

MEP Design – Health Care New York Presbyterian – Westchester Division Boiler Plant Upgrade White Plains, New York

Program

NYSEDA FlexTech Feasibility Study and follow-up implementation services directly with the client

Scope of Services

- FlexTech Feasibility Study
- Infrastructure & Physical Needs Assessment
- Design Services
- Construction Administration Services
- Incentive assistance

Level of Involvement

Prime Contractor

Facility Size

600,000 sq. ft.

Facility Type

Psychiatric Health Care

Project Results

- Replace direct buried pipe
- New burner with O₂ trim controls
- Install summer boiler
- Install separate boiler for cottages
- Install efficient motors in central plant
- Repair and insulate bare steam and hot water piping

Projected Annual Savings

Electric Demand: 54 kW

Electric Consumption: 177,523 kWh

Thermal: 13,583 MMBtu

Energy Cost Savings: \$256,449

New York Presbyterian Hospital – Westchester Division (NYPH/WD) is a 276-bed, acute psychiatric facility that occupies multiple buildings with approximately 600,000 square feet of floor area on a 215-acre campus. The facility was founded in the late 19th century and most of the buildings are historically landmarked by the City of White Plains which limits the type of retrofits that can be performed, particularly to the envelope.

EME Group completed a detailed feasibility study and then went on to provide the engineering and construction administration services to implement three projects from this energy study. NYP opted to pursue three of the



New York Presbyterian – Westchester Campus Boiler Plant

recommendations from the report.

The boiler project involved installing a 300 hp high pressure steam boiler to operate in the summer and shoulder months to more efficiently meet the required turn-down ratio of the non- heating season steam demand. Based on recorded boiler plant log data, the summer load averaged 10,000 lbs per hour where as the existing boilers are sized at 25,000 lbs per hour each. During low load, the existing boilers were unable to efficiently meet the steam load and unable to operate at the lowest loads without excessive cycling. due to non-peak weather and for the areas (administration, offices, day clinics, etc) of the hospital that are unoccupied at nights and weekends.

We tested the two functioning burners and found that they fire with combustion efficiency ranging from 70.8 to 74.6%. The second project involves installing a high efficiency burner with oxygen trim controls to enable the boiler plant to more efficiently generate steam at the various loads during the heating season.

The third project is the replacement of six 5-hp motors; five 25-hp motors; two 40-hp motors; and two 20-hp motors serving the heating hot water, chilled water and condenser water pumping systems.