



## ROTTNEROS, VALLVIKS MILL RESTORES AUTOMATIC CONTROL OF PULP FLOW FROM DIGESTER WITH HIGH PROCESS NOISE DIAGNOSTIC

### Application

Pulp flow from digester to diffusion washer

### Customer

Vallvik Mill (Rottneros Group) is an independent and flexible producer of chemical and mechanical pulp. About 450,000 ton of pulp are produced worldwide every year. At Vallvik Mill, long-fiber chemical sulphate pulp is produced, which accounts for approximately 56% of the Group's production.

The sulphate process used is not only the most common process for production of chemical pulp, but it also produces a stronger pulp. An impressive 99% of fuel used at the mill today is fossil-free and 97% of all chemicals are recycled.

### Challenge

This customer experienced instability in the output from the magnetic flow meter installed between the digester and diffusion washer. The source of the high noise in this application is a mix of stock consistency at this process stage. As a result of the instability and variation in the signal, Vallvik Mill were unable to rely on the flow reading at this measurement point. This led to oscillations in the control valve, reduced productivity and disruptions. Even with damping applied in both the meter and the control system, there was still too much noise to control the process effectively. When the problem was at its peak, Vallvik Mill was forced to turn off the automatic control completely and control the valve manually. There have been several efforts to correct the problem with the existing flow meter and provide a solution to effectively fight the noise issue with small or no success until now.

### Results

- Increased pulp production
- Restored automatic control
- Reduced measurement variation
- Reduced raw material costs

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*“The Rosemount™ 8782 Slurry Magnetic Flow Meter was installed and production states that the flow reading has never been as stable as it is now at this measurement point.”*

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**Tommy Sjöberg**

*Production Engineer Rottneros, Vallviks Mill*

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## Solution

Emerson™ supplied the Rosemount 8782 Slurry Magnetic flow meter specially designed to handle high process noise. Both the sensor itself, but also the transmitter, has unique capabilities when it comes to challenging applications. A shutdown was scheduled, at which time the Rosemount magnetic flow meter was installed. The other manufacturer's magnetic flow meter was pulled out of the process. The existing flow meter was set with damping, while the Rosemount flow meter used a higher frequency instead of traditional damping procedure. By reducing the measurement variation, the customer is now able to control the process more accurately because the Rosemount magnetic flow meter does not need to be damped. Damping often results in the meter reacting more slowly to current product changes to get a stable signal. Rosemount magnetic flow meter reacts as quickly as before despite a lot of noise. More accurate control resulted in increased productivity, reduced raw material usage, and less disruptions. According to Vallvik Production personnel, the flow reading has never been as stable before allowing precision control of the production.



*Rosemount MS Magnetic Flow Meter*



*Rosemount 8782 Transmitter for Slurry Applications*

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