Kistler-Morse®

Sonologic Products

case history

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Market: Bulk Storage of Fly Ash for Utilities

CUSTOMER

The Philadelphia (PA) Electric Co. provides power to approximately 1.5 million customers.

PROBLEM

The utility's engineering staff was dissatisfied with two technologies that monitored levels of fly ash in four silos, each measuring 50-feet high by 25-feet in diameter. Fly ash, a by-product of burning coal, is removed from the flue gas in electrostatic precipitators before the gas is emitted to the environment. The ash is stored in the silos, awaiting removal from the station premises. Scheduling the ash-removal trucks depends on accurate, reliable readings of ash levels in the silos, according to Carl Mariani, instrumentation and controls engineer for the utility. First, Philly Electric tried a weighted rope system that dropped through a hatch into the silo and was lowered until it hit the fly ash. But that method was undesirable because of safety reasons. In the wintertime, operators had to deal with railings and stairs covered with ice, plus sometimes puffs of ash-laden gas would blow out at them when the hatch was opened. Secondly, the utility used a motorized yo-yo method. However, fine ash particles worked their way into the device, and causing it to fail and be out of service more than it was up and running.

APPLICATION

In 1988, the utility begin using a Kistler-Morse Sonologic level indicator. Consisting of an ultrasonic transducer and microprocessor suspended above the fly ash, it sends out pulses of sound waves that bounce off the ash and calculate its level in the tanks. The facility decided to spend a little more money for state-of-the art, non-contact, continuous level technology.

BENEFIT

Now operators -- without climbing to the top of the tanks -- know continuously the fly ash level and when to call in the trucks to remove the ash. When the system was implemented, Mariani made sure workers had faith in the system, by comparing the instrument's readings to the weighted rope standard. Soon, the operators became convinced that Sonologic was reading correctly.

CONCLUSION

Philly Electric has expanded its use of Sonologic technology. Similar equipment has been installed elsewhere at the facility, based on the results the company has had with the fly ash silos.