

SAFE OPERATION OF BACKUP POWER GENERATORS

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Post-Hurricane Katrina CO Poisoning Incidents Associated with Portable Generators.

Hurricane Katrina made landfall on August 29, 2005 on the Gulf Coast of the United States. Due to widespread power outage and property damage, portable backup generators were employed to operate electrical appliances and aid in cleanup efforts.

From August 29 to September 24, 51 carbon monoxide (CO) poisoning cases were reported in Alabama, Louisiana, and Mississippi. All but one case is thought to originate from improper use of portable generators. Of these cases, 46 were nonfatal and five were fatal.

Source: Centers for Disease Control. Morbidity and Mortality Weekly Report. October 7, 2005.

Portable generators are useful when temporary or remote electric power is needed, but they can also be deadly. The primary hazards to avoid when using a generator are carbon monoxide (CO) poisoning from generator exhaust fumes, electrocution, and fire.

CARBON MONOXIDE DANGER

Carbon monoxide is an odorless, colorless gas byproduct of incomplete combustion of fuels such as natural gas, heating oil and diesel. Humans exposed to high levels of carbon monoxide will experience a range of symptoms that can result in sudden illness and death. Low level exposure can result in headaches, lethargy, weakness, nausea,

and muscle aches. High level exposure can cause paralysis, impaired judgment, and even death.

Carbon monoxide interferes with the blood's ability to carry oxygen to internal organs.

Protect Against CO Poisoning

- Never operate a generator indoors, including in homes, garages, basements, attics, or other enclosed or partially-enclosed areas, even when you think there is sufficient ventilation. Opening windows and doors will not prevent CO build-up.
- Locate the generator outdoors away from windows, doors, and vents where CO gas can enter the home.
- Install CO alarms with battery backup in your home, according to manufacturer's recommendations. CO alarms should be certified to meet requirements of the latest safety standards (UL 2034, IAS 6-96, or CSA 6.19.01). Test alarms frequently and replace dead batteries.

ELECTROCUTION DANGERS

Portable generators are designed to convert liquid fuel to electrical power to operate electrical appliance, tools and other devices. Homeowners should protect themselves and family members from electrical shock and electrocution from portable generators.

Protect Against Electrocution

- Keep the generator dry and do not expose it to rain or place it on wet surfaces. Operate it on a dry surface under an open, canopy-

like structure. Remember to dry your hands before touching the generator.

- Plug appliances directly into the generator, or use a heavy duty extension cord rated for outdoor use. Make sure the extension cord is rated (in watts or amps) at least equal to the sum of the connected load. Check that the cord is free of cuts or tears and that the plug is a three-prong plug equipped with a grounding pin.
- Never plug the generator into a wall outlet in a house or other circuit. This practice, known as “back-feeding” is extremely dangerous as it energizes the “failed” electrical wiring supplying the home. Doing this could electrocute unsuspecting utility workers and/or neighbors that may be servicing the electrical system. It also bypasses some of the built-in household circuit protection devices.
- If you must connect the generator to the main house wiring, contact a licensed electrician to do the installation. The electrician will install the proper disconnect or transfer switch to prevent current from “back-feed” situations.
- For power outages, permanently installed stationary generators are better suited for providing backup power to the home. Even properly connected portable generator can become overloaded. This may result in overheating or stressing the generator components, possibly leading to a generator failure.

FIRE DANGERS

Fires can occur when refueling portable generators or from storing fuel reserves in inappropriate areas.

Protect Against Fires

- Never store fuel for your generator in the home. Gasoline, propane, kerosene, and other flammable liquids should be stored outside of living areas in properly-labeled, non-glass safety containers.
- Do not store fuel near a fuel-burning appliance, such as a natural gas water heater in a garage. If the fuel is spilled or the container is not properly sealed, invisible

fuel vapors from the container can move along the ground and ignite from the water heater’s pilot flame.

- Turn the generator off and let it cool before refueling. Gasoline spill on hot engine parts could ignite.
- Always store a fire extinguisher in the immediate vicinity of the generator.

Facts about Portable Generator Deaths

- 40% of deaths occur in winter months
- 70% of deaths occur in the home
- 26% of portable generator incidents involve multiple deaths
- 80% of CO poisoning deaths associated with portable generators occur in adults 25 years and older
- 72% of victims are male

Source: Consumer Product Safety Commission. Release #04-141. May 20, 2004. Facts based upon 223 generator-related deaths from CO poisoning from 1990 through 2003.

OTHER SAFETY PRECAUTIONS

- Always check the generator thoroughly each new season before you turn it on.
- Never attempt to repair a generator. Only qualified servicemen should perform repairs.
- Don’t remove or tamper with safety devices. These devices are there for your protection.
- Don’t touch hot engine parts.
- Keep children away from the generator and fuel storage containers.

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