



## Emergency Generator Maintenance



by Bob  
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**I**n the aftermath of Sandy, one message resounded, “We need emergency power!” For the first time in history, the Stock Market closed two consecutive business days in a row. On the third day, in the midst of darkened New York City streets, the red, white, and blue banner lights shown bright and trading continued thanks to the rumble of emergency generators. Backup power saved countless lives by providing the life blood of energy needed to power the country’s emergency services.

Emergency management officials and local leaders reported from the impacted areas how their emergency generators were providing power to hospitals, emergency shelters, nuclear power plants, cell towers, data

centers, and 911 response centers. Can you imagine the relief on their faces after everything went dark and seconds later the power kicked-in? When all was lost, a ray of hope shone through, “We can beat this.” When the power returned, they got to work.

The crisis proved beyond a doubt that emergency power generators can and do save lives during a large power outage. There is a hidden message in this story of recovery; a message of preparedness.

It was not an accident that these generator sets roared to life providing the best hope of recovery. Emergency generator sets must be regularly maintained to ensure they provide quality power throughout their service life. Owners of emergency generators may establish maintenance agreements with generator dealers/service centers in order to maintain their generators, automatic transfer switches, and other associated equipment. The lifecycle of power generators is then well established and documented making routine maintenance fairly straightforward.

The long, outstanding use of generators over time has provided the necessary knowledge to predict when certain components will fail or be in need of service. A fairly reliable maintenance schedule can usually be acquired and can be employed by a local generator dealer/service center with experience in power generation. Adhering to this schedule will ensure maximum service time for the generator and proper operation when it is called upon to provide power.

The main responsibility of the maintenance contractor would be to inspect systems, study the technical data provided by the generator manufacturer, maintain records, and take precautionary measures for safety.

Some of the steps to ensure smooth generator operation while carrying out scheduled maintenance include:

- Timely removal of worn parts or upgrading the components
- Checking fluid levels
- Battery inspection and cleaning of connections
- Load bank testing
- Verifying control panel readings and indicators
- Changing fuel and air filters

Small investments made in replacing components and maintaining generator systems on a regular basis can save expensive and unnecessary upgrades or even replacement of the entire generator in the future.

When performing routine maintenance, each action taken should be logged, and the readings and various parameters should be recorded along with the date of the inspection and hour meter readings of the generator. These set of readings are compared with the next set of data collected. Any absurd variation of readings indicates faulty performance of the unit.

Load testing of automatic transfer switches in regular intervals keeps track of the component’s electrical and mechanical integrity in the actual mechanical transfer operation. Other factors to be checked periodically are starting and time relays, start signal continuity, fuel, and oil sampling.

The importance of preventative maintenance/modernization hits home with one of the stories of failure. In New York, NYU backup generators failed and forced the evacuation of 300 patients. Perhaps the greatest devastation will be the cells, tissues, and embryos used for medical research that were left to die in failing refrigerators, freezers, and incubators. Six years of important research lost to Sandy’s fury, and it might not have needed to happen.

Proper preventative maintenance ensures that you get backup power when you need it. You can be confident of service on a priority basis in case of a dire emergency and discounted service rates for additional work. Once a facility enters into a service agreement, the facility can relax on this aspect as the maintenance provider keeps track of when the next service inspection is due and makes the visits at regular intervals. They ensure that the products purchased through them receive consistent and reliable service.

Whether you use an expert, outside contractor (preferred method) or choose to do the work yourself, it is important to keep to your maintenance/testing schedule. Equally important is to have highly-trained and certified technicians maintaining your equipment. Do not leave anything to chance unless you can afford to be without reliable power when you need it.

Proper maintenance and servicing is the key to reliability. Remember the seven P’s of emergency power—Prior Proper Preventative Preparation Precludes Power Problems. You never know when the ill winds of fate will blow another storm in your direction.

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