

Electrode Boiler Installation – 18,000 KW

Mitsubishi Polyester Films, Greer, SC

Client Objective

Mitsubishi, as a world-class manufacturer of polyester film, was facing increasing competition from U.S. based and overseas producers. Energy costs had risen significantly with the recent increase in natural gas pricing and Mitsubishi wanted to better manage their energy cost.

The Opportunity

Mitsubishi was searching for ways to reduce their energy costs and they started by focusing on reducing their consumption of high cost natural gas by installing an electric boiler.

The Solution

Peregrine performed an analysis of Mitsubishi's steam usage that compared the cost of making steam with natural gas to that of making steam with electricity. Mitsubishi's process requires 600 psi steam, which is too high a pressure for an electric boiler. However, the majority of this steam (60%) was reduced to 150 psi by a pressure reducing valve. Peregrine proposed a Precision HVJ-328 electrode boiler, which was capable of supplying their entire 150 psi steam load. This would reduce their gas purchases by one-half. Peregrine provided all design, procurement, construction services, start-up and training in a turn-key lump sum contract. The project saved enough in gas costs to pay for itself in less than 18 months.

The following is an overview of the scope of work:

- New 25 ft. x 30 ft. (30 ft. high) foundation and building.
- Over 200 ft. 18,000 KW electrical feed routed in existing and new cable tray.
- Precision Model HVJ-328 electrode boiler rated at 18,000 KW capable of producing 60,000 lb/hr of steam at 13,200 volts.
- Allen Bradley PLC controller tied directly into Mitsubishi existing boiler control system for remote operation.

