

THINK “GREEN”: Smart Plant-Floor Water Solutions



MALISKO ENGINEERING was chosen to design and install an “on-demand” water heating system to supply hot water to hose stations and utility sinks at a national aluminum can manufacturer. The plant project team required an eco-friendly approach to utilize heating sources already available in the facility. The resulting Malisko design met and exceeded the plant’s expectations on many levels. Most importantly, however, this project demonstrated how to utilize existing technology to develop a truly “Green” solution.

Existing System:

- The plant had previously relied on a separate natural gas boiler to heat incoming city water
- The standalone boiler system was unreliable, costly to operate and maintain, and did not provide consistent temperature control

Our Design Approach:

- Utilize a plate-and-frame heat exchanger to heat incoming city water with existing 250°F boiler water
- Temperature, pressure, and flow indicators installed on the discharge side of the heat exchanger
- PID-controlled modulating valve installed on the boiler water supply side of the heat exchanger

- Flow Switch installed on discharge side of the heat exchanger for system demand detection
- HMI designed with operator-selectable temperature set point along with in-process temperature and pressure indication
- System shutdown alarms programmed for High Temperature and High Pressure conditions

Startup:

- Main boiler supply and return lines were “hot-tapped” to avoid costly downtime
- Skid delivered partially pre-assembled to reduce onsite installation time
- 90% of the new piping was pre-fabricated
- PID and flow detection tuning accomplished under low, medium, and high demand periods
- Process piping was painted, insulated, and labeled to match existing

The Malisko Impact:

- Plant maintenance personnel and operators alike saw superior system performance immediately following startup
- The water was consistently hot and provided adequate temperature control in all ranges of demand
- This system was designed with scalability in mind, thus providing the plant with future expansion capacity for other hot water systems
- Anticipated project payback is less than 1 year due to decreased energy usage (natural gas), increased operator productivity, and decreased maintenance time

For More Information, please contact:

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