Heat Management

TVOP
Samut Pakran, Thailand

Application: Grate fired Biomass Boiler
Efficiency solution: Infrasound Cleaning
Cleaning area: One-Pass Smoke Tube Boiler & Water Tube Economiser

General info

Plant: Thanakorn vegetable oil
Boiler: 4x Biofuel boilers
Fuel: Palm shell and wood pellets
Capacity: 20-40 MWth

Installation

Type: 3xAPS350 & 1xAPS150
Infrasound cleaners
Year of installation: 2024

Situation description

The customer has 4 biofuel boilers, made by Getabec. Boiler 1-2 uses wood pellets as fuel and boiler 3-4 uses Palm shell. Before installing infrasound cleaning, the customer used steam sootblowing 2-3 times per day at the fire tube inlet and in their economisers.

The customer used the sootblowers every 8 hours everyday. Their goal was to increase availability to avoid production loss when they need the four boilers running at the same time. They also wanted to reduce downtime and fuel consumption, and save steam & maintenance costs.



Figure 1. Infrasound Cleaner installed on the customers application (Boiler 1)

Despite having a steam sootblower at the inlet of the fire tube boiler, the fire tubes got exposed to heavy fouling, requiring manual cleaning every 4 months with palm shell and every month with wood pellets.

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Results

For Boiler 1 & 2:
The performance test required achieving three months or better availability compared to one month before installing Infrasound cleaning. Operational data was monitored closely, e.g., flue gas outlet temperature and visual inspection was also regularly performed.

For Boiler 3 & 4:
The goal was to extend from 4 months availability to 6 months availability with Infrasound cleaning and the customer has confirmed that the goal was fullfilled.

The result was finalized and was determined to be the following:

- Steam sootblowing was decreased from three times per day, to one time per day.
- Fuel consumption decreased due to cleaner heat transfer surfaces and lower sootblowing steam consumption.
- High financial savings for the customer - with a swift ROI
- Extension of operation time according to the goals

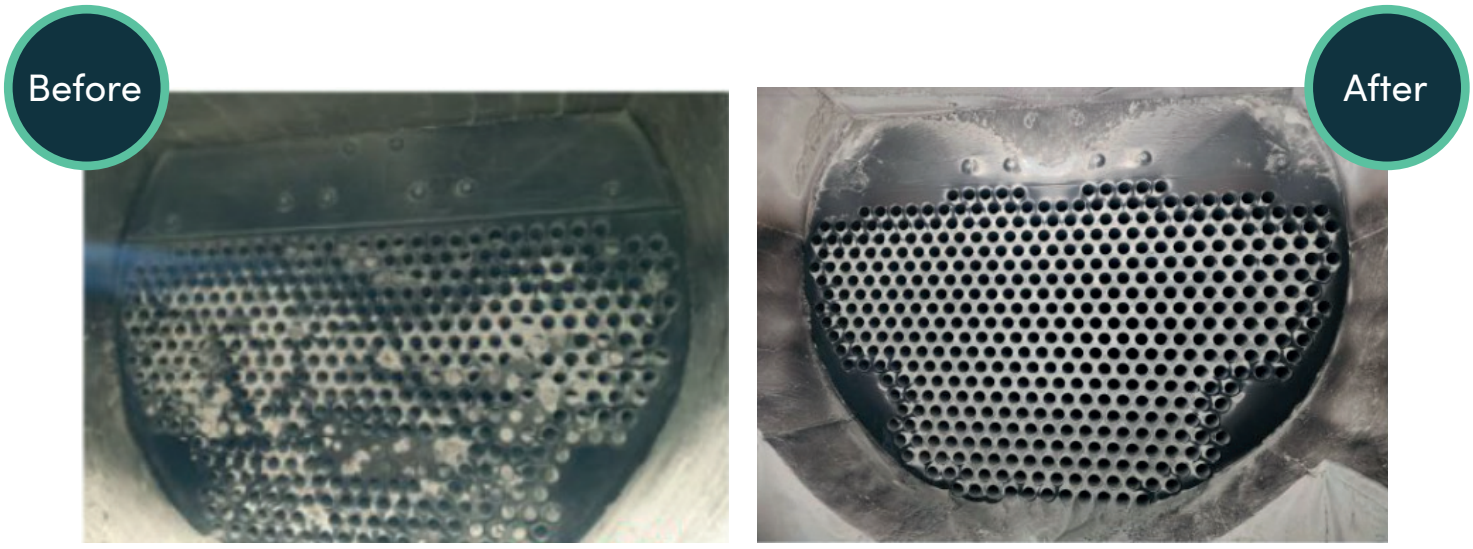


Figure 2. Outlet of smoke tubes before and after the installation of Infrasound cleaner on boiler 1

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PICTURES FROM SITE







Figure 3. three images showcasing an Infrasound Cleaner installed on the customers application

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PROCESS DATA

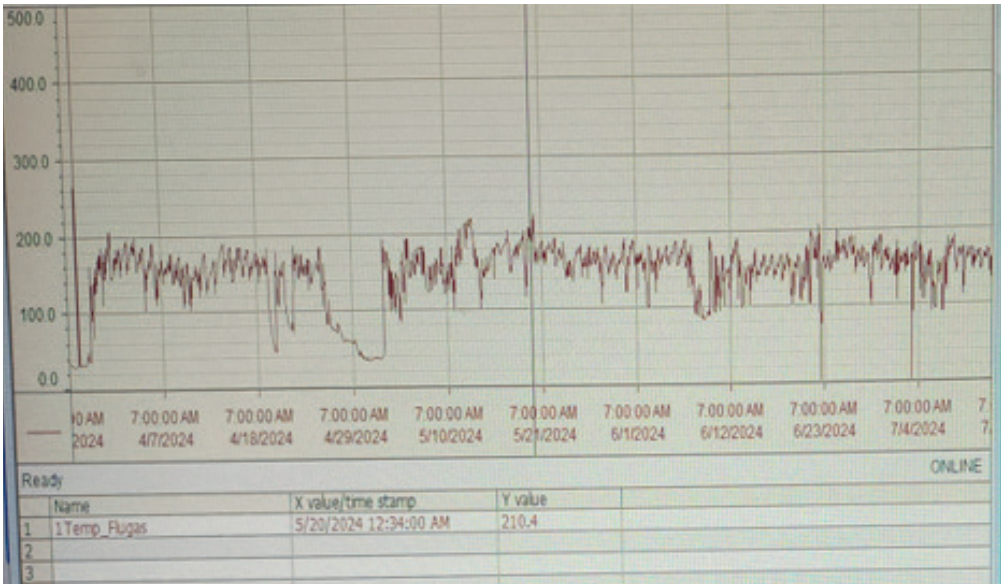


Figure 4. Flue gas temperature after Economizer

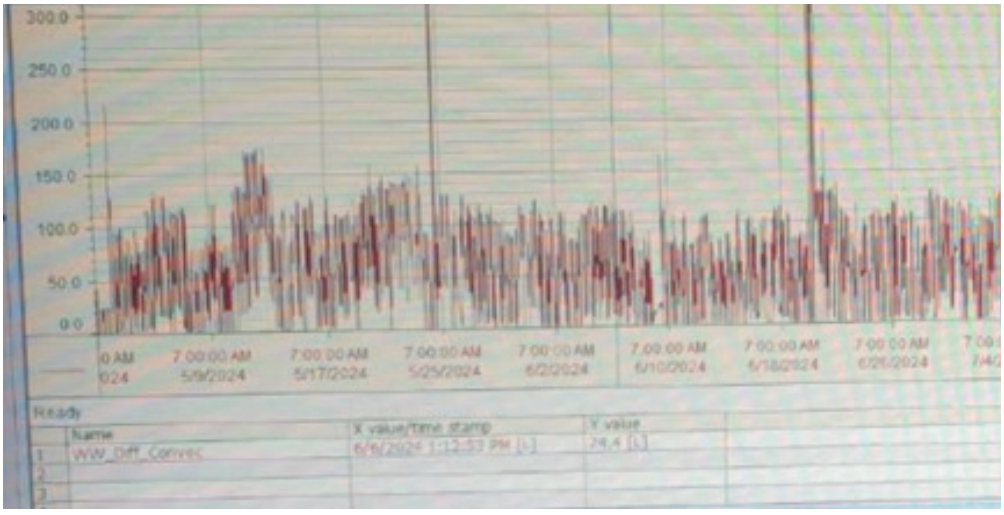


Figure 5. Diff pressure between inlet and outlet fire tube

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