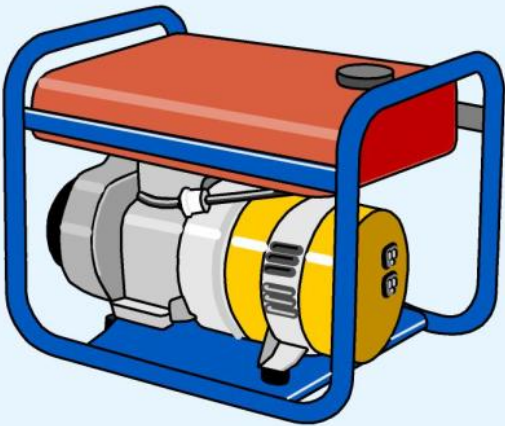


Generator Safety

Portable generator safety





When the power goes out a portable generator can be a lifesaver, but used improperly it also can become life-threatening.



DANGER	REASON	PREVENTION
Carbon monoxide poisoning	Gasoline-powered generators exhaust carbon monoxide, a colorless, odorless gas that displaces oxygen in the hemoglobin of the red blood cells.	Operate generators away from the house, in a well ventilated area. If it's in the garage, make sure the garage is open.
Backfeed shock	The generator is connected to the home's wiring system, posing a hazard to anyone working on powerlines.	Plug appliances you want powered directly into the generator. If powering a hard-wire item, such as the furnace fan, you will need a transfer switch. The switch should only be installed by a licensed electrician and requires an electrical permit and an electrical inspection.
Fire	Overloaded cords can overheat and cause fires. Small gasoline engines can sometimes backfire, causing sparks.	Be sure extension cords are properly sized to carry the electric load. Install a spark arrest muffler and keep the generator away from combustible material.

Symptoms of carbon monoxide exposure

These are possible complications average adults may expect from different percentages of carbon monoxide in their blood:

-  **10 percent:** Headaches may develop, or there may be no apparent symptoms. A carbon monoxide detector will activate.
-  **15 to 25 percent:** Headache and nausea.
-  **30 to 35 percent:** Drowsiness, weakness, dizziness, dimmed vision, severe headache, nausea and vomiting.
-  **40 percent:** Confusion, increased heart rate and blackout spells.
-  **45 percent:** Convulsions, permanent brain damage.
-  **50 percent:** Convulsions, coma and death.

SOURCES: VIRGINIA COOPERATIVE EXTENSION, UNDERWRITERS LABORATORIES INC.

GNS AND THE NEWS-PRESS

How to Choose a Generator

What size generator will I need?

Add up the power requirements of the appliances and devices you will want to use. (Check the back and sides for a label with this info.)

Add up the wattage of all the light bulbs you will want to use.

Find the total amps you need by dividing watts by volts.

Choose a generator that produces more amps than you need – because some machines draw up to 3 times as much power when starting up, and others lose efficiency over time. The best option is a permanently-installed stationary generator.

Most household devices run on 120 volts.

Most major appliances with a plug that looks like this, require 240 volts.

Using a Generator at Home

The primary hazards to avoid when using a generator are carbon monoxide (CO) poisoning from the toxic engine exhaust, electric shock or electrocution, and fire. Follow the directions supplied with the generator.

- To avoid electrocution, keep the generator dry and do not use in rain or wet conditions. Operate it on a dry surface under an open canopy-like structure, such as under a tarp held up on poles. Do not touch the generator with wet hands.
- Be sure to turn the generator off and let it cool down before refueling. Gasoline spilled on hot engine parts could ignite.
- Store fuel for the generator in an approved safety can. Use the type of fuel recommended in the instructions or on the label on the generator.
- Local laws may restrict the amount of fuel you may store, or the storage location. Ask your local fire department.
- Store the fuel outside of living areas in a locked shed or other protected area. To guard against accidental fire, do not store it near a fuel-burning appliance, such as a natural gas water heater in a garage.
- Plug appliances directly into the generator, or use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads.
- Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin.
- Never try to power the house wiring by plugging the generator into a wall outlet. Known as “backfeeding,” this practice puts utility workers, your neighbors and your household at risk of electrocution.
- Remember, even a properly connected portable generator can become overloaded, resulting in overheating or generator failure. Be sure to read the instructions.
- If necessary, stagger the operating times for various equipment to prevent overloads.

Prevent Carbon Monoxide (CO) Poisoning

- Never use a generator, grill, camp stove or other gasoline, propane, natural gas or charcoal-burning devices inside a home, garage, basement, crawlspace or any partially enclosed area.
- Keep these devices outdoors, away from doors, windows and vents that could allow carbon monoxide to come indoors.

- Opening doors and windows or using fans will not prevent CO buildup in the home. Although CO can't be seen or smelled, it can rapidly lead to full incapacitation and death. Even if you cannot smell exhaust fumes, you may still be exposed to CO. If you start to feel sick, dizzy, or weak while using a generator, get to fresh air RIGHT AWAY - DO NOT DELAY.
- Install CO alarms in central locations on every level of your home and outside sleeping areas to provide early warning of accumulating carbon monoxide.
- Test the batteries frequently and replace when needed.
- If the carbon monoxide alarm sounds, move quickly to a fresh air location outdoors or by an open window or door.
- Call for help from the fresh air location and remain there until emergency personnel arrive

GENERATOR SAFETY TIPS

- Never connect a generator directly to your home's wiring unless your home has been wired for generator use. This can cause backfeeding along power lines and electrocute anyone coming in contact with them, including lineworkers making repairs.
- To prevent back feed, standby generators should have a transfer safety switch installed by a professional and portable generators should never be plugged directly into a home outlet or electrical system – use an extension cord to plug appliances into an outlet on the generator to power them.
- Always plug appliances directly into generators. Connecting the generator to your home's circuits or wiring must be done by a qualified, licensed electrician who will install a transfer switch to prevent backfeeding.
- Ensure your generator is properly grounded, and use heavy-duty, outdoor-rated extension cords. Make sure extension cords are free of cuts or tears and the plug has three prongs. Overloaded cords can cause fires or equipment damage.
- There should be nothing plugged into the generator when you turn it on. This prevents a surge from damaging your generator and appliances.
- Never overload a generator. A portable generator should only be used when necessary to power essential equipment or appliances.
- Shut down the generator properly. Before shutting down a generator, turn off and unplug all appliances and equipment being powered by the generator.
- Keep the generator dry. Generators pose electrical risks especially when operated in wet conditions. Use a generator only when necessary when the weather creates wet or moist conditions. Protect the generator by operating it under an open, canopy-like structure on a dry surface where water cannot form puddles or drain under it. Always ensure that your hands are dry before touching the generator.
- Never fuel a generator while it is operating, and remember to always have a fully charged fire extinguisher nearby.
- Read and follow all manufacturer's instructions for safe operation. Be sure you understand them before hooking up the generator. Never cut corners when it comes to safety.
- Never operate a generator in a confined area, such as a garage. Generators can produce numerous gases, including toxic and deadly carbon monoxide. They require proper ventilation. Be sure to keep children and pets away from the generator, which could burn them. Remember maintenance between uses. It is also a good idea to inspect the fuel and oil filters, spark plug, oil level and fuel quality and to start the generator on a regular basis before an emergency occurs.



[prepare-for-emergencies/types-of-use.html](#)

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