

Eccentric Plug Valve Reduces Maintenance Events in Paper Mill's Erosive Lime Mud Washer Application

PULP & PAPER

Background

Lime mud is extremely erosive and difficult to handle due to fine particulate and high solids concentration. This application is a critical path for the recovery system and has a direct economic impact on the mill. A competitor's full port ceramic ball valves had been installed in a local paper mill's mud washer for several years. While ceramic is indeed part of the solution, the flow profile and rotating-grinding action of a full port ball valve leads to its demise in Lime Mud service. These valves would typically fail in 7 to 10 months, requiring frequent maintenance trips to the field and unnecessary waste.

Solution

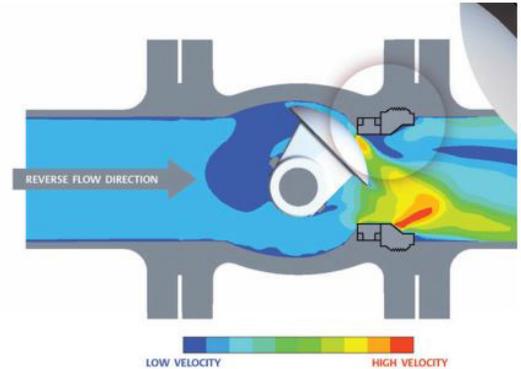
Control Southern recommended the mill's Engineering Department to install the Fisher® V500, a proven solution that would significantly prolong valve lifecycle and provide better control. The Fisher V500 is an eccentric plug valve that is similar to a segmented ball valve. The key difference for this application is the V500's cam action that prevents the seat and plug (ball) from the rotating-grinding action that typically occurs with standard ball valves. The V500's construction also creates a dramatically different flow profile relieving the internal velocity found in a standard ball valve body.

Results

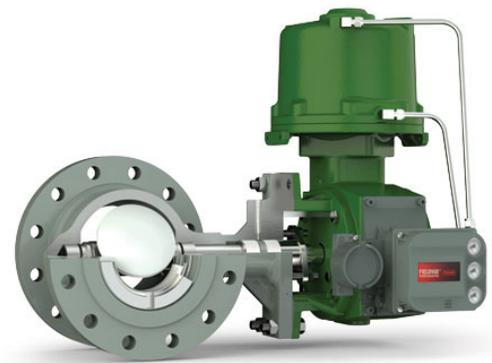
Coupled with ceramic trim and a sealed Alloy 6 bearing, this valve will last 3 to 5 years before requiring service. The valve seat is reversible, which extends the life of the seat ring. While the initial cost of these valves was approximately 1½ times the existing installation, the number of valves required to keep operating over a 5-year period was reduced by a factor of 1:8. There was also savings associated with fewer maintenance trips and loss of production time during valve changes.

Total Investment: \$12,000

5-Year Average Savings: \$60,000-\$70,000



The Fisher V500's cam action protects the seat and plug (ball) from the rotating-grinding action that typically occurs with standard ball valves



The Fisher V500 eccentric plug valve with ceramic trim and Alloy 6 bearings generally lasts 3 to 5 years before servicing