

# 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.



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

### 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](http://www.fishersevereservice.com).

© Fisher Controls International LLC 2009 All Rights Reserved.

Fisher and Whisper Trim are marks owned by one of the companies in the Emerson Process Management business division of Emerson Electric Co. Emerson Process Management, Emerson, and the Emerson logo are trademarks and service marks of Emerson Electric Co. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice. Neither Emerson, Emerson Process Management, nor any of their affiliated entities assumes responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use, and maintenance of any product remains solely with the purchaser and end-user.

#### **NORTH AMERICA**

**Emerson Process Management**  
Marshalltown, Iowa 50158 USA  
T 1 (641) 754-3011  
F 1 (641) 754-2830  
[www.EmersonProcess.com/Fisher](http://www.EmersonProcess.com/Fisher)

#### **LATIN AMERICA**

**Emerson Process Management**  
Sorocaba, Sao Paulo 18087 Brazil  
T +(55)(15)238-3788  
F +(55)(15)228-3300  
[www.EmersonProcess.com/Fisher](http://www.EmersonProcess.com/Fisher)

#### **EUROPE**

**Emerson Process Management**  
Cernay 68700 France  
T +(33) (0)3 89 37 64 00  
F +(33) (0)3 89 37 65 18  
[www.EmersonProcess.com/Fisher](http://www.EmersonProcess.com/Fisher)

#### **MIDDLE EAST & AFRICA**

**Emerson FZE**  
Dubai, United Arab Emirates  
T +971 4 883 5235  
F +971 4 883 5315  
[www.EmersonProcess.com/Fisher](http://www.EmersonProcess.com/Fisher)

#### **ASIA PACIFIC**

**Emerson Process Management**  
Singapore 128461 Singapore  
T +(65) 6777 8211  
T +(65) 6777 0947  
[www.EmersonProcess.com/Fisher](http://www.EmersonProcess.com/Fisher)



**Severe Service**

