

Reinhold Environmental Ltd.



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Babcock Power Inc.



One Source



Many Solutions



One Purpose

Low Burner Optimization

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Overview

- Initial Settings and Configurations
- Optimization Strategies
- Test Support Personnel

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Initial System Settings

- Low NO_x Burner Settings
 - Experience on burner retrofits for various fuels and boilers can establish in-site into the initial burner settings and design
 - CFD modeling can be used of the design conditions to predict the first start-up positions
- Coal Pulverizers
 - Can be tested prior to an installation to determine the actual operation and design conditions
 - At the restart individual pulverizer testing can re-establish the proper settings to match pre-retrofit conditions
- Overfire Air or Auxiliary Air Systems
 - Should be available locally or remotely to be full open as designed or closed as necessary for diagnostics.



Optimization Strategies

- Follow a matrix of key operational and equipment adjustments
- Balancing the oxygen across the width of the furnace and front to rear as required
- Balancing the air and coal distribution to the furnace can minimize pockets CO

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Test Support and Personnel

- Plant participation is critical to ensure success
 - Operational assistance and involvement improves the effectiveness of the tuning process
 - Test coordination for unit load conditions and sample procurement
 - Availability of key personnel to assist with system controls, settings and issues can reduce the optimization time required
- The OEM of the low NO_x equipment must have trained well seasoned service personnel to conduct the optimization
 - Knowledge of total boiler operation is an asset
 - Knowledge of the product and process of tuning is essential



Summary

- A well defined plant improves the process of optimization tuning
- Low NO_x burners are one part of the combustion system, therefore, the entire system is part of a good tuning strategy.
- Air and Fuel Balancing is key to any low NO_x burner application.