



Energy Feature

Using electricity safely and efficiently

Generators Effective If Used Wisely

By Mike Federman

While having a backup power supply is convenient during an outage, recent events have exposed the need for better safety awareness when using a standby generator.

Carbon monoxide (CO) deaths associated with the misuse of generators have risen sharply in the past decade, according to the National Fire Protection Association, which recorded an increase of nonfire CO-related deaths of 18 percent between 2003 and 2005.

Six people died from carbon monoxide poisoning in the Puget Sound area in December 2006 after a windstorm knocked out power to more than 1 million customers in Western Washington.

State health officials estimated that hundreds of people suffered some degree of CO poisoning while using generators or other combustible fuel devices for heating or cooking.

One Seattle hospital treated more than 60 people in a hyperbaric chamber to re-oxygenate their blood, The Associated Press reported during the storm's aftermath.

To safely use generators, camp stoves and barbecue grills, they should be operated only in well-ventilated areas outdoors so emissions can't enter the home.

It is a good idea to have a CO alarm that detects the presence of the odorless and colorless gas.

Turn off a generator when refueling it, and store gasoline, diesel or propane outside of living areas.

Plug appliances directly into a generator or use an extension cord. Do not try to power a home's wiring by plugging the generator into a wall outlet.

All-Important Transfer Switch

A permanently installed standby generator for a home or business requires a transfer switch to isolate it from a utility's power grid. The main breaker on an electric panel does not qualify as a transfer switch under the National Electrical Code.

It is important to follow the transfer switch requirement for two reasons:

1) It prevents the backflow of current across distribution lines that could electrocute a lineman working to restore power during an outage.

2) It protects the generator from damage when



Images courtesy of Cummins Power Generation.

regular electricity service has been restored and current flows back to the home or business.

An automatic transfer switch senses power interruptions. The switch delays activation for 10 to 20 seconds to determine whether power will resume. This prevents the generator from cycling on and off every time there is a power fluctuation.

After power is restored, the transfer switch waits for a sustained current flow before shutting off the generator.

Permanent installation of a standby generator should be done by a licensed electrician. Proper permitting is required, and installation must comply with the National Electrical Code and state and local codes.

Notify your utility if you are using a generator. During an outage, if a repair crew sees your lights are on, it might assume you still have power. ■

Power Requirements

Typical Wattage Use (amp x volts = watts)	
Household Electronics	Wattage Consumption
Air conditioner 10,000 BTU	1,500
Clock radio	10
Coffee maker	900-1,200
Computer	100-200
Double elec. blanket	100-150
Electric skillet	1,000-1,500
Portable heater	750-1,500
Microwave	750-1,100
Refrigerator	225-625
Television	100-200
Toaster	800-1,400
Vacuum	1,000-1,440

Source: U.S. Department of Energy

Before buying a generator, check the power requirements of each device you want to run off the generator.

Use the chart at left to get the approximate wattage consumption of household electronics.

Wattage is marked on the back or bottom of the appliance, or on its nameplate.

Note that some larger appliances, such as refrigerators, require three to four times more power to start than they use during normal operation.