WASTE WATER TREATMENT PLANT REDUCES TS CARBON FOOTPRINT WITH RELIABLE GAS SOLUTION



WHERE: Pennsylvania, USA

SUPPLY:

2 x C1000N6C QSK60G gas generator sets

PURPOSE:

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Offer combined heat and power solution designed to run continuously offering electric and thermal energy

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CUMMINS HELPS UPGRADE PLANT TO REDUCE CARBON FOOTPRINT

The Milton Regional Sewer Authority (MRSA) operates a wastewater treatment plant serving Central Pennsylvania (U.S.). The plant began operation in 1955, it has since been upgraded in 1975 and 2012. The latest upgrade in 2012 consisted of the construction of the Wastewater to Energy (Ww2E) project, whilst maintaining effective treatment of the residential, commercial and industrial waste received by the MRSA. This upgrade included equipment and treatment processes to allow MRSA to generate electricity and reduce solids hauling expenses.

This renewable wastewater to energy project was designed to turn high-strength influent streams into energy and savings. Cummins Inc. was eager to impact environmental sustainability by helping to reduce the carbon footprint through this project. Additionally, a special exhaust design to dry the waste using the exhaust heat from the engine was required to make this project a success.

In 2012, MRSA contracted Herbert, Rowland & Grubic (HRG) Inc. to construct the Ww2E project, and Cummins was brought into the project by one of the project's subcontractors (Philip Brothers). Philip Brothers worked with Cummins on projects in the past, and trusted Cummins' experience, expertise, cost efficiency and reliable power technologies to make the Ww2E project successful.

The goal of this project was to upgrade the water plant, while reducing its carbon footprint. Cummins recommended and installed 2 x C1000N6C low BTU digester gas generator sets, each with a 1000 kWe capacity at 480V. The application is combined heat and power, and designed to run continuously to produce electric and thermal energy. The thermal energy from the jacket water is being used to keep the digester tanks warm while the exhaust heat is used to dry the waste (sludge). The electricity is being exported to the local utility with an agreement in place to repurchase the renewable energy.









As a renewable energy project Cummins' expertise was required to ensure compliance and efficiency. The plant has a capacity to handle around 4.25 MGD, which consists of two large digester tanks and around 10 permanent structures and buildings. Both units are installed indoors and run parallel to each other as well as in grid connect mode. The digester gas goes through a gas conditioning skid and is well treated prior to being fed into the engines. Cummins supplied the engines with 0.5 g/bhp-hr of NOx settings, and have also supplied a gas blending skid where the digester gas can be blended with natural gas, when necessary.

Teamwork is one of Cummins' core values, and Cummins engineering and project management teams worked with Phillips Brothers Electrical Contractors throughout the project from development to execution, which ensured the project was a success. ⁶⁶ These engines have provided us with an outlet to utilize the biogas we produce and allowed us to contribute to the renewable energy market. Cummins Sales and Service personnel have worked well with us through not only the project and start-up, but also during the continued operation of the generators.

Genie Bausinger, MRSA Executive Director



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