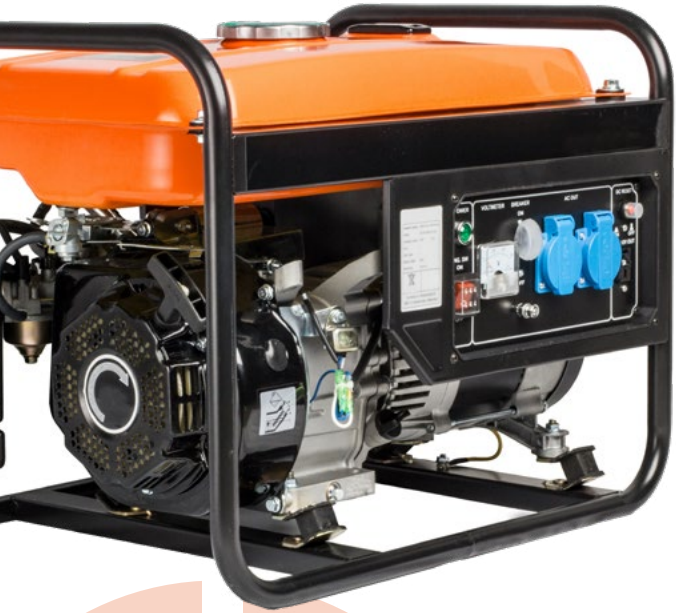
Using Portable Generators SAFELY



IDAHO POWER®

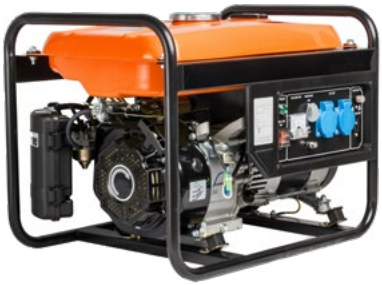
Idaho Power works hard to ensure electrical outages are rare and short-lived. Nevertheless, there are times, because of circumstances beyond our control, the flow of electricity to your home can be interrupted.

During extended outages you may wish to use an electric generator to provide power to run essential household appliances.

To report an outage, call our Customer Service Center at 208-388-2323 or toll-free 1-800-488-6151 (outside the Treasure Valley).

Visit **idahopower.com/outage** for updated information.

There are 2 ways to safely use a generator at home.

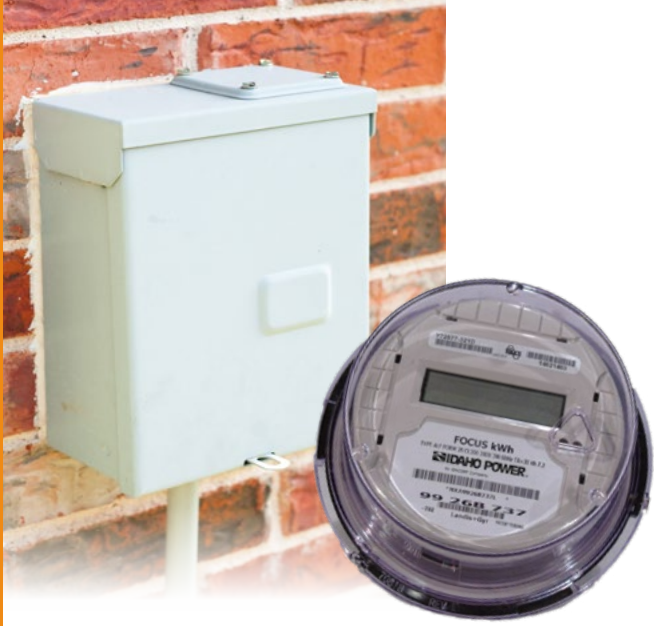


1

Use a generator rated for 120-volts alternating current (VAC) systems and run extension cords from it to each individual freezer, refrigerator, lamp, etc. This method is inexpensive, simple and provides important electrical separation from the Idaho Power electrical grid. It can be messy if you end up with extension cords everywhere. Place the generator in a safe, dry, outdoor location. This method won't allow for power to a well pump because of connection issues and the need for 230 VAC in most cases.

2

Use a generator rated for 240-VAC systems and connect it to your home's electrical system using a transfer switch to ensure safe electrical separation from Idaho Power's system. This switch must be installed on the home side of your main disconnect. This transfer switch is a double-pole double-throw enclosed switch and allows connection to your entire home from your generator. These switches come in 100- or 200-amp ratings, depending on the rating of the existing power service to your home.



The transfer switch is very important. If your generator is running and its output is not completely separated from Idaho Power's system, your generator will feed power back into Idaho Power's line through the transformer that provides you with power. The transformer will step up the current to the normal line voltage, which could be as high as 34,500 volts. An unsuspecting line worker, working on what they think is a deactivated line, could be killed.

If you do not have this line transfer switch, and your generator — running or not — is still connected to the Idaho Power system when the line is energized, your generator will be destroyed instantly.

This line transfer switch should only be installed by a qualified electrician.

Electrical Loads And Generator Sizes

One way to prevent overloading your generator is to clearly mark the individual electrical circuit breakers in your power breaker panel that must be turned off before switching to your generator. Those include your water heater, oven or range, baseboard heaters, electric furnace, large motors, etc.

What size of a generator do you need?

Make a list of each appliance or device you want to provide power to in watts. Here's a small example:

3 50-watt light bulbs	150 watts (W)
2 50-watt heat tapes	100 W
1 freezer	350 W
1 refrigerator	350 W
1 TV	100 W
1 well pump (1 hp)	750 W
	TOTAL 1,800 W

Because well pumps, freezers and refrigerators require considerable starting amperes, it is a good idea to multiply your total running watts of 1,800 W by at least a factor of 1.5 or 2.0. For the above example, a generator capable of supplying a continuous 3,000 W is advisable.

A gasoline-powered portable generator should be periodically maintained by a professional to ensure safe operation. Always operate generators in open or well-ventilated areas

If you want more information about using electrical generators in your home, please contact Idaho Power at **208-388-2323**, and ask to speak to a power quality engineer.

If you use a portable electric generator, do so with caution. Generators pose serious safety hazards when improperly used or installed. Remember to follow all manufacturer's instructions.

- **Never plug your generator into an outlet, and don't connect a generator directly to your home's main fuse box or circuit panel. This is dangerous. It could overload your home's wiring, resulting in a fire, and could backfeed into the utility electrical system.**
- If you must provide temporary power to your home's wiring system, the generator must be connected through an approved "break-before-make" transfer switch that isolates your house from the utility system before connecting your home to the generator. The switch must comply with the National Electric Code and local building codes. These include permits, inspection and installation by a licensed electrician.
- To temporarily power an appliance, plug it directly into the generator.
- Use properly sized and grounded extension cords and plug strips.
- Place cords where they don't present a tripping hazard.
- Always properly ventilate a portable generator. Gasoline-powered generators produce carbon monoxide, and the fumes can be deadly. Use them outdoors, away from windows, doors and vents, and in open areas protected from weather.
- Ensure the total electric load on your generator won't exceed the generator's rating.

CID#35840

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