Case Study

Tecogen®

Advanced Modular CHP Systems

INV-100 Ultera - Inverter-Based Cogeneration

Bates Troy Inc. is a Binghamton, NY based Healthcare Linen Service serving hospitals and nursing homes within New York and Pennsylvania and is proud to be one of the few HLAC accredited healthcare laundries within New York State. Bates Troy is dedicated to providing excellent service and good value to their customers and uses state-of-the-art technology to make that possible. Their washing machines efficiently process 6000 pounds of laundry per hour to the exacting standards required for linens that will be in contact with patient's skin. These machines also greatly reduced water consumption, supporting the company's ongoing environmental efforts.

> "Bates Troy's investment in CHP technology demonstrates the benefits of distributed generation," John B. Rhodes, President and CEO of NYSERDA

To further save valuable resources, in 2014 Bates Troy installed a state of the art combined heat and power (CHP) microgrid system featuring four 100kW Tecogen InVerde cogeneration modules. The CHP system, which burns clean, reliable natural gas, is twice as efficient as power generated at a large remote power plant. The Tecogen system uses 50% less fuel and produces only half the carbon emissions. In addition, the cutting-edge InVerde system uses a patented ultra-clean emission system that virtually eliminates harmful criteria pollutants which contribute to smog.

Ed Arzouian, Compliance and Special Projects Coordinator for Bates Troy said

"Our latest and biggest achievement is the installation of our Combined Heat & Power (CHP) system, (also known as cogen or cogeneration). Producing our own electricity with natural gas and providing us with 100% electrical backup capability." The system allows the 53,000 square foot laundry to run completely off the electric grid and enables Bates Troy to guarantee service to its healthcare customers and their patients, even in the event of a long-term power outage. The ability to provide needed linens even in emergency situations turned out to be a valuable sales tool; before long the company attracted new customers and was able to add 20 new jobs.

In addition to making electricity and providing backup power, the cogeneration system saves Bates Troy money. This savings allows the company to maintain the prices it charges it's customers. Remaining price competitive has allowed the company to expand into out-of-state markets. The project's cost savings comes both from the efficiency of generating power onsite and from using the free heat generated by the InVerde's natural gas engine to satisfy virtually all of the very large laundry's hot water needs.

Because Bates Troy has been designated a "critical facility" it qualified to receive a $660,000 grant from the New York State Energy Research and Development Authority (NYSERDA) and a $380,000 grant from Empire State Development (ESD). These two agencies partnered to support the project under NY Governor Cuomo's "Reforming the Energy Vision" (REV) plan. REV is a comprehensive energy strategy to build a next-generation energy system that is clean, resilient and affordable for all New Yorkers. John B. Rhodes, President and CEO of NYSERDA said "Bates Troy's investment in CHP technology demonstrates the benefits of distributed generation, a key component of Governor Cuomo's REV."

In addition to supplying the InVerde units themselves, Tecogen installed all piping and related equipment for the project and will maintain the system through a long-term service and maintenance agreement. Bates Troy preferred having multiple cogen units as opposed to one large one because it gives the company added flexibility, when a unit requires service—valuable redundancy for a mission-critical health care supply facility.

The partners in Bates Troy's Combined Heat & Power Project, representatives from Bates Troy, Tioga State Bank, Tecogen, Kinetics Energy, Earthkind Energy, D&B Engineering, NYSERDA and Quantum Electric: (left to right) Jim Rheinheimer, Richard Zur, Tom Singe, Joe Weinschreider, Ron Kamen, Tim Dixon, Ara Kradjian, Ed Arzouian, Brian Kradjian, David Garrison, John Taguer, Ed Kear, Denis Mitchell (photo by Joshua Bernard).

For more information about Tecogen's
InVerde, INV-100, Inverter-Based Cogen Module
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