
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.

For more information: www.rosemount.com
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 sensors 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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Emerson Process Management
Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 949-7001
www.rosemount.com

Emerson Process Management
Heath Place
Bognor Regis
West Sussex PO22 9SH
England
Tel 44 (1423) 863 121
Fax 44 (1423) 867 554

Emerson Process Management
Emerson Process Management Asia Pacific Private Limited
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com

For more information:
www.rosemount.com