

On-Line Monitoring of Carbon in Fly Ash for Boiler Control

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ABSTRACT

It is generally agreed that reliable real time measurement of unburnt carbon in fly ash is a valuable tool for boiler monitoring and control in coal burning power stations. It also facilitates more effective utilization of the fly ash, as ash quality may be more effectively controlled. A new design of on-line carbon in fly ash analyzer, the CIFA350, was placed on trial at Tarong power station in late 2006. The trial was successful and all four boilers at Tarong have now been fitted with carbon in fly ash monitors. The CIFA350 uses a non destructive method of analysis to determine the percentage of unburnt carbon in the fly ash. This provides close to real time unburnt carbon data and also allows samples to be collected for laboratory analysis when required. The analyzer has demonstrated good reliability and accuracy with minimal maintenance requirements. In this paper the new design is described and maintenance requirements are discussed. Comparison of the analyzer results with conventional laboratory analyses is presented. The use of real time unburnt carbon data for boiler control is discussed.

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