PROCESS INSTRUMENTATION

Original equipment manufacturer uses **Siemens pressure transmitters to add value and reliability to their steam generators**

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Background

A large OEM (Original Equipment Manufacturer) of Process and Heating Boilers/Steam Generators provides boilers/steam generators to industrial plants for processing applications. The type of steam generator they supply is often a forced-recirculation water-tube boiler that uses a drum as a steam separator with a reservoir of water to supply the coils. A re-circulating pump draws the water from the drum and forces it through a set of parallel connected coils at the rate of 3 to 4 times the maximum steaming rate.

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The water is then pushed through a steam lance and a series of baffles in the drum where some of the water is flashed into steam and separated. The dry steam is released, and the water is re-circulated through the coils. The fuel and combustion air is controlled by a modulating motor that responds to steam pressure. The feedwater is controlled by a water level control system and modulating feedwater valve. As part of the package, the company supplies transmitters on the steam generators to measure the water levels in the expansion tanks used to put water in the boiler and recover steam after the heat exchanger. This is a critical measurement because without constant and consistent water supply, the boilers can become inefficient and could meltdown or explode.

Challenge

This company was previously using a float type of level measurement device on their steam generators with 0–135-ohm output. It was difficult to find control valves that could match the 0–135-ohm output. It was also difficult to adjust the transmitter's span. Because the transmitters did not have local displays, the technicians could not see the current reading onsite. In addition, the company stocked replacement transmitters for their customers, but were at risk of having the transmitter warranties expire while still on the shelf.

Solution

The local Siemens representative demonstrated the capabilities of the SITRANS P320 differential pressure transmitter for this level measurement application on boiler/steam generators. The company now supplies the Siemens differential pressure transmitters to measure the water levels in the expansion tanks. The SITRANS P320 DP transmitters come standard with a built-in display and pushbuttons for span adjustments, calibration, and other application-specific settings. The display can be configured to show level and volume readings, with tank geometries and custom scaling built into the local menu structure.

Extended warranties, in addition to the standard 2 years, are available in 1-year increments (3-year, 4-year, 5 year, etc.). This allows for the purchase of only the required coverage for a project. The Siemens transmitters feature an accuracy of 0.065% extensive diagnostic and simulations functions, and a choice of communication protocols, including HART, PROFIBUS PA, PROFIsafe, or FF. The SITRANS P320 DP transmitter is suitable for installation in SIL 2 applications in accordance with IEC 61508/IEC 61511.

Benefits

Cost savings: Flexible, inexpensive warranty options allow for the purchase of only what is needed on a project or installation. Traceable online, this warranty can be tracked as equipment moves from the OEM, to end-users.

Ease of use: The ability to use the pushbutton keypad on the instrument to configure and calibrate makes start up quick and easy. The built-in display allows the user to see the current readings without having to go back to the control room. Choice of communication protocols makes it easy to use with almost any system.

Time savings: Extensive diagnostic and simulation functions make it easy to pinpoint any faults that might arise. With the P320's enhanced display, this information in readily available to technicians through plain-text messages and simple icons.

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