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Meters monitor flow and provide pump protection

Siemens answers with SITRANS FUS1010 Clamp-on Meter

Situation

A Municipal Water Plant in the Southeast United States treats and supplies potable water to a large metropolitan area. Part of the process requires accurate flow measurement of the water from individual pumps to the main distribution system. The flow meters provide information of the current output of the individual pumps. The customer also requires a device that can signal a reverse (negative) flow in the event a pump had stopped. This is so they would know if water was being forced back through the pump. If water flows back through the pump in a reverse direction and an attempt is made to start the pump during this reverse flow, it could cause severe damage to the pump and motor.

Challenge

The customer had been using insertion-type, hot-tap magnetic flowmeters from another manufacturer. Due to the placement of the insertion meters (at least one in a downward flow condition), the meters were only lasting from 8 to 12 months and then required replacement at approximately $5000 each.

Solution

The local Siemens representative suggested the customer try the SITRANS FUS1010 ultrasonic clamp-on meter, mounting it on the pipe being monitored before or after the pump, depending on space and piping configurations. These are 20 to 36 inch pipes, ductile, and cast iron, and some are up to 60 years old.

SITRANS FUS1010 clamp-on transmitter

After a successful demonstration, it was confirmed that the Siemens clamp-on meters provide reliable measurements from outside of the pipe. Since the transducers are not in contact with the process, they cannot be damaged with the process flow like the insertion-type meters. The local Siemens representative also took the time to install a meter to provide an online demonstration of the instrument, and collected data during the test to help assure the customer that the flowmeter would perform as stated.

The two meters specified were dual-path clamp-on versions due to the pipe sizes and potential liquid flow profile conditions.

SITRANS FUS1010 benefits

Better performance

The SITRANS FUS1010 provides equal or better performance to the previous meters, especially in the difficult downward flow direction installation.

Reduced costs

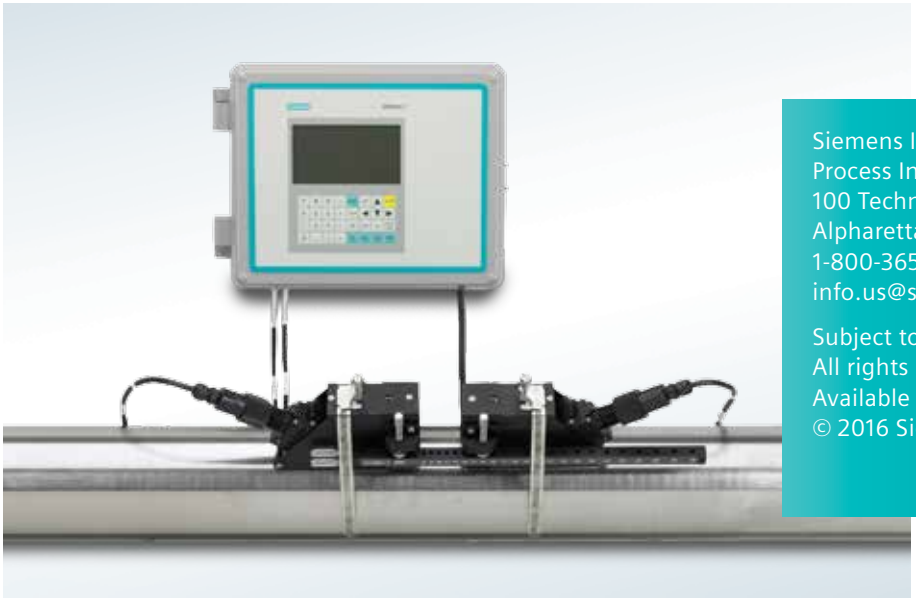
The Siemens FUS1010 flow meter is not subjected to the physical forces of the water, including cavitation during pump start-up, which appears to be the cause of the damage to the insertion-type meters. Therefore, maintenance is minimal and the customer is saving a considerable amount of money in not having to continually replace the insertion-type meters.

Reduced time

Initial results also show that the previous insertion-type meter had indicated reverse flows at near zero flow conditions, while the FUS1010 clamp-on meter indicates that reverse flow is not occurring. This makes the Siemens clamp-on meter more reliable and reduces maintenance time in checking and rechecking to be sure the flow is not being reversed during indicated low-flow conditions.

Accurate measurement

SITRANS FUS1010 provides accurate, non-intrusive flow measurement. It is particularly suitable for high precision dosage of chemicals such as fluoride found in numerous fresh water treatment applications. The FUS1010 is available in single, dual or optional four channels allowing measurement of four independent pipes.



SITRANS FUS1010 clamp-on ultrasonic flow meter and transducers mounted on pipe.

Siemens Industry, Inc.
Process Industries and Drives
100 Technology Drive
Alpharetta, GA 30005
1-800-365-8766
info.us@siemens.com