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Powering up facility contingency plans

By MARK B. CAVALLARO

It is inconvenient and expensive losing power for 30 minutes let alone hours. However, the blackout of Aug. 14 showed us that extended power outages are possible and businesses must be prepared for future occurrences.

Power outages are not an option in today's business with the high costs for employee safety, security, information technology, perishable inventory, and the need for increased productivity and round-the-clock customer services.

In dealing with businesses across the United States one common theme we encounter when we start working with a facility is that the loss of power was usually an afterthought.

I have found that most companies implement a power outage contingency plan, and justify the investment in backup generation, only when they have experienced a loss of electric power first hand and have realized substantial financial losses. Usually loss of power occurs as a result of the utility (as on Aug. 14) or due to other internal power distribution system failures such as lightning, fire, and voltage conditions.

One facility manager recently said, "I wish we could have avoided the loss of power last week, however, upper management didn't budget a capital investment for a backup generator this year. The ROI for a generator would have paid for itself in just one loss of power incident."

Businesses need to be more proactive and address a potential loss of power by having a company specific, well-thought-out, organized and communicated, backup power contingency plan. Below are a few helpful hints on what to include in a plan, prior to losing power:

☛ Evaluate business operations and, with co-workers, identify scenarios for when the emergency plan should "kick in." Also, compile a list of items and systems that the business cannot do without during a power outage.

☛ Obtain an adequately sized generator to support the identified vital systems in the event of an outage. An example of such a system is the air conditioning system, which will protect the safety of employees, customers, perishable inventory and computer networks during hot weather.

The misconception about backup power systems and generators is that the power from the generator is available instantaneously upon failure of utility power, through an automatic transfer switch. The power transfer and starting of the generator will typically take 10-30 seconds. This allows time for the generator to start and stabilize, so a loss of power can occur during the power transfer if an uninterrupted power supply (UPS) explained below, is not available.

☛ Determine if the business can withstand a 10-to-30-second

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power interruption (as mentioned above). If not, a UPS will be required to maintain power to the critical loads during the transfer of power to starting of the generator.

Types of UPS's vary but, the most common UPS is a battery-based device that basically uses power from batteries to provide power to the critical load, during the power transfer to generator and starting of the generator.

☛ It is optimal to have some type of back- up generator on hand at the facility. However, if it is not an available option, a UPS can be used only if it has been obtained with enough battery life to support equipment until all equipment can be powered down in an organized fashion. Should the equipment not be powered down, delicate equipment can be permanently damaged, from the power surge, once the power is restored.

☛ For other battery-based equipment and systems such as security systems, exit signs and emergency lighting the battery life typically lasts up to 90 minutes, if not supported by a generator. These units include small batteries integral to the equipment. The contingency plan should anticipate battery life to allow time for organized building evacuation and security measure implementation.

☛ Develop preventative maintenance and scheduled testing plans. This will ensure the backup generators, transfer switch, UPS equipment and other battery-based equipment, including life safety systems, are checked regularly and are in working order. It is not uncommon for buildings to have generators that go untested and when required for an emergency are either too old to start, undersized to support the critical loads, or as the business grows are not updated with additional loads.

☛ Evaluate the fuel levels for the generator, have an appropriate amount of fuel on hand and have a seamless procedure to obtain fuel from the fuel supplier, in the event of an emergency.

Have the appropriate senior administration, facility management and emergency personnel trained and available for emergency coverage during business operations (anticipate alternative coverage during vacations and time off).

Preparation and procedures should include clearly defined roles and responsibilities, management and communication training to help systematize and expedite employees and customers, through the power outage and through a building evacuation if necessary. Employee training and drills are also recommended.

☛ Have an updated power distribution diagram available and accessible to key emergency personnel.

In the event of an emergency or utility power outage, this diagram can be used to locate key circuit breakers, to be opened after a power outage and closed after power is restored, to prevent power surges when the utility restores power.

☛ Develop a contact list that includes employees, critical vendors and outside contractors. Establish a committed relationship with an electrical engineer and electrical contractor who know the building, the systems and who can be called on in the event of an emergency.

☛ Have a communication system that can work independently during a power interruption.

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