

# Pulp and Paper Mill Decreases Maintenance Costs with Electronic Remote Sensor Technology

## RESULTS

- Reduced maintenance costs
- Reduced water consumption and energy costs
- Decreased risk of startup delays

## APPLICATION

Level measurement on a black liquor vessel

## CUSTOMER

Zellstoff Pöls AG  
Heinzel Group, Austria

## CHALLENGE

Zellstoff Pöls, an Austrian-based paper mill, was having challenges with a black liquor cyclone vessel. The risk of a vessel spill over was a constant worry for engineers at the facility, and the amount of black liquor output used in the kraft recovery cycle was suboptimal.

The inability to accurately measure the level of the black liquor in the cyclone vessel caused these challenges for Zellstoff Pöls. Because the installation had a large amount of foam on the black liquor, differential pressure based technology was used. In particular, a DP transmitter was installed with wet legs and a water flushing system for both the high and low side connections. The complicated water-injection system was required due to plugging issues with the black liquor and the impulse piping. Additionally, the level measurement would fluctuate wildly and spike every time the static pressure in the vessel would go into a vacuum state. This was due to the water getting sucked out of the low-side wet leg by the vacuum condition in the tank. Finally, the impulse piping also required the use of electrical heat tracing and insulation to prevent the water from freezing, as part of the low-side wet leg was mounted outdoors and exposed to the harsh winter climates.

Overall, the installation was proving to be costly for Zellstoff Pöls. A lot of money was spent on maintaining the wet legs, mainly stemming from the water required to constantly flush the system and the electricity required to heat trace the impulse piping. The lack of a reliable level measurement also risked start up delays of the pulp production process.



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*Zellstoff Pöls was able to address reoccurring maintenance problems and improve their level measurement by upgrading to a 3051S ERS™ System.*

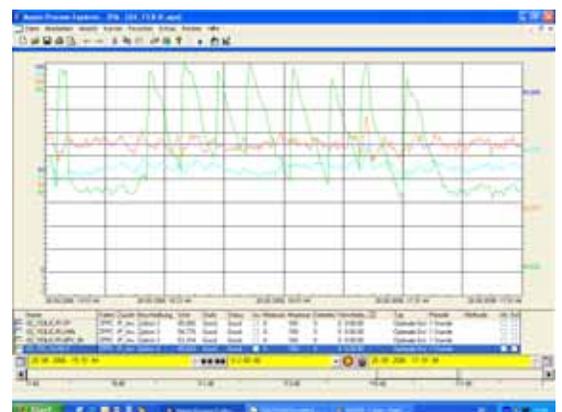


Figure 1. Measurement errors under vacuum conditions

  
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### SOLUTION

Zellstoff Pöls installed a 3051S Electronic Remote Sensor system that consisted of two pressure transmitters linked together digitally. Differential Pressure was computed in one of the two sensor and sent back to the control system via a 4-20 mA HART signal. The 3051S ERS System eliminated the need for the wet legs, water injection system, heat tracing, and insulation that were required with the previous installation.

Eliminating the wet legs increased the reliability and repeatability of the black liquor level measurement, especially during the start-up phase of the pulp production process when pressure fluctuated the most. Eliminating the water injection system helped the facility reduce their water consumption, and the removal of the heat tracing cut back on electric utility expenses. Overall, Zellstoff Pöls was able to solve reoccurring maintenance problems by upgrading their existing installation to a 3051S ERS system.

### RESOURCES

#### Emerson Process Management's Pulp and Paper Industry Page

<http://www.emersonprocess.com/solutions/paper>

#### Rosemount 3051S Series of Instrumentation

<http://www.rosemount.com/3051s>



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