

## How Power Gets Restored

Depending on the outage severity, it may take hours, days, or weeks for power to come back on.

Restoration may be focused on power lines that serve the largest population, hospitals, emergency service agencies, shelters, nursing homes, community wells and other essential services.

## Alternate Power Sources when the Electricity Goes Out!

Alternate energy sources can be easily obtained, very efficient and maintenance-free (like disposable batteries).

- **Disposable alkaline batteries:** Try to stay with or move toward commonly available battery types and sizes; AAA, AA, C or D. Unopened, these batteries have about a 7-year shelf-life. Specialized batteries will be hard to acquire in an emergency. Consider a AA battery 'power pack' for cell phones and other electronics.



- **Generators:** These include portable generators that are easily moved and generally 5,000 watts or less. (See safety tips on reverse side).
- **Power inverters:** An inverter converts direct current (DC) like a car battery or solar panel into alternate current (AC) voltage suited for household appliances. An **Automobile inverter** allows phones and other electronics to be re-charged in your car.



(Automobile inverter)

- **Solar:** Solar charged landscape lights can be brought into the house for lighting, and solar/AC 'power packs' are available for cell phones and other electronics.

## Conserve Your Alternate Emergency Power

- Remove batteries when not in use.
- Store batteries in a cool dry place.
- Know what you must operate in an emergency to preserve life or food safety like oxygen concentrator, refrigerator and freezer.
- Consider running your generator only as necessary (cycling on and off) to conserve fuel.
- Pre-charge critical batteries for phones, back-up battery storage cells and invertors, check their charge on a regular schedule.
- In an emergency, turn off your cell phone when not in use. Limit texting or calling to emergency needs only. Set a pre-arranged time once a day to text or call family or out-of-area contact.

## Medically Fragile

If you, a family member, neighbor, or anyone you care for requires electricity for life-sustaining equipment:

- Register needs with your electricity provider.
- Be prepared to call your medical equipment provider; most provide 24 hour service.
- Have an emergency generator.
- Have sufficient fresh fuel and oil to operate the generator.
- Have a plan for who will start the generator and maintain it.
- Be prepared to call 9-1-1.
- Have non-electrical back-up oxygen canisters and know your oxygen flow rate (liters/minutes).
- If oxygen dependent, conserve your oxygen by limiting your activities or having a caregiver do the task
- Have cold storage back-up for medicines that must remain cold.

**NEVER** use a portable generator indoors, in a garage, carport, crawl space or other enclosed or partially enclosed areas, or near an open window - including the neighbors

## Know Appliance Power Usage to Make Informed Decisions

A crucial step in choosing a generator is knowing what you must run in an emergency and what you can live without. Below are average watt usages for standard household appliances.

Household appliance	Avg. wattage (double for appliance start-up)
Refrigerator	725
Freezer	600
Well pump (deep well)	700
Oxygen concentrator	120 to 500
Cell phone charger	5
TV (20-inch LCD)	65
TV (60-inch plasma)	340
Computer desktop (CPU & monitor)	125
Computer laptop	25
Light bulbs	25 to 100

## Power Guzzlers:

A general rule is **Do Not** operate appliances that 'heat-up' like an oven, dish washer, clothes dryer, hair dyer, coffee pot, toaster, etc.

Household appliance	Avg. wattage (double for appliance start-up)
Water heater (electric)	5,000
Range	4,500
Toaster	1,100
Toaster oven	1,225
Coffee maker	1,050
Electric Skillet	1,000 to 1,500
Microwave oven	925

Consult with someone knowledgeable about generators or use the calculator (see link below), which provides an average wattage rating for most common electrical household appliances or devices.

[http://www.consumerreports.org/cro/resources/images/video/wattage\\_calculator/wattage\\_calculator.html](http://www.consumerreports.org/cro/resources/images/video/wattage_calculator/wattage_calculator.html)

This calculator will help you tally your needs. Remember, generators are intended to temporarily provide for your basic needs during an emergency.

# POWER OUTAGES



When the wind blows hard,  
Power lines come down!

**Have an Emergency Power Outage Plan  
Before a Disaster Hits**



## **Before an Outage...**

- **DO** consider buying a generator; learn what size fits your needs.
- **DO** install a generator per electrical code 702.6.
- **DO** register life-sustaining and medical equipment with your utility company.
- **DO** make sure you have a safe alternate heat source and supply of fuel.
- **DO** have light sticks, flashlights, battery-powered radio with extra batteries.
- **DO** learn how to open the garage door without power, if you own an electric garage door opener.

## **During an Outage...**

- **DO** stay away from downed power lines and sagging trees.
- If your house is the only one without power, **DO** check your fuse box or circuit panel.
- If power is out in your neighborhood, turn-off or unplug heat producing appliances to reduce the initial demand.
- **DO** notify your local utility of the power outage.
- **DO** unplug computers and other sensitive equipment to protect them from surges. Only run your computer if your generator is computer-rated for 'power quality'.
- **DO** turn off all lights, except one to alert you when power is back on.
- **DO** keep refrigerator and freezer doors closed.
- **NEVER** use gas ovens, gas ranges, barbecues or portable propane heaters indoors for heating – they use oxygen and create carbon monoxide that can cause suffocation.
- **NEVER** use candles, oil lamps or other flammable light sources. They are not an appropriate substitute for a flashlight.

## **After an Outage...**

- **DO** wait at least 15 minutes after the power comes back on before turning on other appliances; then turn 1 appliance on at a time.

## **Use a Generator Safely**

- **Never** use a portable generator indoors, in a garage, carport, crawl space or other enclosed or partially enclosed areas, or near an open window – including the neighbors.
- **Never** plug a portable generator into an electrical outlet in the house. This power will 'backfeed' into the utility lines and could kill a utility worker.
- **Never** run a generator on maximum load, it could damage appliances and overheat the generator.
- **Never** refuel a running generator or a 'still-hot' engine because it could ignite the fuel.
- If you plan to use a generator, install a carbon monoxide detector.
- Determine the amount of power you will need to operate items that you plan to plug in to the generator.
- Follow the generator owner's instruction.
- Use heavy-duty extension cord, at least 12 gauge, outdoor rated and less than 100 feet long.
- Start the generator and let it run before plugging in your appliances.
- Let one appliance power up and stabilize before plugging in another. Note: an 800 watt refrigerator requires 1,600 watts at start-up.
- Store sufficient fuel in safe, protected containers. When you lose power, so do most nearby gasoline stations.
- Try to conserve fuel by using only necessary appliances and lights. Turn generator off over night.
- The key to long engine life is oil. During prolonged outages, change the oil according to owner's manual instructions.
- Unplug generator immediately when power comes back on.

