SEPTA Midvale
Combined Heat & Power Plant

PROJECT INFORMATION

CONCORD DIVISION
Power & Infrastructure

PROJECT LOCATION
Philadelphia, PA

MARKET
Transportation

SERVICES
Engineering Design

CONSTRUCTION COST
$22 Million

ABOUT THE CLIENT

The Southeastern Pennsylvania Transportation Authority (SEPTA) is a regional public transportation authority serving 4 million people in the Philadelphia region. SEPTA operates rapid transit, commuter rail, light rail, bus and electric trolley services while maintaining and expanding existing infrastructure. The SEPTA rapid transit system is the sixth largest in the United States.

PROJECT SUMMARY

Concord performed an evaluation of the SEPTA Wayne Junction electrical infrastructure to identify the benefits of installing onsite power generation. The study provided a comprehensive assessment of the 25 Hz traction power system feeding SEPTA's Philadelphia corridor as well as providing recommendations to increase system resiliency and decrease utility costs. The proposed solution was a new Combined Heat and Power Plant consisting of two (2) 4.4 MW internal combustion engine generators with associated heat recovery and emissions treatment equipment. The new plant is expected to offset more than 60% of purchased power from PECO at the Wayne Junction substation while heating the Midvale garage to reduce existing boiler fuel consumption. Concord performed all concept and design development drawings as well as contractor evaluation support.

The goal of this project was to enter into an agreement with a third-party private developer to undertake the finance, construction, maintenance, and operation of the CHP Plant utilizing the Pennsylvania Guaranteed Energy Savings Act (GESA). This method allows for the project to be financed through utility savings while providing a positive cash flow to SEPTA's annual budget. This arrangement provides SEPTA with the benefits of onsite power generation without requiring a major financial investment. This project is a model of utilizing public/private partnerships to turn the opportunity for energy efficiency and environmental stewardship into reality.

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