

Turbine Startup Time Reduced with Fisher® High Pressure Steam Valves

RESULTS

- New valves maintain minimum flow through steam lines and IP turbine during off-use hours, reducing startup time.
- Emerson Local Business Partner engineers provide superior level of support to plant personnel.



APPLICATION

Steam control valves

CUSTOMER

Small power plant

CHALLENGE

The power plant uses a main boiler that is in continuous use providing steam to a high pressure turbine. During the day, when electrical demand is high, two steam generators are started up to feed an intermediate pressure (IP) turbine. During the night, when demand drops, the steam generators and IP turbine are shut down and two valves provide a minimum amount of steam from the main boiler to keep the turbine and the steam lines warm. If they go cold, it can take an extra hour to blow down the lines and turbine to remove condensation before start up is possible.

Plant personnel chose a non-Fisher supplier to replace the manually-operated steam valves with control valves. The supplier sized the valves for the application. Soon after the valves were installed, it became apparent that plant personnel couldn't keep the turbine and steam lines warm throughout the night. Investigation by the valve supplier revealed that the valves were undersized and not flowing enough steam. The supplier offered to replace the valves, but at the plant's expense. Plant personnel then contacted the Emerson Process Management local business partner in their area for a second opinion.

Fisher® high pressure control valves with piston actuators and Whisper Trim® III cages are an ideal solution for many steam applications.

SOLUTION

The day after being contacted, two engineers from the LBP were onsite to review the application, installation details, competitor's valves, and process conditions to fully understand the plant's needs. In addition to improperly sized valves, the engineers discovered that the piping was insufficiently sized for the required steam flow rates and that noise would be a concern if the valves were replaced. None of these issues were pointed out by the original valve supplier, so plant personnel were initially skeptical about the need for the newly recommended changes.

Continued follow up by the Emerson local business partner engineers convinced plant personnel to install two, two-inch 1500RF 585C-HPS control valves with Whisper III/A1 trim and replace the piping as recommended.

By contrast, it was pointed out by plant personnel that the original valve supplier had never visited the plant, rarely returned their phone calls, and provided no support at all.

RESULT

After running the new Fisher valves through the required rangeability, plant personnel found the valves had solved the problem of keeping the turbine and steam lines warm when not in use and noise levels were acceptable. Plant personnel were very satisfied with the outcome.

For more information on severe service solutions, visit www.fishersevereservice.com.

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