



**American Red Cross**

## Fact Sheet: Using a Generator When Disaster Strikes

*Many people have asked the Red Cross for information about using a generator when disaster strikes. The following information, developed with technical advice from the National Fire Protection Association (publisher of the National Electric Code®), is provided to address those questions.*

### ***Purchasing a Generator***

If you choose to buy a generator, make sure you get one that is listed with the Underwriter's Laboratory (UL) or Factory Mutual (FM).

Look at the labels on lighting, appliances, and equipment you plan to connect to the generator to determine the amount of power that will be needed to operate the equipment. For lighting, the wattage of the light bulb indicates the power needed. Appliances and equipment usually have labels indicating power requirements on them. Choose a generator that produces more power than will be drawn by the combination of lighting, appliances, and equipment you plan to connect to the generator including the initial surge when it is turned on. If your generator does not produce adequate power for all your needs, plan to stagger the operating times for various equipment. If you can not determine the amount of power that will be needed to operate your appliances, lighting, and equipment, ask an electrician to determine that for you. (If your equipment draws more power than the generator can produce, then you may blow a fuse on the generator or damage the connected equipment.)

### ***Using a Generator***

Follow the directions supplied with the generator. Under no circumstances should portable generators be used indoors, including inside a garage. Adequate ventilation is necessary and proper refueling practices, as described in the owner's manual, must be followed. It is a good idea to install one or more Carbon Monoxide (CO) alarms inside your home (following manufacturer's installation directions). If CO gas from the generator enters your home and poses a health risk, the alarm will sound to warn you. Many home fires and deaths from carbon monoxide poisoning have occurred from using a generator improperly. Statistics from the Northeastern Ice Storm of January/February 1997 show that as many as 100 people were killed and 5,000 people injured by misuse of a generator at home.

*Be sure to let the generator cool down before refueling.* 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 for additional information about local regulations. Store fuel for the generator out of doors in a locked shed or other protected area. Do not store fuel in a garage, basement, or anywhere inside a home, as vapors can be released that may cause illness and are a potential fire or explosion hazard.

## ***Fact Sheet on Generator Usage (continued)***

### ***Why do you advise against hooking up a generator directly to your home's wiring?***

The safest thing to do is connect the equipment you want to power directly to the outlets on the generator. There are several reasons why hooking up a generator to your home's electrical service is not a wise idea.

Home-use (non-industrial) generators do not supply enough amperage to supply sufficient power for today's homes (that is, to run a furnace, lighting, appliances, and other electronic equipment). Unless your home's power supply was installed with a disconnect to the main power feeding lines, power you put into your home from a generator could "backfeed" into the main line and cause problems for the electrical utility company, your neighbors, or yourself.

"Backfeeding" is supplying electrical power from a generator at the residence into the incoming utility lines. This occurs when the necessary equipment used to isolate the generator from the incoming power lines is not installed.

The 1999 National Electrical Code®, published by the National Fire Protection Association, is a nationally recognized standard for safe electrical installations. The NEC® does permit an interface between the normal power source (generally the electric utility) and an alternate power source (such as a standby or portable generator) provided that the proper transfer equipment that prevents "backfeeding" is used. Simply connecting a cord from the generator to a point on the permanent wiring system and "backfeeding" power is an unsafe method to supply a building during a utility outage.

Improper connection methods not only endanger the building occupants, but pose a serious hazard to electric utility workers as well.

There are a number of products available that will provide either an automatic or manual transfer between two power sources in a manner prescribed by the NEC®. When selecting a product for this function, it should be one that has been evaluated for safe performance by a nationally recognized testing organization such as Underwriters Laboratories. The product must be installed according to the NEC®, all applicable state and local codes, and the manufacturer's instructions. Homeowners should only attempt to install such products if they have a thorough knowledge of safe electrical installation practices for this type of equipment. Otherwise a qualified electrician should be contacted.

If you have additional questions, please consult a licensed electrician, your local fire department, or your community's building safety or engineering department.