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Intelligent transmitters help check on coal plant boiler and mill area

Effective, profitable power plant operation requires managing capital-expense turbine, boiler, and combustion equipment, along with many other assets that must be balanced precisely. Reliable readings of pressure, temperature, and other process variables are critical to success.

While analogue transmitters are known for accuracy and reliability, maintenance costs increase with age and flexibility for performance improvement is limited. To reduce long term operating costs and maintain quality service to most of its customers, utility companies have started to replace their aging analog transformers with modern digital transmitters.

Utility companies use transmitters for draft indications on the boiler and pulverised mill area. They read pressure on the boiler, the turbine, combustion, and steam heating equipment. Some of the instruments send data to a centralised distributed control system (DCS), which manages the set points that control the sensitive interactions.

Other instruments simply indicate various pressure states to operators and maintenance technicians.

When most power utility companies implemented their first DCS, most, if not all transmitters were analog. At the time, mixing and matching multiple brands of analog sensors was difficult, and in some cases impossible, because of proprietary mounting configurations.

Management at power plants want to be certain that they chose a digital sensor that would not lock them into a single vendor.

Most DCS' are an intelligent two-wire differential pressure transmitter with high-performance accuracy to +0.05percent of calibrated span. Itprovides measurement spans of 0.12 to 21000kPa (0.018 to 3000psi), which expands its versatility so that a single transmitter can satisfy nearly all applications.

Most pressure transmitters are available with 4 to 20mA analog output. These transmitters are also available with industry standard and are backed with an industry-leading standard five-year warranty mounting configurations that make it easier and less expensive to replace existing transmitters and reuse existing installation designs without being limited to a single supplier.

Ease of calibration is another major benefit that the power utility receives, since digital transmitters can be calibrated by using either the push buttons on the digital transmitter's LCD, a handheld communicator, a notebook/desktop computer, or from the operator station of the DCS.

The transmitters' standard mounting configuration, which serves as a universal replacement for all competitive models, allows the power utility to change transmitters without having to replace the entire manifold. Likewise, if they want to replace a transmitter and do not happen to have the primary vendor's product available, they now have the flexibility to use another brand.

Power utilities can also increase productivity resulting from less calibration. With analog gauges, calibration was frequent and time consuming. The digital transmitters require calibration considerably less often, which is usually done during forced outages.

The ease of making routine calibrations has had a true preventive maintenance benefit as well. By being able to check and correct calibration on every instrument during a shutdown, plant operators are more confident that all instruments will be operating at peak performance once the system starts up.