Doosan Škoda Power reduces uncertainty in testing of steam turbines with Micro Motion

RESULTS

- Improved uncertainty of performance testing on steam turbines by 0.12%
- Gained 100% measurement confidence with Smart Meter Verification
- Reduced routine meter maintenance to zero

APPLICATION

Doosan Škoda Power operates a cutting-edge research center for steam turbines in Plzen, the Czech Republic that includes an experimental laboratory. The core activity of this laboratory is to conduct research and development to enhance steam turbine efficiency. Efficiency improvements are gained by tuning the steam turbine on a variety of operating conditions. Driving out uncertainty during performance testing is the key to more accurate steam turbine tuning.

"This improvement of our research center by Micro Motion Coriolis flow technology helps us to lead the way to the next generation of steam turbine technology."

-Mr. Lukáš Bednář, Head of Experimental Research

CHALLENGE

During steam turbine performance testing water is injected into the steam near an inlet of the experimental steam turbine. This cools the steam to the desired temperature to simulate an actual operating condition. The actual efficiency of the steam turbine under test is calculated by a thermal balancing method. Because flow measurement uncertainty can have a significant impact on the performance testing results, a highly accurate flow measurement is required for this application.

Installation of Micro Motion ELITE® Coriolis flowmeter in application

SOLUTION

Doosan Škoda Power selected Micro Motion® Coriolis flow technology because of its high accuracy and direct mass flow measurement. This solution provided precise steam temperature control which allows running the critical performance tests with very low uncertainties. Because the thermal balancing and efficiency calculations are based on mass there was a distinct advantage in using a direct mass flow measurement device versus a volumetric measurement device which required pressure, temperature and compressibility (P,T,Z) correction.

Micro Motion®

For more information:
www.MicroMotion.com/power
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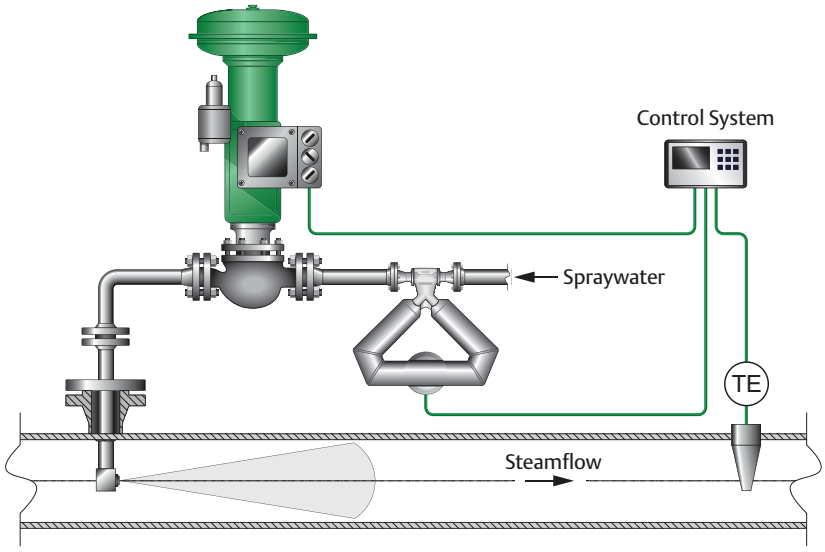
EMERSON™
Process Management

Laboratory safety has been increased by the meter's fully-welded design, and routine meter maintenance activities have been reduced to zero.

The Micro Motion ELITE mass flowmeter was installed in the water application because of its world-class, traceable flow calibration and Smart Meter Verification (SMV) functionality which checks meter performance and integrity. Combining SMV with flow calibration saves time, money and delivers absolute measurement confidence.



Typical Desuperheater Installation with Micro Motion Coriolis Flowmeter

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