Heat Management

# Vattenfall Nyköping

Efficiency solution: Infrasound Cleaning

Cleaning area: Finned tube economizer and air preheater

## General info

Plant: Heat and power plant

Boiler: Weiss BFB

Fuel: 90 % demolition wood, 10 % wood chips

Capacity: 105 $MW_{th}$

## Installation

Type: 2 x APX7000

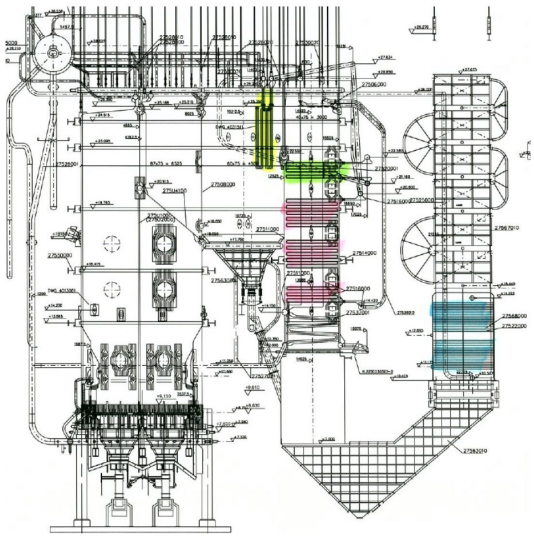
Year of installation: 2012

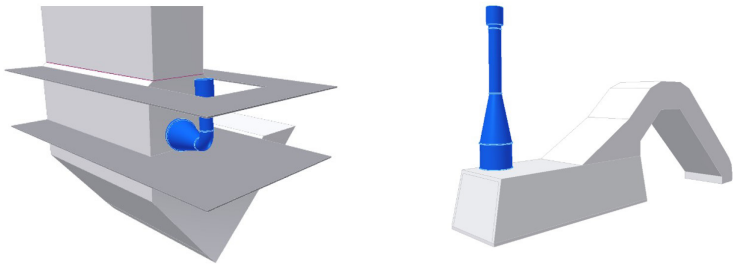
## Situation description

The reason for installing the Infrasound generators was that the steam soot blowing caused extensive damage to the tube bundles, resulting in unplanned stops for repairs. Steam soot blowing was used three to four times per 24 h. Two Infrasound generators were installed, with the ambition to eliminate the need for steam soot blowing in the economizer and tubular air preheater.

The vertical back pass has 2 economizer tube bundles with finned tubes and 6 air preheater tube bundles. The flue gas temperature into the economizer is ~500 ° C.

Automatic explosion cleaning was at the same time installed in the superheater region for cleaning the superheaters without the use of steam soot blowing.





Side-view of the boiler. Economizer marked blue, tubular air preheater above the economizer. One infrasound generator is standing on top of the back-pass, and one is installed just after the 180-degree bend before the economizer.



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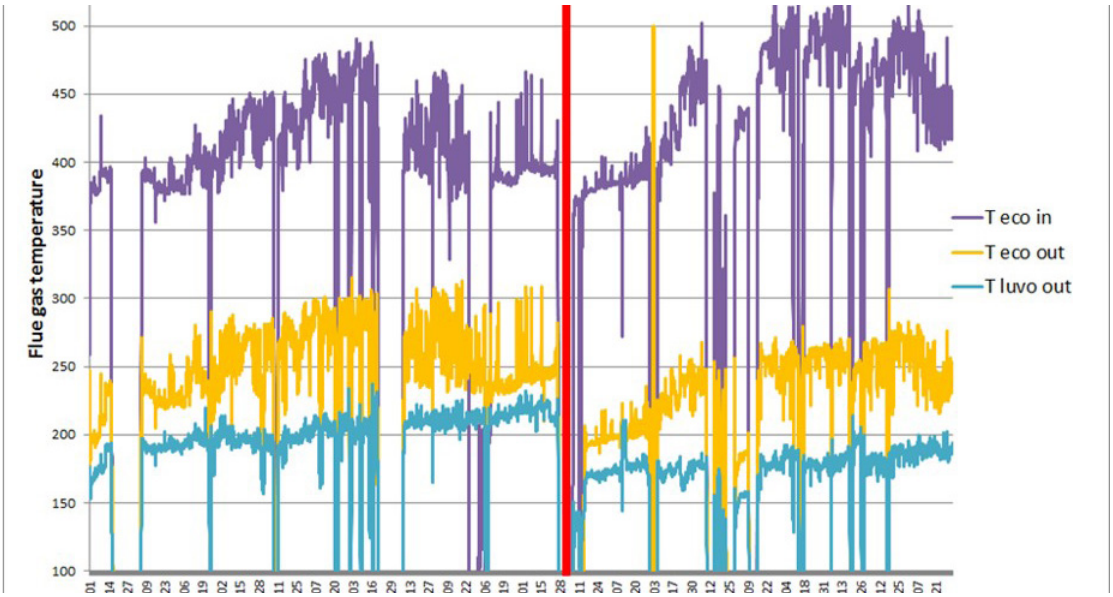
Results

- Eliminated the need for steam soot blowing. The infrasound generators have eliminated the need for steam soot blowing in the economizer and air preheater, resulting in considerable savings compared to the previous situation with frequent repairs of tube leaks caused by stem soot blowers.

- Stable operation. The temperature trends below reveal that the boiler now operates with more stable and lower flue gas outlet temperature than when using steam soot blowing.



Tube damages were caused by steam soot blowing, forcing Vattenfall Nyköping to shut down the boiler for repairs.




Temperature trends before and after commissioning the infrasound generators in September 2012. The flue gas outlet temperature of both the economizer and the air preheater ("luvo") are lower than before installing the infrasound generators, despite the inlet temperature being higher



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