



Ken Koty

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GENERATOR MAINTENANCE PREPARING FOR OUTAGES

Power outages occur; they are practically unavoidable, that's why diesel generator backups are such an important part of the data center industry. Data centers don't need backup generators very often, but when they do, it is critical that they be ready to go at a moment's notice.

A recent study on the failure rates in data center components and systems found generators played a role in between 45 and 65 percent of outages in data centers with an N+1 configuration (data centers with a spare generator).

Knowing whether or not a generator will start, run or meet a data center's energy needs should never be an issue if regular inspections and maintenance tests are performed.

Provided is a list of some diesel generator maintenance practices worth considering.

Daily Inspection

These are some inspection practices that should be performed on diesel generators every day.

- ☐ Check air intake and exhaust vents for blockage.
- ☐ Check to make sure the battery charger is working.
- ☐ Look for any signs of corrosion on battery posts, if found clean them immediately.
- ☐ Look for oil or coolant leaks.
- ☐ Check oil and coolant levels.
- ☐ Check to be sure the coolant jacket heaters are working. In colder climates, keeping your coolant heated could be the difference between a generator starting or not starting.



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GENERATOR MAINTENANCE PREPARING FOR OUTAGES (CON'T)

Monthly Inspection

Monthly inspections and tests of the generators under load should prove that everything is in working order.

- Before testing the generator, check the specific gravity reading on your batteries. They should read about 1.260.
- Exercise generators under load for at least 30 minutes.
- Log readings; coolant temperature, oil pressure, volts and amps.
- During the test, check the exhaust system to be sure no leaks are present.

Periodic Maintenance

Following are some periodic maintenance tips to enhance reliability and extend the life of a diesel generator.

- Inspect air filters and change when dirty. The generators working environment will determine the frequency.
- Change oil every 250 hours of operation. Send a sample in to be tested, this will provide insight into the generators engine condition.
- Replace batteries every three years. Our practice was to use two batteries in parallel on each generator to increase reliability.
- Replace the glycol every three years. It's a good practice to have a sample of the glycol tested as well.
- Have the engine valves adjusted every three years. This can help extend the life of your diesel generator.
- Test onsite fuel storage every six months. Be sure your fuel supplier is providing you with arctic fuel during the winter months. I would call and make sure the fuel supplier had switched to arctic fuel and then let the onsite fuel run lower than normal to make sure that there was ample room to get a large amount of the arctic fuel blend into the storage tanks.



Redundancy and Reliability...

Making sure that you are prepared for a possible outage of primary power with backup generators is key to maintaining uptime.

The key to diesel generator reliability is a good maintenance program. Making sure generators supply power when needed is vital to any Mission Critical facilities your business and IT customers expect it.

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Ken Koty, former data center facilities manager with over 30 years of hands-on experience shares management practices that made him a 12 year award recipient for continuous uptime from the Uptime Institute. PDU Cables does not guarantee the results of outcomes by using information contained in this document.

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