

hrl:

Combustion tuning of tangentially fired boilers

A HRL case study



expertise in action



HRL improves tangentially fired boiler performance resulting in major cost savings for Australian Generator

HRL developed and implemented a targeted combustion tuning program to address the identified operational issues.

Challenge

An Australian generator needed assistance with the combustion tuning of one of their tangentially fired boilers. Prior to the combustion tuning, the boiler was experiencing elevated levels of carbon-in-ash, significant economiser erosion, and reduced thermal efficiency.

Solution

HRL developed and implemented a targeted combustion tuning program to address the identified operational issues. HRL's Multipoint Combustion Diagnostic Analysis (MCDA) system was used extensively throughout the combustion tuning project to evaluate the effectiveness of each control system change in a time efficient manner.

Results

As a result of the combustion tuning project, this Australian generator has experienced the following benefits:

- A measurable improvement in boiler thermal efficiency, equating to permanent annual fuel savings;
- A significant reduction of carbon dioxide emissions;
- A reduction in excess oxygen setpoint; and
- Reduction in the flue gas velocity through the economiser.

HRL estimates the savings of the combustion tuning to be between \$0.5 million/annum and \$1 million/annum, including the reduction in maintenance effort and forced outages attributable to fly ash erosion. HRL is currently working with this client to explore options for further optimisation of the combustion for this boiler and the remaining boilers at the client's site.

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