

DOMTAR – ROTHSCHILD MILL 2018
PPSA INNOVATION PRESENTATION
“WITCHES HAT STRAINERS”



Domtar

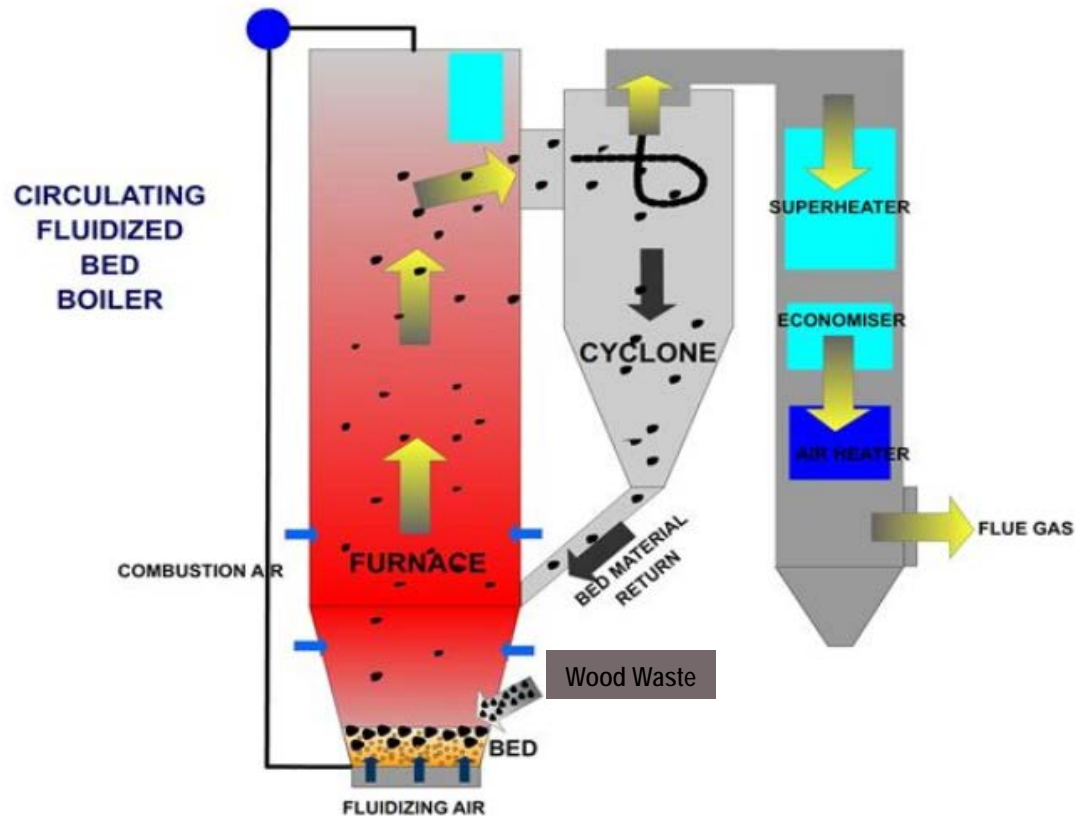
BACKGROUND

- The Domtar Rothschild Mill employs approximately 410 employees, produces 380 tons/day of non-coated paper, and 200 tons/day of pulp.



BOILER

- The Mill operates a circulating fluidized bed boiler which burns approximately 1,500 tons of wood waste per day to produce steam and electricity.



BOILER ASH REMOVAL

- The furnace operates with a bottom ash bed that is essentially molten sand at about 1500 degrees.
- The sand bed level needs to be maintained at an optimal level. However as wood waste is received there is sand/dirt embedded in the wood which accumulates in the sand bed. This excess sand and ash need to be removed from the bed through 4 bottom ash chutes.



RODDING THE CHUTES

- Large chunks of agglomerated sand or spalled furnace refractory. These large chunks tend to plug the four bottom ash removal chutes.
- Our safety challenge came into play when the chutes plug and they needed to be manually rodded to avoid unplanned outages and boiler upsets.
- This is an intense manual task. The material that comes out of the chute is red hot and can flow in the direction of the people doing the rodding.
- The operators wear aluminized suits head to toe when conducting this task. The suits are clumsy and hot inside.



Rodding - edit.wmv



Rod Stuck - edit.wmv

THE SOLUTION

- Over the past year, Tom witnessed and assisted operators attempting to rod plugged boiler bottom ash chutes at least a dozen times and recommended that simple strainers be fabricated and attached to the inlet of each of the four chutes.



Pic 1: Furnace Bottom with rows of air nozzles surrounding one of the four bottom ash outlets that has been fitted with a simple "Witches Hat Strainer". For reference, the outlet pipe is 12" in diameter. The "Witches Hat Strainers" are five $\frac{3}{4}$ " thick, 16" long stainless bars welded together to form a teepee.

THE SOLUTION



Pic 2: Close up of "Witches Hat Strainer" on one of the four ash drain pipes

RESULT

- A trial “Witches Hat Strainer” was fabricated and installed on one of the four chutes during the 2017 spring (May) boiler outage. That chute did not plug all summer and the strainer was still holding up well when inspected during the 2017 fall (October) outage. At that time, the decision was made to install similar strainers on the other three chutes as well.
- Since October, 2017 when all four outlets were fitted with the “Witches Hat Strainers”, **ZERO** chutes have plugged and **No Rodding** has been necessary. The innovation has completely eliminated the problem and the dangers associated. They’re simple and inexpensive, but very effective. It’s a huge improvement for the plant.

THE FIBER *of* Domtar

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