



CASE STUDY

INDUSTRY: EDUCATION



CUSTOMER: Vanderbilt University

LOCATION: Nashville, Tennessee



BACKGROUND: For years, Vanderbilt University has relied on Armstrong's Veris Flow Measurement Group for reliable steam metering solutions. After years of successful measurement, Armstrong's Veris Flow Measurement Group is the go-to supplier as other meter technologies struggle to deliver the confidence that Armstrong gives to customers.

Vanderbilt looked to Armstrong's Veris Flow Measurement Group for an alternative solution to replace a Magnetic Flow meter since its performance was deemed unreliable. A Magnetic Flow meter uses an electric current applied to a coil which results in a magnetic field. As conductive liquid flows through the magnetic field, a small voltage is induced.

The voltage produced is proportional to velocity. For the application, boiler feed water was being measured by the magnetic flow meter after a condensate polisher. During normal operation, the meter was able to accurately measure the feed water. During an upset condition, the condensate polisher was bypassed causing particulate to pass by the flow meter.

The unpolished condensate contained a large amount of debris, and as the material passed through the magnetic field particulate coated the inside of the flow meter. When this occurred, the meter was unable to properly determine the correct flow rate for a given velocity. The only way to regain confidence in the measurement was to shut the line down, drain the pipe, remove and clean the magnetic flow meter.

After a few instances, the meter's poor reliability along with a high level of maintenance and shutdowns pushed Vanderbilt to find a more reliable way to measure condensate.

SCOPE OF WORK: Armstrong's Veris Flow Measurement Group recommended installing an Accelabar® flow meter to offer an alternative solution that could provide reliable flow measurement regardless of an upset condition like unpolished condensate.

The Accelabar provided a flow range of 22.5:1 turndown in flow, in a limited straight run scenario. In the past, two transmitters were required to provide the best accuracy across the entire range of the Accelabar. Veris was able to use the new Foxboro IDP 10S with its FoxCal™ technology in order to have a combined percent of rate accuracy solution.

The new transmitter installation has 11 separate calibrations loaded into the device. As the differential pressure from the primary element is measured, the transmitter chooses the correct calibration curve. Veris' solution delivered performance that was previously unattainable with a single differential pressure transmitter.

BENEFITS: Together, the Accelabar and Foxboro combination is proved to be the best solution. With its proven performance, the Accelabar flow meter is now the standard meter for the boiler feed water measurements at Vanderbilt University.

