FLU-ACE®

Food & Beverage

BENEFITS

▶ Natural gas savings of over 12%

▶ Supplied as a design/build turn-key solution

▶ Savings validated by 3rd party

▶ Project funding successfully obtained from local utility

▶ Reduced CO_2 emissions by over 480 tons per year

FLU-ACE® Condensing Heat Recovery from Steam Boiler

Thermal Energy International (TEI) evaluated the feasibility of reducing natural gas consumption by applying waste heat from the plant's steam boiler exhausts. Even though an in-line feedwater economizer was already in place, TEI calculated that there was potential to recover the remaining waste heat and put it to good use, saving approximately $60,000 per year.

Supplied as a full turn-key solution, TEI designed and installed the FLU-ACE® to displace process steam demand by preheating reverse osmosis (RO) water from raw water temperatures as low as 60°F to 125°F or higher with the boiler exhaust waste heat.

The FLU-ACE® system was designed to recover up to 2.0 MMBtu/h. Waste heat recovered from the boiler flue gases in the form of hot water was delivered to the process through a stainless steel piping circuit running from the FLU-ACE® heat recovery unit.

The FLU-ACE® system was designed to be fail-safe and completely redundant to the existing boiler and plant heating systems. The heat recovery system itself is installed in parallel to the existing boiler stack so to have no impact on the operation of the boiler. The waste heat delivery system and secondary RO water heat exchanger are installed 'upstream' of existing heating systems. No existing heating systems were removed.

Working with the local utility's consultant, TEI helped the cleient obtain a $75,000 rebate from the utility supplier towards the project.

"After operation of almost a year, the FLU-ACE® continued to deliver promised energy savings, requiring virtually no attention from operation or maintenance staff. We have since purchased two additional turn-key FLU-ACE® systems following the success at the Oakland facility."

- Principal Resource Engineer