Resistance Boiler Installation – 2,500 KW

Pardee Memorial Hospital, Hendersonville, NC

Client Objectives

With the rising costs of healthcare, Pardee Memorial Hospital is always looking for ways to reduce costs without impacting the quality and reliability of services. Pardee was using three natural gas/fuel oil boilers to produce its steam for creature-comfort heating and sterilization of medical devices. The hospital was facing a sharp rise in energy cost with the recent increase in the cost of natural gas and No. 2 fuel oil.

The Opportunity

Pardee requires low pressure steam and had adequate room in its existing boiler house for the addition of an electric boiler. The local electric utility also had adequate electrical capacity only 300 ft. away to serve the electric boiler.

The Solution

Peregrine analyzed the hospital's steam usage and determined that a 2,480 KW 480 volt electric boiler would be capable of supplying all of the hospital's steam needs during the coldest periods. Peregrine located the boiler in the corner of the existing boiler room and tied directly into the nearby steam header, condensate and feedwater lines. An underground electric duct bank was run approximately 60 ft. to a pad-mounted transformer, which had minimal impact on limited parking space. The boiler operates in a lead lag condition with the existing natural gas-fired boilers and the hospital will save enough in gas costs to pay for the project within 17 months. The following is an overview of the scope of work:

- A Precision resistance boiler rated at 2,480 KW at 480 volts. The boiler will generate 8,460 lb/hr of steam at 212^{o} F.
- Boiler tie-ins will include main steam header, feedwater line, blowdown line.
- 4,000 amp transformer 12,470/480 volt and a 480 volt electrical feed buried in a 60 ft. of electric duct bank.
- Seimen boiler controls capable of communicating with the hospital's existing boilers as well as the electric utility's power signal communicating hourly electric pricing.

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