Fisher® FIELDVUE™ DVC6200 Instruments Monitor Critical Control Valves and Reduce Downtime for Vogtle Units 1 and 2.

RESULTS

- Reduced process cycling and unit swings from 3% to 0.25%
- Reduced maintenance issues with feedwater regulator valves to zero
- Replaced analog with digital instruments and increased uptime by three days per year per unit

"With FIELDVUE digital valve controllers, we have not only seen a step-change improvement in valve performance but also in process performance."

Tim Prestifilippo
I&C Technician and AOV Expert

APPLICATION
Feedwater regulator, feedwater bypass, and temperature control valves

CUSTOMER
Vogtle Units 1 and 2 in Waynesboro, Georgia, USA

CHALLENGE
Vogtle 1 and 2 are twin units using pressurized water reactors (PWRs) to produce 2400 megawatts of power. Vibration and temperature caused problems for the positioners on the feedwater regulator and bypass valves, whose performance is critical to the process.

The valves are in a room that is very hot (110 degrees Fahrenheit or more). The heat from the valves themselves makes the space where the positioners reside even hotter—up to 250 degrees F. Due to the heat and vibration, the old analog positioners had failed on numerous occasions, leading to costly power losses at the plant. They were also causing some control issues, due to their slow response. Positioner performance resulted in level swings of more than 3% in the steam generators, causing increased stress on the feedwater system's components and requiring more manual intervention than the plant operators like to see.

SOLUTION
To improve reliability of the feedwater system, plant personnel began an upgrade to Fisher® FIELDVUE™ digital valve controllers in September 2006. A remote-mount application enabled the body of the device to be rack-mounted away from the high heat and vibration. Only the feedback device was mounted on the valves.

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The team also implemented a dual redundant system that would enable the maintenance crews to shift from one positioner to a back-up if a problem arose. Problems with the feedback devices continued, however, due to vibration where they were mounted.

The dual redundant system, however, yielded two important benefits: (1) The FIELDVUE instrument's built-in Performance Diagnostics (called One-Button Sweep) enabled online valve monitoring. Operators received early warning of any impending control or maintenance problems. (2) The redundant set-up also enabled a "hot swap" to the back-up device while they repaired the primary unit. This kept the system running and cut down on the power losses.

The ultimate solution arrived in 2012 with the implementation of FIELDVUE DVC6200 positioners, which have no linkages. With this non-contact feedback design, vibration had no effect and the need for hot swaps went away. Used in combination with ValveLink™ software, FIELDVUE instruments enable custom tuning and can be automated to run specific tests on the valve at user-specified intervals.

The new system, combined with the increased speed and stable response of the FIELDVUE digital valve controllers, has resulted in much better steam generator level control. The use of FIELDVUE digital valve controllers has moved the Vogtle Units 1 and 2 closer to predictive maintenance and delivered real value in terms of lower operating and maintenance costs.

The One Button Sweep test, available within the PD suite of any FIELDVUE™ instrument, provides a 20-second snap shot of multiple valve performance parameters such as travel or air supply.

RESOURCES

Article

http://www2.emersonprocess.com/siteadmincenter/PM%20Articles/deliver_results_in_NPPs.pdf

http://www.Facebook.com/FisherValves

http://www.YouTube.com/user/FisherControlValve

http://www.Twitter.com/FisherValves

http://www.LinkedIn.com/groups/Fisher-3941826

Scan the QR Code to view more Proven Results

Emerson Process Management
Marshalltown, Iowa 50158 USA
Sorocaba, 18087 Brazil
Chatham, Kent ME4 4QZ UK
Dubai, United Arab Emirates
Singapore 128461 Singapore
www.EmersonProcess.com/Fisher

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