

FACT SHEET

# COMBUSTION MODIFICATIONS

Minimizing short-term and long-term impacts on boiler performance, reliability, and remaining useful life

With Intertek's combustion modification program, we can reduce stack emissions ( $\text{NO}_x$ ,  $\text{SO}_x$ , particulate) and improve boiler operation and efficiency.

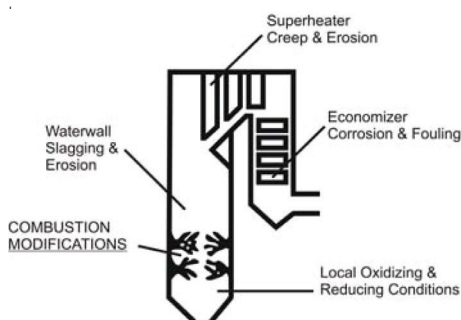


## Combustion Modifications

Potential combustion modifications typically include:

- Fuel change
- Burner changes (e.g., low- $\text{NO}_x$  burners)
- Change in stoichiometry
- Flue gas recirculation
- Sorbent injection
- Combustion and redistribution

These modifications will most likely result in a change in combustion gas temperature and chemistry profiles in the furnace and convective passes.



Do you know the effects of combustion modifications on your equipment?

## The Challenge

The challenge is how to implement the combustion modification and minimize short-term and long-term impacts on boiler performance, reliability and life.

Such impacts result from possible changes in:

- Tube metal corrosion
- Erosion
- Temperature

From an economics viewpoint, an optimization between combustion improvement and equipment impact may be required.

## Our Solution

Intertek's combined expertise in combustion tuning, performance testing, and system reliability and remaining life analysis provides the utility with low-cost solutions.

## Our Approach

The following are typical steps taken to help minimize the impact of combustion modifications on plant equipment while achieving emissions, performance, and operations improvement:

- Establish emissions reduction goals
- Establish performance and operation goals
- Perform boiler component condition assessment

- Install additional instrumentation (as required)
- Establish test plan and conduct field testing (before modifications and after, if feasible)
- Perform technical and economical assessments
- Select optimum combustion modification
- Perform long-term equipment impact monitoring

## FOR MORE INFORMATION

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