

Anti-Cavitation Trim Minimizes Valve Damage in Pulp and Paper Mill's Recovery Boiler Feedwater Application

PULP & PAPER

Challenge

A local pulp and paper mill had been using a 6" Fisher® Model EHT valve to regulate its recovery boiler feedwater application since the 1980s when the boiler was originally built. The valve had been experiencing excessive leak by over the course of several years that required the valve to be rebuilt during every annual outage. Each rebuild cost the mill around \$40,000, primarily due to the high price of the trim parts on the now obsolete valve model.

Solution

The mill consulted with Control Southern to find a way to reduce or avoid this maintenance cost. Control Southern worked with mill personnel to gather process information, and upon analysis, found that the differential pressure across the valve was much higher than specified in the original design. This resulted in lower valve travel and damaging cavitation, which permitted the excess leak by. Control Southern recommended replacing the valve with an updated valve model containing anti-cavitation trim if the pressure could not be reduced. The mill determined that they could reduce the inlet pressure to the valve to get it closer to design conditions. They still desired to move to the updated model to have access to more readily available parts and reduced parts costs.



Results

The mill invested \$48,000, plus \$15,000 for installation, to purchase a complete feedwater control valve assembly. The savings are as follows:

- 1) Reduced pressure to feedwater valve prevented trim damage during normal operation, saving the mill **\$40,000**.
- 2) When the valve does not have to be rebuilt, assuming a 4-year cycle, the savings on trim costs will be about **\$20,000**.

Total Savings = **\$60,000**