



Design Update Bulletin

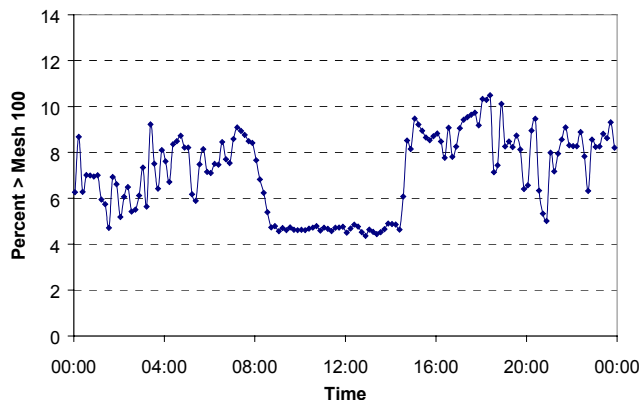
On-line Particle Size Measurement is the Key to Mill Performance Monitoring ...

“ECT Coal Fineness Measurement”

This powerful new tool can monitor the fineness of the pulverized fuel and help detect operational problems early. ECT Particle Size Measurement in the mill outlet pipes provides on-line information about the changes in particle size, which is the dominant performance indicator for mill operation.

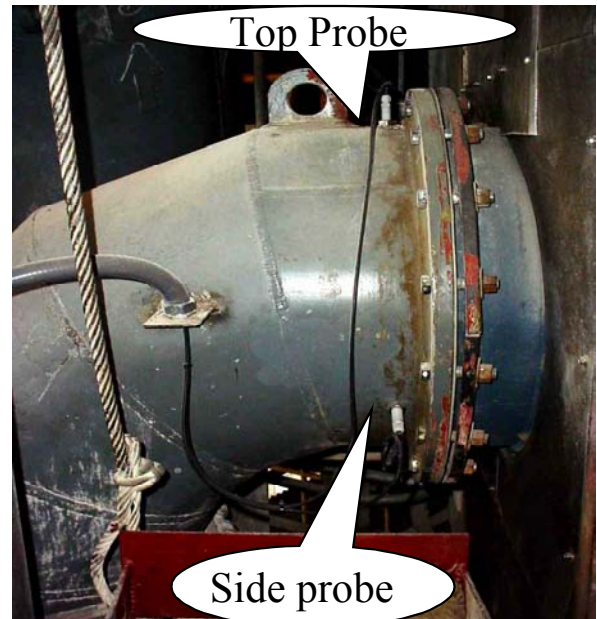
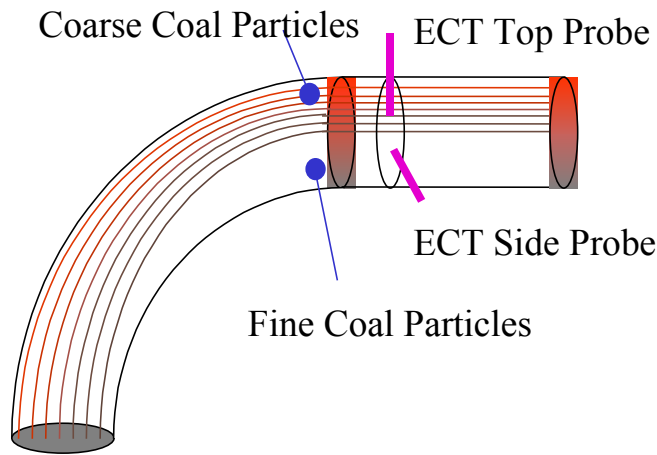
ECT Particle Size Measurement is now offered as a standalone tool to those power plant operators who have the need to monitor the pulverized fuel fineness closely.

Example of Particle Size Measurement



Pulverizer product fineness is influenced by many variables:

- Coal characteristics such as heating value, moisture, hardgrove index, and feed size are dominant in determining the mill throughput at a desired fineness. Thus, the ECT Particle Fineness measurement can detect changes in coal quality before any negative impact on the combustion process (such as increased NOx and CO emissions and LOI) has occurred.
- Sudden changes in product fineness are an immediate indicator for mill operational problems. Here, the ECT system provides valuable information about which mill is the originator for emission problems. The time consuming practice of sequentially taking mills out of service to identify the cause for the upsets is eliminated with the ECT particle size measurement.
- Long-term changes in fineness provide feedback about the mill maintenance status. This information can be used to update the scheduled mill overhauls.



ECT Particle Size Monitoring uses the natural segregation of particles after a bend in the pipe. Due to their inertia, the particles can not follow the flow path as well as the transport gas, which causes a rope on the outer diameter of the bend. ECT Particle Size utilizes this effect by measuring the electrostatic field inside and outside the rope. One probe is placed directly into the rope on the outer diameter and one probe into the lean gas flow. By comparing the signals from those two locations changes in particles size can be measured.

The probes are fabricated from Tungsten Carbide steel to withstand coal particle erosion. Probe operation is completely passive, i.e. no power is supplied to them. The signal electronics and the computer system to calculate the changes in particle size can be located as far away as 1000 ft (308m) from the measurement location. Therefore, there is no requirement for outdoor cabinets. The particle size measurement data can be forwarded to the DCS via Ethernet or an optional 4-20mA connection. ECT Particle Size measurement is complemented by software that monitors the data constantly to alert of sudden changes.

The ECT Particle Size measurement can easily be integrated into the ECT on-line coal flow measurement system. With ECT, coal flow, velocity and particle size measurement is available in one comprehensive package.

For additional information, please contact Tony Headman at (908)713-2459 or e-mail at Tony_Headman@fwc.com.

The information presented above is continually updated. Please contact your local Foster Wheeler Power Group office for specific details.

Foster Wheeler Power Group – U.S./International Service Centers

Hdqtrs. Clinton, New Jersey
Perryville Corporate Park
Clinton, NJ 08809-4000
(908) 713-2260
Fax: (908) 713-2285
parts@fwc.com

Chicago Illinois
1401 Branding Lane Suite 315
Downers Grove, IL 60515
(630) 241-2050
Fax: (630) 241-2050

Atlanta, Georgia
1000 Johnson Ferry Road
Marietta, GA 30068
(770) 509-0337
Fax: (770) 509-0797

International Office
9645 Scranton Road Suite 230
San Diego, CA 92121-1761
(858) 458-3187
Fax: (858) 558-3406