Doppler for Fly Ash Slurry Flow

A Large and Growing Market

Coal-fired generators account for 38% of power generation worldwide. More than half the electricity generated in the United Sates comes from coal, 77% in China, 70% in India and 92% in South Africa.

Clean air regulations require scrubbing systems to remove sulfur dioxide from the flue gases. Typically a limestone slurry is sprayed into the flue gas stream to remove SO_2 and other particulate.

Doppler Flowmeters are ideal to monitor and control the flow rate. The limestone slurry is abrasive so in-line flowmeters are not practical. Non-contacting Doppler flowmeters can be used both on the fly ash slurry supply lines and on "used" or recirculated slurry.

Doppler sensor works from outside the pipe and mounts on any diameter ½" (12.5 mm) or larger. The flowmeter includes flowrate display, totalizer, 4-20mA output and control relays. The strap-on sensor can be located up to 500 ft (150 m) from the electronics enclosure.

Strap-on ultrasonic sensor is not affected by the abrasive and caustic fly ash slurry

DFM-IV Doppler Flow Meters installed to measure "fly ash slurry" at Xcel Energy's Sherburne County Generating Plant in Becker, Minnesota

Doppler flowmeters can be installed without cutting pipe or shutting down flow. So they are ideal to replace existing in-line flowmeters as they fail. Calibration is easy with the built-in keypad and the 4-20mA can be scaled for any flow rate from 0.25 to 40 ft/sec (0.08 to 12.2 m/sec).

The Future...

Europe, North America and Asia hold vast reserves of coal. Technologies to provide cleaner and cleaner emissions are being developed so this market is expected to grow.

A typical coal-fired power plant can have requirements for up to 50 flowmeters for fly ash slurry.

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