Steam Output Increased from Recovery Boiler using Fisher® High Pressure Control Valve

RESULTS

- The plant increased steam throughput of their recovery boiler while reducing vibration and noise.
- Daily cost for natural gas was reduced by $5,000 due to increased operational efficiency of the steam system.

Fisher® high-pressure control valves with Whisper Trim® III are an ideal choice for severe service steam applications.

APPLICATION
Recovery boiler steam control

CUSTOMER
Pulp mill

CHALLENGE
Steam production from the mill's new recovery boiler was being severely limited by the inability to safely operate a pressure reducing valve. The non-Fisher valve was expected to reduce the recovery boiler discharge pressure from 1500 psig to a 900 psig steam header while providing the required steam output. However, severe vibration resulting from noise, pressure drop, and line turbulence generated from the valve and an upstream piping tee was preventing the valve from meeting the required output. Attempts to increase steam throughput resulted in the failure of the valve stem. In an attempt to solve the problem, the valve manufacturer supplied a new valve with noise attenuating trim, but the solution proved unsuccessful.

To maintain pulp production, the plant's power boiler output had to be increased to make up for the reduced recovery boiler output. Because the power boiler was fired by natural gas, plant operating costs increased by $5,000 per day.

FISHER®
Severe Service

EMERSON™
Process Management

SOLUTION

Mill personnel contacted the Emerson local business partner with the request to size a valve to meet the needs of the application. Emerson's severe service team specified a Fisher 10-Inch EH body with Whisper Trim III as the suitable choice for the service conditions. Mill personnel, with help from Emerson, determined that a Fisher valve with the same specifications was installed at another one of the company's locations. Not only was the valve an exact match, but it was no longer in use and could be removed. The valve was refurbished at an Emerson facility and shipped to the mill for installation. Start-up was a success and the problems encountered with the original non-Fisher valve were solved.

RESULT

With the installation of the correct valve, the plant was able increase steam throughput, reduce natural gas consumption, and decrease overall operating cost. Daily costs were reduced by $5,000 and the quick procurement and refurbishing of the existing valve prevented further estimated losses of $450,000 based on the best possible lead time to procure a new valve. Mill personnel were impressed by the superior technology of the valve in this severe service application and by the timely cooperation demonstrated by Emerson.

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

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