Sootblowing, how critical is it?

Coal-fired boiler operators can attest to the critical need to control fouling and slagging of the heating surfaces. Not only does the efficiency and performance depend on clean surfaces, in the worst cases a boiler may need shut down to blast and mine severe slag deposits. In the past, most plants have adopted a qualitative approach to sootblowing. Operators monitored overall boiler operation and gas outlet temperatures and established a time-based blowing program to keep out of trouble. It was more art than science.

Put performance in the driver’s seat

Now you can optimize your sootblowing on the basis of quantitative, measured conditions in which the heating surface cleanliness drives sootblowing. The Babcock & Wilcox Company’s (B&W) Powerclean™ system enables intelligent sootblowing of your boiler. The Powerclean system incorporates B&W’s boiler design and modeling expertise to provide critical performance information and surface cleanliness factors for improved sootblower control. The system provides real-time analysis of slagging and fouling effects on local heat transfer and how that impacts overall boiler performance. This analysis produces effective cleaning strategies that are automated through the Powerclean Expert System. The result is an industry proven solution to boiler cleaning that optimizes system performance and provides quick returns on your investment.

Intelligent Sootblowing

Heat Transfer Manager™ is at the heart of the system

At the core of the Powerclean sootblower optimization system is B&W’s Heat Transfer Manager™ (HTM) model. Heat Transfer Manager is a custom fit performance model of your unit. It is based on B&W’s boiler design technology – a technology that has evolved during 140 years of designing, analyzing and operating boilers. The HTM model allows Powerclean to determine actual boiler and heating surface performance in real time. This critical information, combined with other operating variables are integral to the customization feature of the Powerclean system. The Powerclean system determines where and when to blow soot, and is integrated with the sootblowing control system to automatically optimize cleaning of the furnace and convection passes.

B&W engineers work with plant personnel to optimize the system based on actual boiler data and operator experience.

(Continued on reverse side)
**Features of Powerclean™**

The Powerclean system is designed with a user-friendly graphical interface that permits easy set-up and configuration. Among the design features that B&W has incorporated in the system are:

- Unit specific model – the HTM module is configured specific to your boiler for accurate modeling of boiler performance and heating surface cleanliness
- Provides boiler efficiency, heat rate and furnace exit gas temperature (FEGT) data
- Windows PC-based system
- Integrates easily with distributed control systems (DCS) and historians – Powerclean includes an OPC client
- Operates in advisory mode or closed-loop sootblower control
- Captures and implements best operating practices
- Includes a data historian for trending and analysis

**Benefits of an intelligent system**

B&W’s Powerclean system offers many advantages compared to the conventional time-based manual sequencing of sootblowers:

- Blowing can be focused where it is needed most with potential for savings in steam usage
- Reduced blowing of heating surfaces associated with soot-blower steam erosion to reduce wear
- Reduced or optimized sootblower maintenance
- Improved superheat and reheat temperature control
- Improved control of heating surface fouling and slagging
- Consistency of unit performance across changes in operators
- Allows for dynamic sootblowing control based on boiler load or changes in operating parameters

In today’s operating environment more and more plant owners are implementing advanced systems for improved boiler performance that include optimized combustion and reduced emissions. A natural complement is optimizing the boiler heating surfaces. The Powerclean system is another of many advanced technologies developed and offered by B&W for your boiler.

For more information about B&W’s Powerclean™ system for intelligent sootblowing of your boiler, contact your nearest B&W sales and service office.