Off-Line UPSs Fail to Synchronize With Generator; The Liebert UPStation GXT Passes the Test

The Situation
General Monitoring in Long Beach, California, is a central alarm monitoring station. The company receives incoming alarms over toll-free phone lines and responds to them according to customized instructions stored in its database. Local alarm companies across the U.S. contract with General Monitoring to handle alarms that originate with their residential and commercial customers. Responses range from a call to a homeowner to verify a problem all the way to 911 calls to summon police, fire, and medical services.

The UL site listing signifies 24x7 operation and backup systems that minimize the probability of missing a call.

The UPS systems at General Monitoring support the mainframe computer with its customer database, the phone system for incoming alarms and outgoing calls, the automatic logging and recording systems, the alarm receiving equipment, the PCs for the on-duty operators, and the cameras and monitors that comprise the building’s security system.

Tim LeBlanc, president of General Monitoring Systems contacted Liebert solutions provider Power Conversion Systems for help in solving a frustrating power problem: his assortment of brand-name off-line UPSs were dropping their loads during weekly tests. The power would be cut, the off-line UPSs would take over, either of the two redundant 25 kW generators would start, and then – nothing. The lights would come back on using power from the generators. But the UPSs would stay on battery because they were unable to synchronize with the frequency of the generator. The UPSs would stay on battery until their batteries were completely discharged, at which point there was the probability of damage to the UPSs.

“We smoked more than one of those off-line units during our tests,” said LeBlanc.
The Solution
Power Conversion Systems recommended and installed a Liebert on-line double conversion UPStation® GXT unit after checking the size of the load and the generator circuits at General Monitoring. On-line double conversion topology is superior to off-line or line-interactive topologies in its ability to accommodate frequency variations from small- to medium-size generators.

“That weekend we did a full test on the new Liebert UPS, and it worked beautifully,” said LeBlanc. Within the next two weeks, General Monitoring bought six more Liebert UPStation GXTs – three 700 VA and three 1000 VA models. Several months later the company added a 3 kVA GXT to accommodate business growth.

The Results
“The Liebert UPSs we’re using now are just absolutely fantastic,” said LeBlanc.

The Liebert UPStation GXT systems synchronize with the frequencies of the emergency generators during the weekly tests required for UL Listing as a protective signaling central services station. And the ability of the Liebert UPS units to synchronize means that General Monitoring’s operational quality control is working. The company should never lose an incoming call because of a power outage.

To assure continued readiness, General Monitoring contracts for ongoing service and an annual maintenance check of the Liebert UPSs, including tests to determine the discharge rates of the batteries as a measure of the remaining service life.

And what happened to all the off-line UPS units? They went into the trash after their batteries were removed. “That’s all they were good for,” concluded LeBlanc.