ROVISYS®
Automation & Information Solutions

CASE STUDY

POWERING THE FUTURE

To match its high-energy needs with its sustainability values, this Syracuse, NY-based hospital required a stable, innovative alternative for power generation.

ROVISYS

Bringing with it 25 years of experience in the industry and its membership in the International District Energy Association, RoviSys was a clear choice to solve this problem. The company's Power & Energy division tackles everything from automation to information, from steam to electricity, to create solutions that maximize efficiency, reliability, and availability—exactly what St. Joseph's Hospital was looking for.

St. Joseph's Hospital Health Center's plans for a monumental $220 million expansion ran into a major roadblock from the local energy infrastructure. There, it faced a choice: expand the existing grid, or find a sustainable alternative.

THE PROBLEM

The energy demands for the expansion were projected to "max out" the capacity of the existing electrical infrastructure. Ordinarily, this would require the hospital to add an expensive power line to expand capacity of feeds from the grid. However, St. Joseph's dedication to sustainable development and energy conservation demanded a much trickier solution that would meet its energy needs while also reducing demand on the grid, improving reliability, lowering operating costs, and reducing greenhouse gas emissions.

THE SOLUTION

To match the hospital's needs with its sustainability values, it went with a cogeneration (CHP) system that would allow it to generate both electricity and thermal energy from a single fuel source, meaning it could generate its own power and steam while cutting down demand.

One key success factor of the new CHP plant is that it allows the site to produce its own electrical power during normal operations, as well as in the event of a loss of utility power. The challenge with this is to ensure that the power producing unit is not overloaded at any time in order to prevent a trip of the unit on a possible fault or high temperature condition. To solve this problem, RoviSys implemented a microgrid controller to remotely control the gas-powered turbine generator, as well as provide emergency load shedding.

The Microgrid control system that RoviSys designed and commissioned is used to monitor and control the electrical output of the plant to ensure that a minimum import of electrical power from the National Grid system is consistently maintained. The microgrid controller monitors the status of interconnecting utility breakers and major feeder breakers of the hospitals' 13.2kV distribution system. It also is connected via fiber optic, to the Solar Mercury gas turbine generator to enable synchronization control and to support communication back to the Plant Control System (also provided by RoviSys). The overall purpose of the microgrid controller is to protect and optimize the stability of the hospital's electrical distribution system against disturbances by ensuring the new gas turbine generator remains on line when the hospital power system is islanded from the utility grid.

The RoviSys-supplied Plant Control System (PCS) monitors and controls a variety of plant sub-systems including a Heat Recovery Steam Generator, two package boilers, deaerator, feed water pumps, condensate return pumps, fuel trains, chemical feed systems, a fuel gas compressor and a black start diesel generator.

RoviSys utilized Rockwell Automation ControlLogix, FactoryTalk View SE, Allen-Bradley and SEL hardware/software as part of this Microgrid/Power Automation Systems project.

THE RESULTS

Meeting the hospital's goals, the CHP allows St. Joseph's to generate their own power – improving reliability, reducing greenhouse gas emissions by 11,676 tons/year, and reducing the annual utility budget by approximately $1 million in its first full year of operation.

Solutions that drive productivity, improve product quality, and increase asset utilization. **Since 1989.**

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