

Electrode Boiler Installation – 36,000 KW

RJ Reynolds Tobacco Company – Whitaker Park, Winston Salem, NC

The Opportunity

RJ Reynolds Tobacco (“RJR”) was searching for ways to reduce and manage their energy costs and they started by focusing on reducing their steam costs.

Client Objective

RJR was facing unpredictable steam costs due to volatile natural gas pricing and gas availability at their Whitaker Park Plant. The facility was experiencing gas curtailments of 2 to 4 months per year, which was forcing them to burn oil. RJR’s management wanted to have more control over their steam costs and adding an electric boiler did this by providing them a competitively priced fuel switching option.

The Solution

Peregrine performed an analysis of RJR’s seasonal steam usage by comparing the cost of making steam with natural gas and oil to that of making steam with electricity. Even though the existing gas boilers were base loaded and operated at high capacity factors, they still had approximately 20 % of the fuel input energy going up the stack. To achieve lower energy cost through improved efficiency, Peregrine proposed an electric boiler. This 36 MW electrode boiler has a 99% efficiency throughout its entire operating range. The electrode boiler is capable of supplying 50% of RJR’s steam load. The electrode boiler will provide a fuel switching option and significantly reduce steam costs with a payback of less than 18 months.

The following is an overview of the Peregrine scope of work:

- Evaluation, engineering, procurement, and installation services
- Eaton 15 KV High Voltage disconnect power switch
- Precision Model HVJ-448 electrode boiler rated at 36,000 KW capable of producing 120,000 lb/hr of steam at 13,800 volts
- 300 foot plus underground HV electrical duct bank
- 25 ft x 30 ft x 35 ft high building
- PLC Boiler and utility interface controller
- Start-up and operator training



Bringing Business Sense to Every Project