



Eaton units keep operations flowing at water facility

Location:

Billerica, Mass.

Segment:

Local Government

Problem:

When its previous Eaton unit became obsolete, the facility needed an equally reliable and robust solution to ensure water systems remain protected at all times.

Solution:

Eaton® 9355, Eaton FERRUPS, Service

Results:

The Eaton 9355 — coupled with other Eaton UPSs installed at various city sites — ensures that residents will receive safe water even during a power loss.

“Every time we’ve dealt with Eaton, they’ve been first-class in every single way. I’ve been very impressed with the service and technical support people. They are extremely knowledgeable.”

Jim Donovan, operator/electrician

Background

Incorporated in 1655, Billerica is located 20 miles northwest of Boston, bordering Lowell to the south. The town remained predominately agricultural until the mid-nineteenth century, when a major mill complex was constructed on the Concord River. Currently, some 40,000 residents call Billerica home.

The Billerica Department of Public Works delivers many services that help maintain the high quality of life within the town. In addition to responsibilities such as cleaning, repairing, and maintaining the town’s streets and drainage systems, the department maintains the town’s water supply and wastewater system and facilities.

Challenge

Ensuring that the town’s water treatment plant remains fully operational at all times is no small task. Among the equipment required to keep systems flowing is a SCADA computer system, which monitors the entire plant. All valves and pumps are controlled through a PLC cabinet, which is also tied into the SCADA system.

“It’s extremely critical,” reveals Jim Donovan, plant operator/electrician. “If we had downtime, the entire plant would go down, all pumps would stop, all processes would stop.”

This, in turn, would set off an entire chain of undesirable consequences — essentially leaving the plant in hot water. “We would have to allow a period of time for the computer to reboot itself,” Donovan explains. “We would basically have to restart the plant. Filters would likely start to drain because valves didn’t close. It would definitely be a difficult time.”



Powering Business Worldwide

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To avert that scenario, the plant initially relied on a Powerware® 9330 uninterruptible power system (UPS) to safeguard its sensitive electronic equipment. But in 2011, following a preventive maintenance service call on the obsolete unit, the water department opted to replace it.

“This was the original UPS that we installed back when the plant was brand new,” Donovan explains.

“Instead of replacing the batteries and trying to get parts for an obsolete unit, we decided that it made better sense financially for us to buy a new unit with a full warranty.”

A positive experience with its 9330 — as well as the fact that several other Eaton units were also ensuring uptime around the facility — led plant operators to seek another UPS from the same manufacturer.

Solution

Billerica Department of Public Works quickly honed in on the Eaton 9355, which features a true, double-conversion online design to completely isolate equipment from utility power and protect against all nine of the most common power problems, including outages, sags, surges, spikes, brownouts, line noise, frequency variation, switching transients and harmonic distortion.

“It’s a critical piece for us,” Donovan acknowledges. “The purpose of the UPS is to back up PLC panels and computer systems to allow for continued operation of the plant. In the event of a power failure, the UPS is designed to hold everything and keep it running until the generator transfers on.”

With a sleek tower configuration that includes the internal batteries, the UPS packs significant power into half the footprint of previous generation systems. This innovative design provides one of the industry’s best combinations of high efficiency, low input current distortion and high power factor.

“We really like the compact form factor, since space around here is kind of at a premium,” Donovan acknowledges.

Billerica Department of Public Works was also impressed with the 9355’s high 0.9 output power factor, which delivers more power than the vast majority of competitors’ models. In addition, its high efficiency rating of up to 92 percent across all load ranges reduces utility costs and facilitates cooler operating conditions, thereby extending component life.

Further reliability is achieved with Eaton’s exclusive ABM® technology, which significantly increases battery life. ABM relies on an innovative three-stage charging technique that features prolonged rest periods between charge phases, as well as temperature-compensated charging, both of which optimize recharge time.

The plant has also experienced exceptional success from its Eaton FERRUPS® UPS, which is tasked with protecting 13,000-volt switchgear during a power failure. “It has to have a power source to allow the instrumentation to switch over from the utility to the generator and keep those controls powered during the transfer of switch gear from one side to another,” Donovan explains.

The FERRUPS delivers proven, ferroresonant battery backup power and scalable runtimes for critical applications. Highly configurable with a wide range of voltages, frequencies, runtimes, power cords and receptacles, the FERRUPS continually regulates voltage and eliminates harmful harmonic currents.

In addition, the department has deployed Powerware 9125 UPSs in several remote buildings, where the units back up PLC panels.

“We’d definitely go with another Eaton unit if we needed one,” Donovan says. “We’ve been very happy with Eaton.”

The engineer is equally impressed with Eaton’s service team. “We had an alarm go off on the FERRUPS once so I contacted Eaton,” Donovan recalls. “The people are fantastic; they walked me through everything step by step to figure out what was wrong. A couple of times I’ve talked with tech support.”

“Every time we’ve dealt with Eaton, they’ve been first-class in every single way,” he continues. “I’m so impressed with their knowledge and patience. They really put our mind at ease.”

And the spectrum of Eaton units is doing the same for the Billerica Department of Public Works. Noting that there have been several significant outages over the past few years, Donovan reports, “the UPSs have performed fantastic. They’ve never missed a beat.” The department also relies on the units every two weeks when generator testing is executed.

Results

With the variety of Eaton UPSs safeguarding the plant’s critical systems, the Billerica Department of Public Works is able to keep its head above water even in complete blackout situation. With the units in place, the department is able to:

- Ensure continuous, clean power to sensitive SCADA systems and other equipment
- Power more equipment in less space with the 9355’s high power factor
- Preserve valuable space in its facilities with the UPS’s compact design
- Maintain optimal performance and health with Eaton service



Eaton 9355

Eaton Corporation
Electrical Sector
1000 Cherrington Parkway
Moon Township, PA 15108
USA
877-ETN-CARE (877-386-2273)
Eaton.com

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COR207CSS
March 2012

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