

Example Abstract

Title: Automating Waste Slurry Process Utilizing Real-Time Density and Flow

Abstract: ABC Company has five factories. An automation program was implemented to eliminate manual sampling of waste mud slurry which has been a bottleneck and created problems due to the lack of real-time responses to changing composition. Utilizing multivariable outputs (flow and density) from Coriolis meters, precision flow from magnetic flow meters, and integrating these outputs into a Delta V / AMS control system eliminated the bottlenecks, improved waste processing efficiency, and saved over \$300,000/year in chemical usage alone!

Type: Workshop

Level: Introductory

What Problems / Challenges Were Resolved?

Water is used to remove dirt at the front end of the slicing operation. For environmental compliance, the resulting mud is pressed and sent to land fill to dry. Polymer is added to the mud before entering the presses to aid in separation. Manual samples of the mud were taken to determine amount of polymer to add. Latency and variable mud flows resulted in incorrect polymer usage.

Solution?

Micro Motion Coriolis meters are used to measure flow and density of mud and for polymer additions. Coriolis CMFS015 and Magnetic flow meters are used to blend polymer and water in aging tanks. All process variables are brought into Delta V which controls the entire mud press operation. AMS is used as a trouble shooting tool to detect plugging and other instrument configuration and diagnostics.

What Results / Benefits Were Realized?

Only two instead of three presses are now needed to process the same amount of mud. This increased capacity eliminated the bottleneck and reduced operating and maintenance costs. The automated addition of aged polymer decreased usage by \$6.50 per ton of mud. A typical beet may have 3% - 6% dirt by weight. At 6000 tons/day this results in a savings of \$1170 to \$2340 per day in polymer usage.