

Crenshaw Machine Systems Retractable Liquor Gun Mount

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Recovery Boiler Blowback

- Black liquor into furnace to create steam & recover cooking chemical
- Airflow managed by FD and ID fans
- Blowback caused by change in pressure inside the boiler
 - Operated at slightly negative pressure
- Hazards to employees
 - Flame and slag exiting boiler caused by furnace pressure change
 - Startup & shutdown high potential for blowback

Normal
Operation



Blowback

Proactive Recognition of the Hazard

- Implemented as strategic planning, not as response to injury
- Preventative solution aimed at reducing employee line of fire exposure
- Mechanical design reduces exposure for both operations and maintenance personnel
- Employee Engagement: hourly/salary worked together

Solution

- Worked with liquor gun nozzle supplier
- Crenshaw Machine Systems
- New cradle created
- Trial RB #1 2016, liked and installed
- RB #2 installed 2017
- Cost ~ \$9,000 each



Retraction Mechanism

Angle Adjustment

Locking Mechanism

Rail Cover

Adjustable Rail Lock





Slag from Blowback
RB1

Old Liquor Gun Mount
10" from Boiler Wall

New Liquor Gun Mount
28" from Boiler Wall here, adjustable

New Nozzle, 60" from front flange to bend



Old Nozzle, 30" from front flange to bend

Gained 30" spacing away from the boiler opening

New nozzles and cradles in operation with shields and “special PPE” labeled area

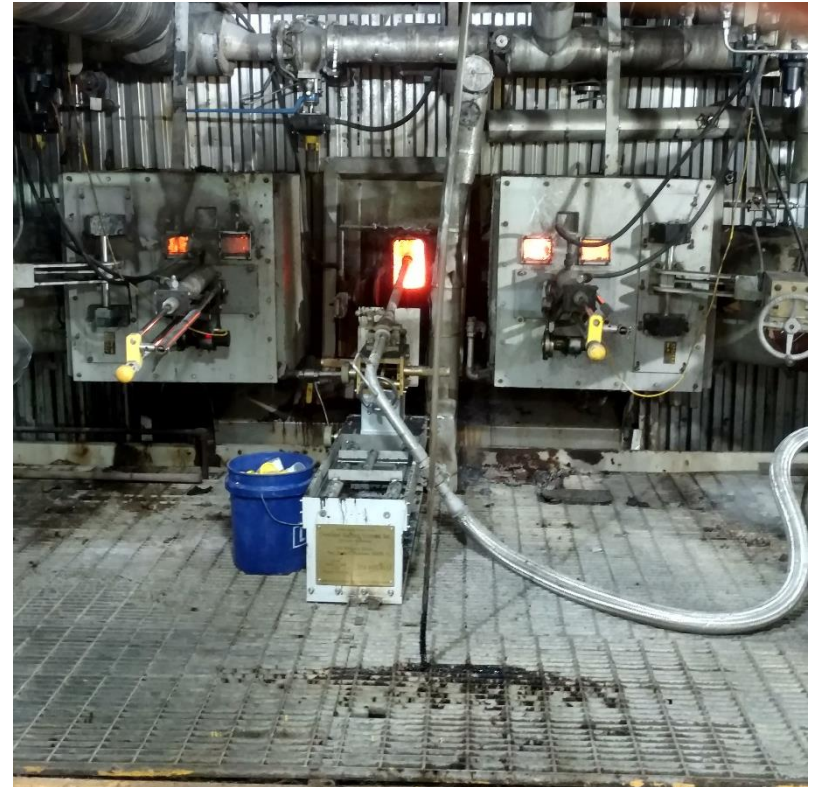
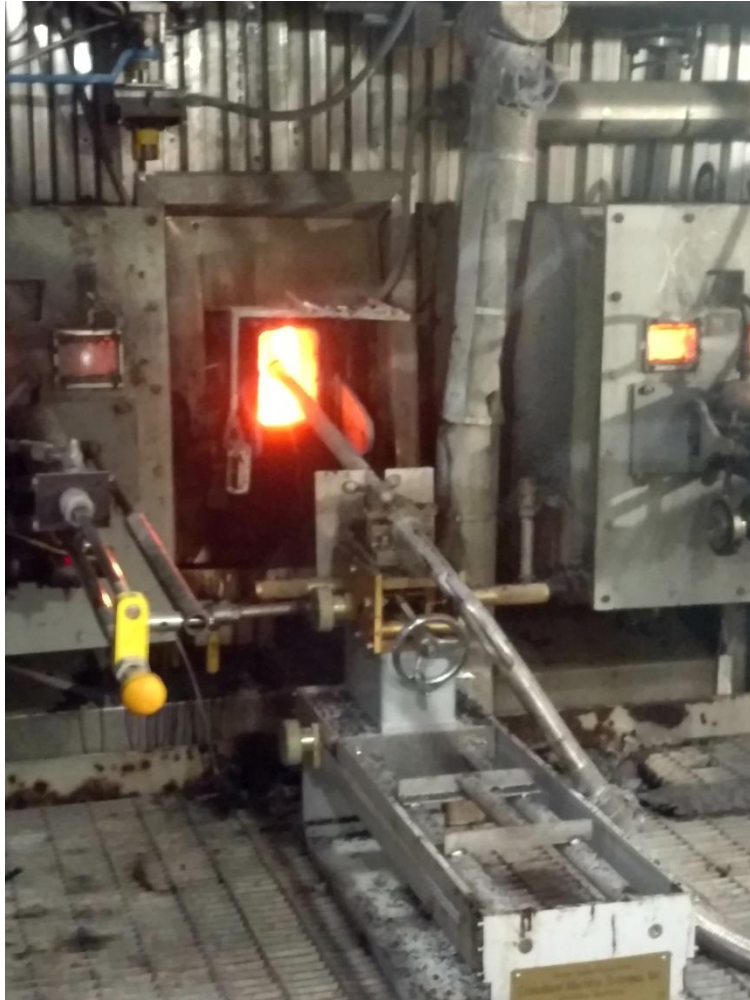


RB #2



RB #1

Most dangerous zone improved; RB #2 liquor gun #3



5 Gallon Bucket for scale on close
quarters

Questions?

