

SFD

SOOTBLOWER FOULING DETECTION SYSTEM

SYSTEM BENEFITS

- Sootblower Operation Optimization
- Prevents Boiler Tube Erosion
- Provides Real-time Feedback for Targeted Sootblowing

"Cleaning boiler tubes blind is like putting out a house fire by flooding the entire neighborhood" – Matt Satcher, ITM

SFD STANDARD

PACKAGE (24-SBs)

- Stainless Steel Enclosure
- Compact RIO Controller
- 24 IO Channels
- 24 Industrial Sensors
- SFD Software Package
- Installation Documentation

COMMUNICATION

- OPC-DA
- OPC-UA
- ETHERNET/ IP
(ControlLogix Compatible)

For More Information and Pricing Contact:

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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.

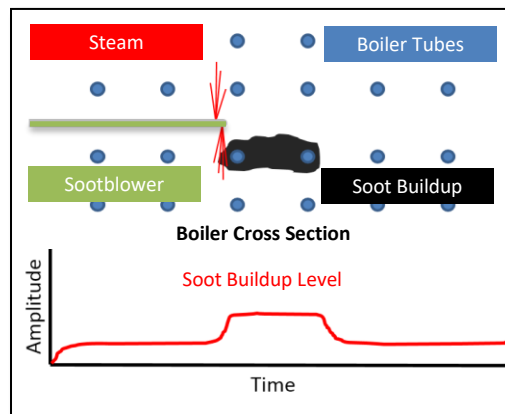


Figure 1: Boiler Cross Section and SFD Output

The upper half of Figure 1 displays a boiler cross section (top view) with soot buildup and an active sootblower. The blue dots represent boiler tubes and the black area represents a clinker. The lower half of Figure 1 shows the sensor output while the sootblower is moving into the boiler. This graph indicates that the soot buildup level increases as the sootblower passes the clinker.

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.



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