6 Essential Steps to Prepare for a Prolonged Power Outage

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Spoiled food. Silent cash registers. Darkened traffic signals. Dead cellphone towers. “Closed” signs plastered across store windows.

That was the reality in 2019 throughout much of California, as utility companies initiated multiple public safety power shutoff (PSPS) events. The massive preemptive cuts —– an attempt to prevent electrical equipment from igniting wildfires amid dry, whipping winds —– collectively impacted nearly 3 million customers across the state in October alone. For the thousands of businesses whose operations grinded to a halt, the move sparked a more pressing question: does the scenario represent a new ‘business-as-usual’ for California?

Perhaps most concerning, no remedy is expected anytime soon; Pacific Gas & Electric’s (PG&E) top official warned that businesses and residents face up to 10 years of widespread, precautionary forced power shutoffs until the utility can upgrade its equipment to alleviate the risk of transmission lines sparking fires. In the meantime, an analysis revealed that sustained power outages from electric line failures in northern California could double or even quadruple in years to come unless PG&E accelerates replacement of the aging equipment.

Regardless of where your business is located, much can be learned from perils of the Golden State. To begin with, the need to properly prepare for an extended power outage has become universal. Whether the biggest threat in your path is West Coast winds, Gulf Coast tropical storms or chilling Midwest snow events, a lengthy blackout can deal a significant blow to your bottom line —– including lost revenue, equipment damage, data loss and abandonment by customers. Just ask Californians.

In the wake of the state’s unprecedented power cuts, some companies had to close for days, while others scrambled to find backup generators and fuel to operate them. Although energy economists continue to assess the price tag from the planned outages, initial appraisals suggest the toll was steep. For just one of California’s multiple shutdowns in October, Michael Wara of the Stanford Woods Institute for the Environment predicted that the economic cost could reach $2.5 billion.

While an outage of any length can be disruptive to a business, establishing procedures for a long-term blackout has become a critical component of any solid business continuity strategy. The following tips can help minimize potential impacts:

1. Consider the consequences. Although virtually every business supports some equipment that requires electricity, certain segments are more vulnerable than others during a power outage. For example, while grocery stores and restaurants are susceptible to perishable food losses, some businesses face life-or-death impacts, such as convalescent centers, retirement homes and other facilities that administer oxygen to patients. During one of California's preventative shutoffs on Oct. 12, a man who relied on an oxygen machine to breathe died 12 minutes after power was cut to his home. Although his family had been warned by the utility to expect the outage and had battery-operated backup machines on hand, they were not prepared by the timing of the sudden shutoff at 3:30 a.m.

2. Assess the specific needs of your company. Whatever type of business you operate, it is important to identify your most significant pain points. If you're an eCommerce company that relies on your website, how will you ensure power to that server? If you manufacture a product, will the absence of power cause you to miss deadlines or prevent you from filling orders? If you have a brick-and-mortar location, will a backup power solution on cash registers enable you to continue serving customers? And every business can avoid data loss by backing up information and documents off-site on a regular and frequent schedule.

3. Establish a communication plan. During an extended outage, it is important to be able to communicate with employees, customers and vendors. Yet during California's Oct. 27 power shutoff, data from the Federal Communications Commission (FCC) showed that 874 cellphone towers were offline. With that in mind, define procedures ahead of time for alternate modes of communication and how to best get the word out, whether it be through email, SMS texting or social media channels. If you don't have a database with contact info for your customers, start building one now. Make sure to tell your customers when you're back up and running.

4. Define how long you want to remain up and running. Determine the criticality of your business processes for blackouts of varying lengths—24 hours, 48 hours, a full week, etc. —— so your power outage plan will cover all possibilities. Then you need to decide if you want to continue to run IT functions for a specific period of time or immediately shut down systems gracefully. Some Northern California scientists might have benefitted from such a plan during the utility-initiated outage on Oct. 10. The PSPS event sent local researchers scrambling to save specimens and experiments and forced some to take drastic measures to preserve supplies that required refrigeration. While at least one scientist loaded his lab's freezers onto trucks and moved them to facilities that still had power, others reported to losing an entire week's worth of work in the blackout.

5. Choose the optimal type of backup. Depending on the length of time you want to keep critical equipment up and running during a sustained outage, there are several options for backup power, including:

Uninterruptible power systems (UPSs). If you believe that investing in a UPS is an unnecessary expense or that cloud backup is sufficient, think again. Not only does a UPS enable employees to save files and ensure the backup process has been completed, it also provides the time needed to turn off equipment. If devices are on when the power goes out, they will all turn back on once when power is restored —– leaving equipment extremely vulnerable to damaging power surges or overloading a still-recovering electrical circuit. In fact, one of the greatest causes of equipment damage from outages is the electrical surges that occur when power is restored. Although UPSs offer an excellent line of defense against dirty power, data loss and equipment damage — as well as provide backup during short-term blackouts — they are not designed to deliver power indefinitely.

External battery modules (EBMs). Some UPSs offer the option of bolstering runtime by adding EBMs to the unit. While this makes it possible to achieve potentially hours of runtime (depending on the load), it can also be an expensive option, based on the number of modules deployed.

Lithium-ion batteries. While valve regulated lead acid (VRLA) batteries have long been the industry standard for UPSs, new lithium-ion batteries offer a host of benefits for UPS applications. Most notable for an extended blackout is the fact that they last longer and recharge faster, offering an 8- to 10-year life cycle compared to traditional VRLA batteries, which generally need to be replaced every 3 years. Already the preferred choice in many three-phase UPS applications, lithium-ion batteries are increasingly being used in the single-phase UPS space, as well.

Standby generators. While California's power woes resulted in hefty losses for thousands of businesses, one small sector actually enjoyed a huge business boom: those renting or selling backup generators. Standby generators, which can keep critical applications operating without interruption, range from small devices that can fit into a Home Depot shopping cart to giant machines requiring transport by a semi-truck. Generators can be portable or permanently installed, and their most common fuel options include propane, natural gas and diesel, each of which comes with its own set of own advantages and disadvantages. While diesel is widely considered the best fuel and is predominant for generator solutions 50 kW and larger, it has a short storage life and can be extremely expensive. Companies that rely on a generator will also need to ensure they maintain the fuel needed to power the unit.

6. Set procedures for other functions. After determining your most critical systems and how they will continue to operate during a blackout, consider other fundamental business aspects, as well. For instance, how long will you ask employees to wait to see if the power comes back on? If a lengthy outage is anticipated, will they be able to work remotely or assemble at a pre-arranged temporary place of business? If so, have you established VPNs that would allow them to access applications?

A thorough understanding of your business and its most critical functions will help you design a winning strategy to survive extended power outages. Having an emergency response plan in place can go a long way toward preparing you for any type of disruption that comes your way.

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