

Industry: Power Generation

- Scrubber Line

SONARtrac[®] SOLUTIONS

A sonar array-based, non-invasive flow meter that provides accurate and repeatable flow measurements of highly abrasive gypsum slurry on a scrubber line at a coal power plant

Challenge

A major coal power plant in the United States needed to measure the flow rate of the gypsum slurry in their sludge dewatering process going to the hydrocyclones in their scrubber system. This measurement is critical for plant operators because it is used to control the flow to the hydrocyclones and the horizontal extractor-dewatering belt. The plant had tried to solve this problem with other conventional flow meters, all of which failed to provide an accurate measurement due to the extreme abrasiveness of the slurry, the need for more accurate flow control and the FRP (Fiberglass Reinforced Plastic) pipe used in the process.

SONARtrac Solution

The CiDRA team was able to work with operators to solve the plant's flow control problem. The solution CiDRA provided was the SONARtrac[®] VF-100, a clamp-on, non-ultrasonic flow meter that uses sonar array-based processing technology to provide a highly repeatable and stable flow rate measurement. During a visit to the plant, CiDRA installed a SONARtrac system on the outside of the gypsum dewatering line without any process disruption or downtime. Due to its non-ultrasonic technology, the SONARtrac meter was not affected by the glass fibers in the pipe material. The meter was also not prone to wear and did not require costly replacements because it did not have any direct contact with the slurry inside the pipe. Since the SONARtrac system installs on the outside of the pipe, there are no flanges or other potential leak points.

The SONARtrac system was able to provide the accurate, repeatable flow measurements that were crucial to maintain the flow balance around the sludge de-watering process.

Benefits

The customer chose the SONARtrac system because of its excellent performance and cost savings. The customer was able to have critical, accurate flow measurements despite the highly erosive nature of the fluid. Simply clamping the system on to the outside of the pipe, the customer was also able to save money by avoiding costs associated with FRP pipe cutting and flanging, process shut downs and invasive installations. The fact that the SONARtrac system has no flanges or moving parts also decreased the customer's risks of potential leak points and wear.

In addition to flow control, the customer uses the repeatable flow measurement for preventative maintenance to identify increases and decreases in flow which can be caused by problems such as broken or plugged nozzles on deck wash lines. The customer chose the ideal long-term, low-maintenance solution.



Product Used

SONARtrac[®] VF-100

- Entirely non-invasive technology
- Measures flow rate of liquids and slurries
- No moving or process wetted parts
- Works with multiple pipe materials such as metallic, non-metallic, HDPE, FRP, and lined pipe
- Transmitter has multiple data output options including: 4-20 mA, PROFIBUS[®], MODBUS[®], FOUNDATION Fieldbus[™]
- Transmitter equipped with USB port which provides data output to be used for system set-up and trouble shooting