that the valves' body and trim be made of Inconel, a corrosion-resistant, nickel-based alloy. Emerson received a multi-million-dollar order for a trio of Fisher® 20-inch, 900#, Design EWT valves and accessories including characterized Whisper® III cages, TFE ENVIRO-SEAL® packing, and FIELDVUE® DVC6020F (fieldbus) digital valve controllers. These custom features will enable the valves to minimize noise, to eliminate fugitive emissions, to support the high Cv, and to provide monitoring data about their own performance. The valves' two-second stroking speed is also critical to their reliable, safe performance.

This project was won with international teamwork and input from multiple Emerson sites and divisions. Sales team members in France worked with Engineered Products' personnel in the United States and Dubai to design and specify these valves. Emerson personnel in the Middle East and Asia Pacific will provide field support during commissioning and installation.

RESULTS

These Inconel valves are a small part of what has become Emerson's largest valves project to date. Over a two-year period, Emerson delivered more than 1000 Fisher® control valves to an LNG complex in Qatar and 250 of them were 16-inches or larger. The technical expertise and collaboration between six Fisher-product manufacturing sites and seven major foundries around the world enabled Team Emerson to achieve an on-time performance score of 98% for this project.

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