CASE STUDY

University increases cost savings with reliable cogeneration solution

PURPOSE

Provide cogeneration solution to support the electrical and thermal energy requirements of the university

SUPPLY

- 1 x C2000N6C, QSV91G singe turbo, 2,000 kWe high efficiency lean burn gas generator set
- 1x PowerCommand® Controller embedded to the generator set

WHERE

Worcester, Massachusetts
U.S.

Helping Clark University become more resilient

Clark University is a private research educational institution founded in 1887, in Worcester, Massachusetts. The university is recognized for its degrees in psychology, geography, physics, biology and entrepreneurship. It is also recognized as one of the top national universities by *U.S. News & World Report*. The university needed to replace and upgrade its 1.8 MWe slow speed generator unit, which had been operating on a cogeneration application for 32 years.

The university needed a reliable and compact gas generator able to fit into the existing allocated space, while being able to run continuously on a 24/7 basis in grid parallel mode. Additionally, the university required the new gas generator to be fully compliant with the latest EPA/MADEP emissions limitations, offering lower emissions and significant environmental benefits through the thermal recovery. Coupled with the cogeneration benefits, the university increased its overall efficiency regarding its electrical and thermal needs and also minimized its electricity purchase from the National Grid.

Upon the completion of the bidding process, Cummins Power Generation was selected to complete the project's installation due to the various operational options offered, the generator's availability and cogeneration capabilities, as well as the better lead time. Cummins Power Generation supplied a 2 MWe QSV91G lean burn gas generator which provided power and heat to the entire campus through the existing distribution system. The QSV91G gas generator was equipped with Cummins Power Command® controls which can allow the customer to remotely monitor the generator's performance reducing labor and maintenance costs. The QSV91G gas generator's increased power density covered the university's yearly electrical and thermal energy requirements while excess power produced was exported to the National Grid offering significant cost savings.

"The installation process was a challenge because of time constraints to complete the project for the eligibility of receiving the utility incentives. Cummins Power Generation team was professional throughout the entire process from the installation through start-up and commissioning of the system to normal operations. "

MARK LEAHY

Utility Power Plant Engineer

The engine exhaust passed through an external steam boiler to produce 100 psi of steam which was utilized by the university campus. The second path of thermal recovery was achieved in the form of hot water. The heated engine jacket water passed through a plate and frame heat exchanger supplementing hot water to fulfill all needs on campus.

The limited space availability on the premises brought some additional challenges during the installation process. Cummins Power Generation technical specialists managed to resolve all challenges; ensuring the air quality and noise level requirements were met during the generator's operation.

The partnership between Clark University and the local utilities—National Grid, Eversource and Cummins Power Generation; and the utility rebates availability, made this project a total success.

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