ABOUT PORTABLE GENERATORS

So you're interested in getting a portable generator…

Maybe you want to make sure the food in your freezer stays frozen if there's a power outage. Or you need to power the well pump that provides you with drinking water. Or you want to be able to use your gas or oil furnace when the power's out. Or your at-home business requires that you have power to run computers or other equipment.

Whatever the reason, whenever there is an extended power outage, there is also the urge by many customers to fire-up the portable generator to get electricity flowing to certain appliances. But, if not used properly, that portable generator can pose a severe hazard to line workers and your neighbors. In addition, the generator itself also can pose a severe hazard to line workers and your neighbors. In addition, the generator itself also can be damaged if it's not connected properly.

How do I select a portable generator?

The first step in purchasing a portable generator is to identify the things you absolutely cannot live without during a power outage. Usually high on the list will be the refrigerator and the freezer, the furnace fan or air conditioning, or maybe some lighting. Consider your list carefully, because the bigger the portable generator, the more expensive it will be.

Once you have your list, calculate how much electricity those items need. Look at the wattage of each item on the equipment nameplate or in the owner's manual, and add it all up. Then keep in mind that your generator should not be run continuously at more than 80 percent of its rated capacity and take into account that appliances that operate with a motor (like the refrigerator and freezer) can require two to ten times their listed wattage in order to start. Once you factor in those conditions, you can determine the size of the portable generator you'll need.

What can happen if I don't use the generator properly?

The most common problem is something called backfeed. This occurs when a generator is connected to the home's wiring system.

The problem typically occurs during a power outage when a homeowner plugs the generator into an electrical outlet and feeding power into the home's electric system. That's when backfeed happens.

The electricity from the generator will flow through the home's wiring, out of the house through the electric meter, the voltage will get increased to about 12,500 volts as the current passes through the transformer outside (yes, it works in reverse), and then it will flow into the Electric Department's electric system – posing a potentially fatal shock hazard to anyone working on the power line or coming in contact with a line that might be sagging or on the ground.

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Can this also damage my generator?

Yes, it can. When Electric Department employees work on a power line, they routinely use a grounding system to protect themselves. If a portable generator is backfeeding to that ground, the generator could be severely damaged.

Also, when we restore power to a home that has a portable generator connected to the wiring, the sudden flow of Electric Department power into the portable generator could burn out the machine.

How can I prevent backfeed?

There are two ways. The easiest solution is to simply plug items you want powered by the generator (for example, your freezer) directly into the generator. But, that doesn't solve the problem of getting electricity to something that is hard-wired in to the house, like the furnace fan or air conditioning.

If powering the furnace fan is your objective you'll need to use something called a transfer switch, which disconnects the home's wiring from the Electric Department's wiring system and also allows the homeowner to direct the flow of electricity from the generator to any circuit in the house, such as the one powering the furnace fan.

A transfer switch should only be installed by a licensed electrician and requires an electrical permit and an electrical inspection. Most electricians or dealers that sell portable generators can arrange to get one installed in your home.

Can't I accomplish the same thing by throwing the main breaker?

Not safely. Simple circuit breakers do not make a positive disconnection between the home electric system and the Electric Department system. What's more, they've been known to fail. And, the consequences are pretty high if it does fail.

The only safe way to create a positive disconnection between the two electric systems is through the use of a transfer switch.

Are there other safety tips I should keep in mind?

Yes. Make sure extension cords are adequately sized to handle the electricity. If you're not certain, ask the dealer who sold you your generator or check with an electrician. Also, the generator itself should always be placed outside in a well-ventilated area and you should never refuel it when the engine is hot. Let it cool for at least 10 minutes to minimize the danger of fire.

Instructions on how to properly use a portable generator are included in most operating manuals. You should read them carefully.