



SUMMARY

Goals:

- Improve energy efficiency
- Eliminate excessive maintenance
- Eliminate tank damage due to vibration and hammering

Accomplishments:

- Consistent temperature control
- Uninterrupted operation
- Eliminated unscheduled downtime
- Eliminated vibration and hammer

A linerboard mill in Florida needed to improve energy efficiency over their current tank sparging system and eliminate repair and maintenance to the tank from sparger vibration.

The current green liquor supply tank was being heated with a sparge system. It has a large diameter (45') and is shallow (filled about 7'), which results in a large amount of heat loss to its surroundings. The sparger nozzles exhibited vibration and hammering that damaged the tank wall and required regular maintenance.

CONDITIONS

Fluid:	Green Liquor
Flow Rates:	950-1100 GPM [216-250 m ³ /hr]
Inlet Temperatures:	165°F [74°C]
Discharge Temperature:	190°F [88°C]
Fluid Supply Pressure:	25 psig [1.7 barg]
Steam Supply Pressure:	60 psig [4.1 barg]

SOLUTION

Hydro-Thermal installed a K414AN Hydroheater in-line between the supply tank and slaker. The heater was customized for green liquor and required surface-hardened internal material for improved wear resistance. Start-up services were provided to tune the heater for the range of operating conditions from cold start (high demand) to normal continuous heating for above conditions. The heater is providing consistent temperature control and operating continuously.

The Hydroheater has been in continuous service for 5 years, with the mill performing annual maintenance inspections (seal replacements), and rebuilds approximately every 2 years (replacement of internal parts). Operation has been consistent and rebuild sequence has avoided unscheduled downtime of the heater.