

When stormy weather blows through, sometimes the power goes with it. Portable electric generators offer great benefits when such outages affect your home, but generators can also be dangerous—posing serious safety hazards to you and others.

The primary hazards to avoid when using generators are carbon monoxide (CO) poisoning from the engine's exhaust, electric shock and fire.

Every year, people die in incidents related to improper use of portable generators. Most of the incidents involve CO poisoning from generators being used indoors or in partially-enclosed spaces.

The second most common source of deaths results from electric shock due to backfeed. Backfeed occurs when generators are plugged in or connected to a home's internal wiring. Unless certain precautions are taken (*see electric shock section*), generators connected to a home's internal wiring will also energize the utility's distribution wires throughout the neighborhood, presenting a potential electrocution hazard to utility workers and other electric customers.



Tip: You can not depend on your senses for protection from carbon monoxide. This deadly gas is invisible and odorless. When buying a generator, also buy a battery-operated carbon monoxide alarm. It works like a smoke alarm, sounding an alert if carbon monoxide levels become dangerous.

Tip: If an appliance has a three-prong plug, always use a three-prong extension cord.

Tip: You don't need to run everything at the same time. Rotating larger items allows the use of a smaller generator which costs less to buy and operate, and it is easier to move.



Caution: An improperly connected generator can expose utility work crews and emergency response personnel to high voltage backfeed causing serious injury and death.

PLEASE NOTE: The information contained herein is intended to serve as a starting point for safe practices and is intended to provide basic guidelines for generator safety. The information in this safety resource has been compiled from sources believed to be reliable and to represent the current opinions on the subject. It is not intended to be legal, medical or other expert advice or services, and should not be used in place of consultation with appropriate professionals. The information provided is intended to be accurate and helpful, but it should not be considered exhaustive. While every effort is made to ensure accuracy, we make no representation as to the accuracy of, and cannot accept any legal responsibility for any errors, omissions, misstatements or mistakes within the pages.



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Sources: The American National Red Cross, U. S. Fire Administration and Dominion Storm Center

Safety After the Storm



Protect Your Family

Learn the Proper Use of a Portable Generator

Electric Shock and Electrocutation

DO NOT connect your generator directly to your home's wiring or plug a generator into household outlets. Connecting a portable electric generator directly to your household wiring can be deadly to you and others. This is an extremely dangerous practice that presents an electrocution risk to utility workers and neighbors served by the same utility transformer. It also bypasses some of the built-in household circuit protection devices.

If you must connect the generator to the house wiring to power appliances, the only safe way is to have a licensed electrical contractor install a transfer switch in accordance with local electrical codes.

Use only UL-listed, three-wire extension cords with generators. Be sure the extension cord is adequate to handle the electrical load. Plug the appliance into the extension cord first then plug the extension cord into the generator's outlet.

Water and electricity are a dangerous combination. Make sure your hands are dry and that you are standing in a dry place whenever you operate your generator. Do not use a portable generator in a flooded area.

To prevent electrical shock, make sure your generator is properly grounded. Consult your manufacturer's manual for correct grounding procedures.

Turn off all appliances and equipment powered by the generator before shutting down your generator.

Fire Hazards

DO NOT store fuel indoors or try to refuel a portable generator while it's running. Gasoline should be stored outside of living areas in properly labeled, non-glass safety containers. Do not store them 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 sealed properly, vapors from the fuel can travel along the ground and can be ignited by the appliance's pilot light or electric arcs caused by turning on the lights. Avoid spilling fuel on hot components. Put out all flames or cigarettes when handling gasoline. Always have a fully charged, approved fire extinguisher located near the generator. Never attempt to refuel a portable generator while it's running. Before refueling a portable generator, turn it off and let it cool down. Gasoline spilled on hot engine parts could ignite. Use the type of fuel recommended in the instructions or on the label on the generator.

DO NOT overload a generator. DO NOT operate more appliances and equipment than the output rating of a portable generator. Overloading your generator can seriously damage your valuable appliances and electronics. Prioritize your needs. A portable electric generator should be used only when necessary, and only to power essential equipment.

Use the proper power cords. Plug individual appliances into the generator using heavy-duty, outdoor-rated cords with a wire gauge adequate for the appliance load. Overloaded cords can cause fires or equipment damage. Do not use damaged extension cords.

Carbon Monoxide

NEVER use a generator indoors or in an attached garage. Just like your car, a portable generator emits deadly carbon monoxide (CO). Opening doors and windows or using fans will not prevent CO build-up in the home. Be sure to place a portable generator outdoors, well away from open windows where exhaust fumes will not enter the house. Be sure the area is a well-ventilated, dry area, away from air intakes to the home, and protected from direct exposure to rain (preferably under a canopy).

Install battery-operated CO alarms in your home, according to the manufacturer's installation instructions. Test your CO alarms frequently and replace dead batteries.

Additional Safety Tips

Keep children away from portable electric generators at all times.

Carefully read and adhere to all instructions in your portable electric generator's owner manual.

DO NOT leave a running generator unattended. Turn it off at night and when away from home.

Avoid getting burned. Many generator parts are hot enough to burn you during operation.

Be a good neighbor. If the power is out, your neighbors are probably sleeping with their windows open. Be conscientious of the noise and the carbon monoxide.

Get the most from your generator. Save gas by using appliances only as needed. If no appliances are running, shut the generator off.