Bergen County Utilities Authority CHP Engineering Design for Landfill Gas to Energy Site

PROJECT INFORMATION

CONCORD DIVISION
Power & Infrastructure

PROJECT LOCATION
Little Ferry, NJ

MARKET
Government

SERVICES
Engineering Design

CONSTRUCTION COST
$12 Million

PROJECT HIGHLIGHTS

The Bergen County Utilities Authority is a public utility that provides sewage disposal for forty municipalities as well as solid waste services for seventy municipalities in Bergen County.

REFERENCE

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PROJECT SUMMARY

Concord Engineering provided the detailed engineering and design services for this cogeneration facility that utilizes a mixture of natural gas and biogas from the aerobic digesters at the BCUA wastewater treatment complex.

PROJECT HIGHLIGHTS

- Provided design for cogeneration building, electrical distribution system and the biogas supply to the engines
- 1400 kW GE Jenbacher reciprocating engines with full heat recovery with full heat recovery, generating high temperature hot water for the sludge drying process
- Units generated electricity at 4160V and were interconnected in parallel with the utility electric grid
- Gas compressor skid for the biogas and an activated carbon system for removal of siloxanes from the gas prior to use in the engines
- Added third engine so that two engines can constantly operate while one can be serviced (redundancy)

PROJECT SUCCESSES

- In 2013, the BCUA saved over $1.3 million for electricity and gas that would have been purchased instead of burning biogas to generate electricity and heat.
- This includes $306,000 in thermal savings (natural gas cost), $984,000 in savings from electricity plus an additional $20,500 in Renewable Energy Credits (REC)
- Since June 2008 the BCUA saved a total of $12.9 million for electricity and gas that would have been purchased.