WHITEWATER HEATING

UPM

Blandin Paper Company in Grand Rapids, Minnesota, USA, needed to heat a 50,000 gallon whitewater system from 80-110°F [27-43°C] in 30 minutes to bring machine #6 up to speed as quickly as possible.

SUMMARY

Goals:

- Consistent temperature control
- Hot water on demand

Accomplishments:

- Precise temperature control
- Eliminated need for external recirculation pump
- Reduced maintenance
- Achieved stable operation

CONDITIONS

Fluid:	Whitewater
Flow Rates:	Variable
Inlet Temperatures:	80˚F [27˚C]
Discharge Temperature:	110˚F [43˚C] startup, 190˚F [88˚C] boilout
Fluid Supply Pressure:	Static head on whitewater chest
Steam Supply Pressure:	45 psig [3.1 barg]

SOLUTION

Hydro-Thermal® decided to duplicate the heating system installed in 1975 on the #5 machine. Both systems now utilize a 6" [150mm] Hydroheater® installed outside the whitewater chest to heat and recirculate whitewater in the chest. The motive force provided by the high-velocity steam jet in the Hydroheater eliminates the need for an external recirculating pump. The Hydroheater varies its steam flow depending on each of the three heating applications' requirements: startup, system temperature maintenance, and boil out.

The Hydroheater on the #6 machine performs three essential functions. First, it provides the highest possible heat transfer efficiency of steam energy into the whitewater. Second, it eliminates the need for a recirculation pump and associated energy and maintenance requirements. Third, it eliminates the problems of inefficiency and maintenance associated with in-tank sparging systems. Since 1975, the Hydroheater installed on the number 5 machine has operated with minimal maintenance.

Need more information about Hydro-Thermal products?
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HH-050 RevB/2012