For over 15 years ITM has provided the power generation and pulp & paper industries with innovative solutions that increase boiler operation efficiency. ITM has developed another system to improve boiler efficiency, the Sootblower Fouling Detection System (SFD). SFD has two primary purposes. The first is to help understand where fouling is occurring in order to optimize sootblowing. The other is to provide real-time data for control systems which will allow for targeted sootblowing. Both of these will result in immediate savings in steam consumption, prevention of tube erosion in areas with little to no buildup and increased boiler efficiency in areas with significant buildup. US Patent No. 14/670,956

Detecting Boiler Soot Buildup
The Sootblower Fouling Detection System is able to monitor the level of buildup within the boiler in real time. As the sootblower lance enters the boiler, instrumentation along the lance delivers feedback to pinpoint where the steam is encountering significant buildup. An increase in the amplitude of the response indicates buildup, and a consistently low-amplitude response shows operators where no buildup is found.

SootBlower Operation Optimization
Let’s take a look at how boilers with and without the Sootblower Fouling Detection System respond to areas of low and high buildup along the path of specific lances.

Boiler with Little to No Buildup
The unmanaged sootblowing system continues to operate at the same rate, no matter what the level of buildup. The system with the Sootblower Fouling Detection System, however, actually finds that there is little to no buildup along the path of this specific sootblower. At this point, this crucial information informs automated controls (or plant operators) to decrease the rate of sootblowing. In the end, the SFD system results in immediate savings due to less steam being used and is an excellent method to prevent tube erosion, which occurs if boiler tubes without buildup are cleaned too often.

Boiler with Significant Buildup
The unmanaged sootblowing system continues to operate at the same rate, no matter what the level of buildup. The system with the Sootblower Fouling Detection System, however, actually finds that there is little to no buildup along the path of this specific sootblower. At this point, this crucial information informs automated controls (or plant operators) to decrease the rate of sootblowing. In the end, the SFD system results in immediate savings due to less steam being used and is an excellent method to prevent tube erosion, which occurs if boiler tubes without buildup are cleaned too often.

For More Information and Pricing Contact:
Ryan Welker
Ryan.welker@itestsystem.com
1.844.TestSys
Integrated Test & Measurement
227 Water Street Suite 300
Milford, OH 45150

For More Information and Pricing Contact:
Ryan Welker
Ryan.welker@itestsystem.com
1.844.TestSys
Integrated Test & Measurement
227 Water Street Suite 300
Milford, OH 45150

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