

Severe Service Journal

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LARGE V260 BALL VALVE BOUND FOR DEEP WATER PLATFORM

One of the world's largest oil producers plans to spend \$15 billion over the next ten years developing vast deep-water oil reserves in the Gulf of Mexico. With four decades of success in the region, Fisher Controls International LLC and its Texas-based sales representative office, Puffer-Sweiven, will supply equipment and services for four new oil-production platforms in the area.

The deep-water project includes \$8M worth of control valves. The first and largest of these platforms will utilize a 24-inch Design V260 ball valve made of AVESTA 254 SMO super-austenetic stainless steel. Designed and built to resist corrosion in seawater service, this V260 will be the largest valve of its kind produced to date. It incorporates a dual Hydrodome™ attenuator to provide two-stage pressure reduction as protection against excessive operating noise and vibration.

Called a seawater recycle valve, the Design V260 will be applied in a 30-inch line within the lift pump area of the platform.

While operating temperatures and pressures will be low, the valve is expected to control an estimated 736,000 barrels of seawater every day.

A FIELDVUE® Digital Valve Controller, AD (advanced diagnostic) version, will monitor the performance of this critical valve and provide data for its predictive maintenance.

This valve has been in service for several years.



FISHER® FEEDPUMP REGULATING VALVE ELIMINATES CAVITATION AT WE ENERGIES' POWER PLANT

We Energies® operates the Pleasant Prairie Power Plant (P4) in Wisconsin with a large number of competitor's valves, some of which were failing. One of the problem valves was a discharge regulating valve applied on a motor-driven boiler feed pump. The valve and pump were primarily used for unit startups to fill the boiler drum. Flow-induced cavitation occurred and contributed to excessive noise and trim erosion. After one or two startups, the valve would leak. P4 maintenance personnel conducted numerous repairs on the valve. Plant Engineering personnel decided it was time to replace the original valve, due to high operation and maintenance costs.

P4 Engineering, Novaspect, and Fisher Severe Service engineers conducted an extensive review of operating and design requirements for this severe service application. From the process data collected, they calculated that a max Cv of 144 was required for 100% pump capacity. The valve would have to address inlet pressure up to 3000 psig, outlet pressure as low as 56 psig, as well as the potential for vibration and noise.

The Fisher team recommended an 8x6 globe-style, Type HPT valve with a steel body and stainless steel plug and seat. The valve's contoured plug design directs the exiting (final stage) fluid away from seating surfaces, maintaining tight shutoff and reducing trim erosion. The ANSI class 1500 valve has butt weld end connections, Class V shut-off, and a Max Cv of 190.

Fisher also has a variety of control-valve trim and accessories specifically designed for power-plant challenges. Multi-stage Cavitrol® III trim features patented, drilled-hole technology, staging the pressure drop across the valve and eliminating cavitation. P4 personnel retrieved the FIELDVUE® digital valve controller from the leaking valve and added it to the new Fisher valve. The DVC6000 instrument with Performance Diagnostics (PD) capabilities enables them to monitor valve performance on-line.

ENVIRO-SEAL® live-loaded packing reduces required maintenance by eliminating packing leaks. And finally, a size 100, Type 585C double-acting piston actuator provides more than 10,000 pounds of thrust.

The new valve, installed in March 2004, has improved control, eliminated cavitation, and significantly reduced maintenance costs. Michael Wiesneth, a Senior Engineer at P4, said, "After a review of numerous competitor valve designs, we selected a Fisher severe service valve with multi-stage trim as a replacement. This new valve has experienced numerous startups without leaking and has received many positive comments from We Energies' P4 operators".



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