Finspångs Tekniska verk

Application: Smoke tube boiler
Efficiency solution: Infrasound Cleaning
Cleaning area: The entire boiler

General info

Plant: Recycling center
Boiler: KMW, grate
Fuel: Wood chips & forest residue
Capacity: 15 MW_{th}

Installation

Type: 1 x APM350
Year of installation: 2008

Situation description

Before installing the infrasound generator there were two audible sonic horns installed on the smoke tube boiler. These caused much noise and had a poor cleaning effect.
The boiler had to be shut down at least 4 times per year for manual cleaning of the smoke tubes. The deposits on the tubes resulted in a quick increase in flue gas outlet temperature, from 130 °C to 250 °C.

The problem with deposits was most obvious at low load, resulting in only a few weeks of operation before having to stop for manual cleaning.
When installing the infrasound generator the audible sonic horns were shut off.



Figure 1. The installed Infrasound cleaner (blue).

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Results

- **In total, 5-10 % higher production** is what Finspångs tekniska verk has calculated as the result of installing the infrasound generator.

- **A few weeks after installing the infrasound generator the cleaning effect was obvious**. The flue gas outlet temperature that used to rise quickly at low load stabilized at 130-160° C. Using the infrasound generator eliminated this bottleneck in the production process, which increased the availability and efficiency of the boiler. The flue gas outlet temperature has been stable around 180-190° C the whole season. Due to the good results a second infrasound generator was ordered and installed on the 10 MWth Waste-fuelled boiler at the plant.

- **Drastically reduced the need for manual cleaning**. When using wood chips as fuel there is no need for manual cleaning of the boiler. Before using the infrasound generator manual cleaning was necessary at least 4 times per season.

- **It is now possible to use cheaper fuel**, which leads to big savings. In 2011 Finspång started using forest residue as fuel. Using this fuel causes some deposits at the inlet of the smoke tubes so the inlet is cleaned manually when cleaning the grate 2 times per year.

Under references at www.heatmanage.com, you can read about our technical and economical results for many of our projects.

We have gathered our knowledge based on our long experience of infrasound technology compared to conventional methods such as steam soot blowing, shot cleaning, compressed air soot blowing and audible sound (sonic or acoustic horns) in several "white papers" available under references.

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