

Pulp & Paper Mill Decreases Unplanned Shutdowns with Electronic Remote Sensor Technology

RESULTS

- Reduced unplanned shutdowns by 95%
- Reduced maintenance costs
- Decreased risk of capital damage to pumps



APPLICATION

Vacuum tank on lime mud dewatering filter

CUSTOMER

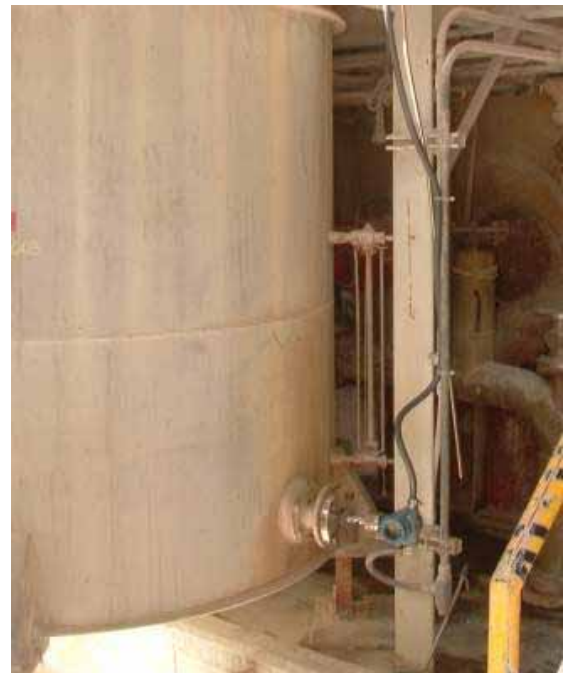
Pulp & Paper manufacturer in Southeastern US

CHALLENGE

A pulp and paper facility was looking for ways to improve the runtime on its dregs washing cycle. In particular, the vacuum tank on the lime mud filter was a source of frustration due to unreliable level control.

A DP transmitter with a wet leg had been used to measure the level of the weak wash in the vacuum tank. However, this proved to be a suboptimal solution for the application. Maintaining the correct liquid level in the wet leg was difficult and time consuming. Additionally, solids would often plug in the impulse lines. The location of the wet leg had been moved several times to try and minimize these problems, but ultimately the issues persisted.

The inability to accurately measure the level in the vacuum tank risked causing one of several things to happen, ranging from level carry over to pump cavitations. Additionally, maintenance schedules were required each time the impulse lines would plug, increasing operations and maintenance costs. On average, this happened once a month and resulted in at least 2 hours of unplanned shutdown with each occurrence.



Vacuum Tank with 3051S ERS Transmitter

SOLUTION

The DP transmitter with wet legs was replaced with a Rosemount 3051S Electronic Remote Sensor system. The 3051S ERS™ system consisted of two pressure sensors linked together digitally. Differential Pressure was computed in one of the two sensors and sent back to the control system via a 4-20 HART signal. This architecture allowed for the elimination of the mechanical wet leg which caused the inaccurate level measurement of the vacuum tank. Additionally, a flanged remote seal was used on the transmitter located at the bottom of the vessel to eliminate the problematic plugging with the impulse lines.

The facility used to have approximately one unplanned maintenance shutdown per month on the vacuum tank. With the 3051S ERS system, there was only one shutdown that occurred over a 2-year period, a 95% improvement. This resulted in an approximate savings in maintenance costs of \$2000 at the one installation alone. As one control engineer stated, "The continued uptime with this instrument has built operations confidence in the measurement itself and has allowed the process to be run in automatic close to 100% of the time." Also, a more reliable level measurement decreased the risk of damage to the vacuum pumps.

RESOURCES

Emerson Process Management - Pulp and Paper Industry

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

Rosemount 3051S Series

<http://www.emersonprocess.com/rosemount/products/pressure/m3051s.html>

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