

JMG MAGNETIC LEVEL GAUGES/MGT MAGNETOSTRICTIVE LEVEL TRANSMITTERS for Black Liquor Chemi-Washer in a Paper Mill

BACKGROUND

Black liquor is a waste product found in paper mills from the processes used to break pulp wood down into usable fibers. Many different methods are used to wash black liquor from the fibers before they are sent to the paper / cardboard making sections of the mill, one of which is a black liquor Chemi-Washer. The Chemi-Washer consists of a train of eight washes used to clean black liquor off of the paper fibers. The waste liquid gets progressively cleaner through each section of the train. DP transmitters are traditionally used to measure level in each section of the washer.

THE PROBLEM



The waste liquid will contain plant fibers with a potential layer of foam (depending on the wood stock used). DP transmitters build up a layer of fouling on the diaphragm over relatively short amounts of time. This leads to drifting on the level measurement,

requiring cleaning and recalibration of the instrument. At this particular plant, Guided Wave Radar was tested but ultimately rejected due to false readings caused by solids buildup on the probe.

THE SOLUTION

A set of Jogler JMG Magnetic Level Gauges with MGT Magnetostrictive Level Transmitters was designed for each section of the washer to allow for long-term, low-maintenance level measurement in this application, providing a 4-20 mA output as well as a local level indication. An undersized float was used in the chamber, providing more available area for particulate matter to accumulate in the chamber while giving the float enough room to float freely. The floats were also designed with a much larger amount of additional buoyancy than is standard to help force the float past any internal chamber fouling and particulate matter. This gives these special MLGs the ability to operate for longer periods of time with no disruption of measurement.

The chamber was also designed with a bottom-of-chamber lower process connection. This is a full bore 2" connection tied directly to the customer's 2" drain line. When the customer undergoes their standard PM procedures, they blow down each chamber with water. This particular connection configuration allows for complete removal of any built up solids and returns the MLG operation to "Day 1" status.

