



White Paper

5NINES INCIDENT RESPONSE PLAN DURING PLANNED POWER OUTAGE

Tips for a Backup Power Plan during the Power Outage

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Incident

Unexpected power outages can harm the business productivity resulting in lost revenue and time, and inability to serve clients. On the other hand, planned power outages are a great opportunity to test your Disaster Recovery and Business Continuity (DRBC) plan in action and mitigate the effects on unexpected power outages. This is why 5NINES has developed a well-rehearsed and planned crisis response plan. The 5NINES' plans is based on over fifteen years of experience of dealing with various scenarios of man-made and natural disasters. 5NINES is committed to keep our Data Center, Colocation, Internet and Hosting clients online 24/7/365. As we guide you through the steps of our incident response plan for planned power outage on April 10, 2021, we've also prepared few tips to help small and medium-sized businesses have a better defense against unplanned power outages.

Some real-life examples of planned and unplanned power outages are:

- 5NINES received a notice from Fiore Company management serving our data center building at Network 222 that they will be performing planned outage on April 10, 2021, to replace the bus duct electrical system in the building. This means that the building will be cut from power for 8 hours straight.
- The July 19th 2019 MG&E power outage that affected many businesses in downtown area was a true test for 5NINES incident response plan. Since then, 5NINES has been refining and perfecting our response plan to be ready to face power outages of any scale.

Plan, Test, Repeat

In each of these cases, 5NINES notified all our affected clients which includes our Data Center and Internet service clients. There are also several clients outside of our data center who are connected to our generator in Network 222 building. This includes TDS, Wisconsin Independent Networks, and Verizon. 5NINES team and company representatives sat together with experts from Specialized Electric who serves our data center to discuss the next steps of the plan. Then, 5NINES simulated a power outage in preparation for the planned outage. The most critical component is the generator backup system transfer switch that turns on the generator for a backup power source. Making sure all the components work properly and all failover occur effortlessly during these tests is crucial for a successful incident response plan.

Another strong feature of 5NINES resiliency is that our data center stores diesel fuel for our two generators. One generator has tank with 451 gallons and second generator has tank with 183 gallons. This amount of stored fuel is constrained by the building safety restrictions. Our team kept the tanks full and had our fueling service provider, Landmark Services Cooperative, available to help us with additional fuel supply. Our measurements show we can go up to 12 hours minimum without refueling to maintain the electricity within the data center.



A 5NINES Uninterruptible Power Source (UPS) that provides instantaneous backup power from batteries in case of emergencies.



Fire suppression and an HVAC system within the 5NINES data center.

Strategic Location of Our Data Center

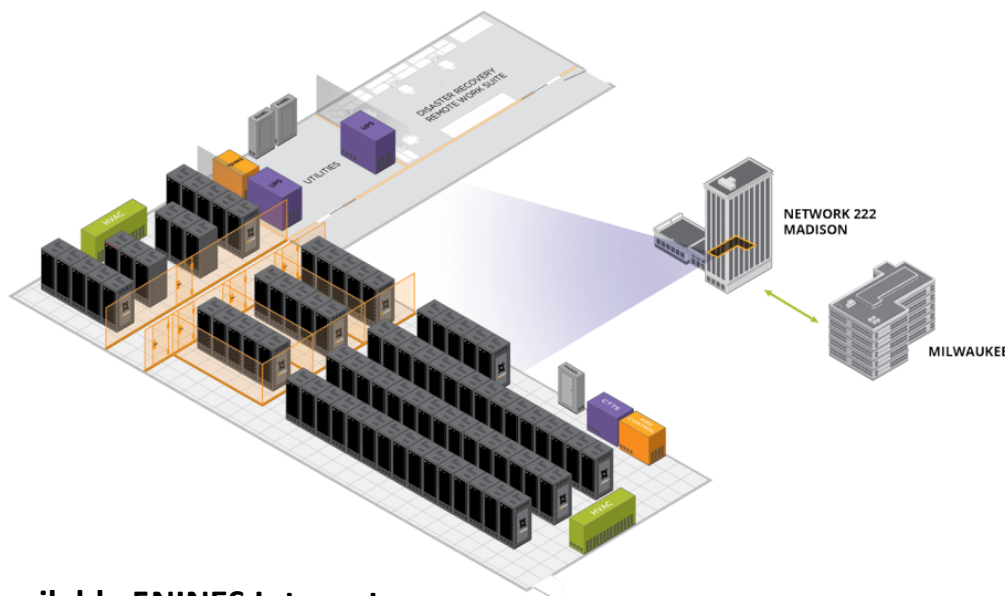
Location is another key feature of 5NINES' innate ability to recover from outages. Being next to the capital, 5NINES Data Center at Network 222 is connected to two underground power grids which provides redundant connection if one utility service feed goes down. This makes 5NINES Data Center a desirable and strategic location for our clients who expect minimal or no downtime.

"Each of the service feeds are connected to the separate transfer switches. And those transfer switches work together with the generator. To simulate the power outage, we turned off both service feeds which triggered the generators to turn on, and we were able to measure whether or not they powered the whole data center," explained Marcus, 5NINES Data Center specialist.

Prior investments in acquiring an Uninterruptible Power Source (UPS) within our data center allows us to provide instantaneous backup power supply for our web-hosting and e-commerce business clients. To ensure that the UPS device is satisfying we worked with Specialized Electric to measure how much electricity is being used on a regular basis within the data center. Having multiple UPS allows our data center to be fully redundant, or as we call it "A/B Redundant".

"Inside the cabinet that the customer leases from us," says Marcus, "one Power Distribution Unit (PDU) is connected to the Service Utility Feed 1 (UPS 1) and the other PDU is connected to the Service Feed (UPS 2). This way if one of the service utilities goes down, we have another option to connect, and this was a major improvement within 5NINES Data Center."

5NINES Data Center



Always On...Always Available 5NINES Internet

5NINES Engineered ISP keeps our fiber and wireless internet clients connected online when other providers don't. For example, during the planned power outage on April 10, 2021, our team was able to connect to the backup power available installed on the rooftop of the Network 222 penthouse to provide uninterrupted connectivity for our wireless internet clients. The rooftop generator powers the Network 222 penthouse separately from the 5NINES Data Center. 5NINES has engineered its network to be redundant from any single point of failure which makes failovers almost undetectable by our subscribers. We've recently upgraded and continue improving our network to deliver the highest availability and the lowest latency to stream, play, and work online with no lags or downtime. This has been a recent advancement for our clients who are already enjoying benefits of 5NINES high-performance and redundant Internet service.

Top 5 Things to Consider for Power Outages

Whether you work from home, or you manage a small business building or manufacturing plant, you should have a thorough plan of dealing with power outages of any scale (short-term or unprecedented major outages). If you haven't done any preparations, now is the time to look closer at your infrastructure. Here are five takeaways from our Disaster Recovery and Business Continuity plan:

1. Notify and ensure clear line of communication with vendor partners.

When an emergency occurs, communication is the number one priority. Contacting your facility electrician, property owner, and other people who can help you successfully prepare and manage the power outage should be the first step in the development of a crisis communication plan. If you haven't managed power outages before you should consult with your facility electrician who knows the entire electrical system for your facility to help you bring the power back.

2. Make sure your generator fuel tank is full and you have additional fuel coming if needed.

The regulations regarding disaster recoveries dictate that we cannot rely on natural gas being piped constantly. That happened in 2019 when MG&E cut off its gas source due to the facility fire leaving many businesses in uncertainty and no electricity.

3. Schedule regular generator tests.

Most power outages are unplanned, and you cannot expect to contact your service providers beforehand. Running your generator at least 30 minutes, each month will prevent your diesel fuel from breaking down which is different in composition from the diesel fuel in traffic vehicles. 5NINES conducts monthly and biannual full tank test runs of our generators.

4. Consider having a UPS (Uninterruptable Power Source).

The UPS provides a backup battery source when the utility power is interrupted. When the transfer switch is activated, there is a period of time the generator takes to power up. In that time the UPS battery backup takes over.

5. Consider the cost of redundancy for in-house generators vs hosting with a local provider.

The cost of a single generator including the material and labor can go up to \$200,000. When two generators are preferred, the cost of maintaining and operating them would be astronomical compared to the cost of renting a cabinet within the 5NINES Data Center. This is one of the reasons why many business owners decide to locate their equipment inside our data center as opposed to in-house storage. If the generator is not capable to power the whole facility, you might need to consider building your own. Also, you might consider just storing your critical server at one of the cabinets in our data center which significantly reduces the cost of having redundant power supply and data backup.

It can be difficult to prioritize investing in business continuity. Generators and UPS systems are expensive to install and maintain, and crisis response plans take time and effort to rehearse and refine. But our customers rely on us for 24/7 access to their data, no matter what, and we take that seriously. If business continuity is important to you, then let's schedule a chat about our colocation and web hosting services.