

# Using a Generator During Power Outages

When purchasing a generator make sure you get one listed with the Underwriter's Laboratory (UL) or Factory Mutual (FM).

Look to 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 power 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 equipment draws more power than the generator can produce, then you may blow a fuse on the generator or damage the connected equipment.

Follow the directions supplied with your generator. Never use portable generators indoors, this includes inside a garage. Adequate ventilation is necessary when running the generator. Proper refueling measures, outlined in the owner's manual, must be carefully followed. Make sure you have properly working Carbon Monoxide (CO) alarms inside your home.

Be sure to let your generator cool down before refueling. You must store extra generator fuel in an approved safety can. 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.

Connect the equipment you want to power directly to the outlets on the generator. Do not hook up a generator to your home's electrical service. 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.

This technical sheet has been prepared using materials from the American Red Cross, and the National Fire Protection Association.