

Twin River Technologies - Quincy, MA



TRT is a manufacturer of fatty acid compounds used in many consumer products from detergent to food additives. Their process is dependent on high pressure steam generated by burning heavy fuel oil as well as a byproduct of their manufacturing process that has characteristics much like heavy fuel oil. With the cost of fuel oil increasing and potential to sell their byproduct for a profit, the time was right to consider a change to Natural Gas as a primary fuel for steam generation. The process involved many iterations of burner selection to get the emissions desired by the state of Massachusetts but not burden the operators with unnecessary control and operational limitations needed by most Ultra low NOx burner equipment today.

With the involvement of plant engineers, the customer's environmental engineering team and the State DEP, a selection was made that included a standard low NOx burner, new wind box, new forced draft fan, new fuel trains and a new burner management system for each of the two boilers in the plant. Facilitated by **BMR Thermal**, Low NOx burners were supplied by a major manufacturer for dual fuel firing with the capability to fire Gas, Heavy Oil-Natural Oil Byproduct (NOB) blend or #2 fuel oil.



Boiler #1 Burner before retrofit



Boiler #1 with new burner installed

Because the high pressure steam was so critical to the process and burning gas every day would save the company money, the project was put on a fast track with installation and start up work going 24/7 until the steam supply was reliable and the boiler handed back over to operations.

The customer's contractor, Engineered Systems Inc. of Berlin, ME did an outstanding job keeping the project moving even when faced with unforeseen difficulty like having to drop the new FD fan and motor assembly in through the roof of the building 5 stories up.

In the end, the customer was very pleased with an on time start up making all performance and emission requirements and simplifying the boiler operation. The retrofit allowed the customer's smaller boiler to make name plate capacity that had not been seen in many years. This also meant that midrange steam demand conditions could be satisfied with the smaller boiler alone.

Along with burner equipment and burner management systems, BMR Thermal also supplied exhaust equipment including dampers and expansion joints through **Industrial Environmental Systems (IES, inc)** and a rental boiler through **Nationwide Boiler**. BMR also provided operator training prior to arrival of the burner equipment.

TRT will be saving money in fuel, atomizing steam, fuel tank and line heating, boiler cleaning and maintenance and will have much cleaner emissions as a result of the project.



New Boiler #1 Draft Damper



75,000 PPH Rental Boiler