

Commercial Property Insights

Backup Generator Risks and Fuel Storage Requirements

Fallen trees, hurricanes, winter storms and other unexpected events can leave businesses without electricity for prolonged periods. During a power outage, companies may be unable to process transactions, operate equipment, protect temperature-sensitive inventory and maintain a safe environment for employees and customers. As such, backup generators are important business continuity tools. They provide an alternative power source when the electrical grid is interrupted.

However, backup generators and their fuel supplies introduce their own property and liability risks, including fire hazards, fuel leaks, and potential third-party injury or property damage. They can also introduce compliance concerns, as organizations may need to comply with fuel storage, fire safety and environmental requirements.

This article discusses generator placement and installation considerations; fuel storage requirements; testing and maintenance expectations; and key risk management practices to reduce property, liability and operational exposures.

Generator Placement and Installation Considerations

Proper generator placement is an important factor in reducing safety and property exposures. If a backup generator is installed too close to doors, windows, vents or other openings, exhaust gases can enter occupied areas. This creates a carbon monoxide hazard.

According to National Fire Protection Association (NFPA) 37 (Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines), stationary

generators should maintain at least 5 feet of clearance from openings in building walls, such as doors, windows and vents, as well as from structures with combustible walls, subject to certain exceptions and applicable installation requirements. Exhaust should be directed outdoors and positioned to help prevent exhaust gases from entering doors, windows, ventilation openings or building air intakes. Required separation distances may vary based on the generator, manufacturer instructions, applicable codes and requirements established by the authority having jurisdiction.

Additionally, generators should be installed on a stable, noncombustible surface, such as a reinforced concrete pad, to safely support the equipment and reduce fire exposure. In flood-prone areas, elevating generators above anticipated flood levels can help protect them from water damage and improve reliability during an emergency.

Fuel Storage Requirements

Backup generators rely on an adequate fuel supply. Diesel and propane are common fuel sources for standby generators, and each has unique storage and handling requirements. Facilities that store diesel may be subject to the U.S. Environmental Protection Agency's (EPA) Spill Prevention, Control and Countermeasure (SPCC) Rule. Generally, the rule applies to certain nontransportation-related facilities with more than 1,320 gallons of aggregate aboveground oil storage capacity or more than 42,000 gallons of completely buried oil storage capacity when a discharge could reasonably be expected to reach navigable waters or adjoining shorelines. Covered facilities generally must prepare and implement an SPCC plan. These plans must generally be reviewed at least once every five years and

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amended when certain changes to facility design, construction, operation or maintenance materially affect the potential for a discharge.

Propane storage is governed primarily by NFPA 58 (Liquefied Petroleum Gas Code), which establishes requirements for tank installation, separation distances and safe handling practices.

NFPA 110 (Standard for Emergency and Standby Power Systems) establishes performance and reliability requirements for emergency and standby power systems. These systems are classified in part according to the minimum time they are designed to operate at rated load without refueling. The required fuel supply and operating duration depend on the system's classification, applicable building and life safety codes, the facility's use, and requirements established by the authority having jurisdiction. Organizations should confirm that their fuel supply is sufficient to meet applicable requirements and anticipated outage conditions.

Aboveground fuel tanks may also be subject to secondary containment requirements designed to capture fuel if the primary tank or associated equipment leaks. Requirements vary based on tank configuration, capacity and fuel type, as well as applicable federal, state and local regulations.

Testing, Maintenance and Operational Readiness

Untested backup generators could fail in an emergency. Emergency and standby power systems should be exercised and tested regularly in accordance with applicable NFPA 110 requirements, manufacturer recommendations and local codes. Depending on the system, testing may include monthly operation under load, testing of automatic transfer switches and periodic supplemental load testing to verify that the generator can perform under expected demand. Organizations should work with a qualified generator service provider to establish a testing schedule appropriate for their system and applicable requirements.

Fuel condition is equally important to generator reliability. Diesel can degrade over time, potentially causing performance issues or engine failure. Periodic fuel inspection should be incorporated into the maintenance program to help ensure the backup generator performs as intended.

Organizations should also maintain thorough records of inspections, tests, repairs and modifications. A documented maintenance log can help demonstrate that the system was properly maintained if an outage leads to a claim.

Key Risk Management Takeaways

Overall, businesses should:

- Confirm their backup generator placement and installation meet applicable code and manufacturer clearance requirements.
- Confirm that fuel storage capacity, tank installation and containment measures comply with applicable EPA requirements, NFPA standards, and state and local codes.
- Establish and document a routine testing and maintenance schedule.
- Follow manufacturer requirements for safe fueling and refueling. Portable generators should generally be shut down and allowed to cool before fuel is added, and fuel should be stored in approved, properly labeled containers away from ignition sources.
- Keep vegetation, stored materials and other combustibles away from the generator and fuel storage area.
- Consider how fuel will be replenished during an extended outage, particularly following severe weather that may disrupt fuel deliveries.

Conclusion

Backup generators can play an important role in business continuity, but they also introduce property, liability and compliance exposures. Fortunately, proper



installation, fuel management, testing and maintenance can help organizations improve generator reliability while reducing the risks associated with standby power systems.

Contact us today for additional risk mitigation guidance.