Heat Management

Mondi Stambolijski

Application: Black Liquor Recovery Boiler
Efficiency solution: HISS™ - Overlapping sootblowing
Cleaning area: Superheater, economizer and boiler bank

General info

Mill: Mondi Stambolijski
Boiler: Recovery Boiler
Fuel: Black Liquor
Capacity: 504 tDS/day

Installation

Type: HISS™ Advanced
Year of installation: 2023

High Impact Sootblowing System (HISS™)

As over 90% of the sootblowing occurs on the first impact of the steam at on the heat exchanger surfaces, traditional sootblowing, in both forward and reverse direction, is inefficient. Heat Management's HISS™ takes advantage of this, by only sootblowing in one direction. By controlling each sootblower's steam valve, HISS™ reduces steam flow to a minimum for securing lance cooling in the other direction. The solution also enables the next sootblower to start when the previous is sootblowing, which is called "Overlapping sootblowing". This enables a 50% shorter sootblowing cycle with at least 40% reduced steam consumption.

Situation description

The Customer was investigating steam savings initiatives in the recovery boiler and also looking for possibilities of future increases in the recovery boiler load. HISS™ was chosen to reduce the steam consumption of the steam sootblowers. The technology also gives the user the possibility of increasing the sootblowing cleaning capacity, to maintain high availability at an increased recovery boiler load.



Figure 1. The mill's Recovery Boiler

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Figure 2. Pontus Linder and Mondi Stambolijski

(Left: Pontus Linder. Middle: Georgie Zagorski, Right: Svetoslav Georgiev

”We are very pleased with the results of the HISS™-installation and the project with Heat Management”.

Svetoslav Georgiev, Process Manager.

Results

Following the implementation of HISS™ in 2023, results has been established.

- Reduced steam consumption for sootblowing with more than 40%
  - Steam has also been saved in the pre-heating cycle thanks to Smart Heating™
- 12% additional sootblower starts.
- Reduced time duration of sootblowing by approximately 50%
- Reduced consumption of Natural Gas
- Evened out disturbing preassure variations on the steam net

The trends before and after installing HISS™ is illustrated in a graph below, where the dotted line represents the customers sootblowing steam flow before implementing the technology. The solid green line, representing sootblowing steam flow with HISS™. The result is a faster sootblowing cycle, consuming less steam and causing less wear on heat transfer surface.



Figure 3. Sootblowing steam flow over time with and without HISS™

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