Custom Test for a Combined-Cycle Plant Proves the Value of Open-in-Sequence Valve System Design

RESULTS

- Verified system set-up of multiple components in a factory setting
- Worked with multiple groups and complex technical issues for a first-of-its-kind, valve series test
- Proved the design for an unusual multi-valve, steam conditioning system
- Cut weeks from a new unit startup schedule

APPLICATION

Valves for spray water isolation and turbine bypass service

CUSTOMER

New combined-cycle power plant in South Carolina, USA

CHALLENGE

Emerson's willingness and ability to solve problems extends to testing unusual control valve systems—especially when the request comes from a major US power producer. One of the producer's steam stations in South Carolina was planning to startup a new, combined-cycle plant by December of the following year.

The producer and its engineering contractor contacted Emerson's local business partner, R. E. Mason Company in Charlotte, about conducting a first-of-its-kind test for the facility's turbine bypass system. The test they proposed was unusual because a series of Fisher™ valves—specifically TBX, easy-e™ HP (high pressure), and Z500 designs—needed to stroke at the same time. Applied in turbine bypass, spray water isolation, and spray water control systems, the valves would open simultaneously in the event of a full load rejection or turbine trip. The station's principal engineer, who designed the valve system, shared the plans to build it at the Emerson Innovation Center in Marshalltown, Iowa, USA.

SOLUTION

Emerson personnel from two states provided technical support for this "never been done before" project, as well as a plan for how the valves would work with the steam station's Ovation™ control system.

"The Fisher valves and technical resources provided for our steam station project demonstrate Emerson's commitment to problem solving, innovation, and customer service."

Principal Engineer
Steam Station

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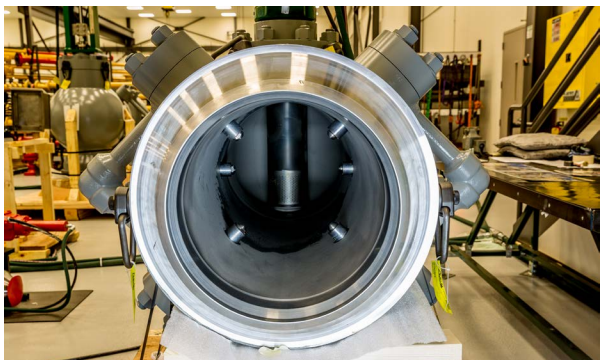
Emerson's Test & Evaluation group cleared a 30x30 foot section of floor space in the Emerson Innovation Center and spent a week on the custom test set-up. Experienced Fisher valve assemblers from the Governor Road manufacturing plant provided support for the piping and cable connections. The team also set up monitoring systems whereby the customer could witness and record the valves' performance.

In mid-June, nearly two dozen people arrived on site to observe the Factory Acceptance Test (FAT). The visitors included project and engineering managers from the power producer and its engineering contractor, as well as Emerson product and industry experts, project managers, and members of the steam team. The tests went well, the valves stroked in unison, and the attendees were pleased with the results.

The steam-conditioning and actuation solution demonstrated that day could become a game changing technology for the power industry at large. It has been installed and is working well at the steam station. The power producer plans to duplicate the customized valve system at another facility.



RESOURCES

Brochure: Fisher Z500 Severe Service Ball Valves
http://emr.sn/gO4c

http://www.Facebook.com/FisherValves
http://www.YouTube.com/user/FisherControlValve
http://www.Twitter.com/FisherValves
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Emerson Automation Solutions
Flow Controls
Marshalltown, Iowa 50158 USA
Sorocaba, 18087 Brazil
Cernay, 68700 France
Dubai, United Arab Emirates
Singapore 128461 Singapore
www.Fisher.com

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