

Goals

This project originated to assist residents of the Lakewood Hills area of Windsor, California and people in the greater fire-risk community to deal with planned power shutoffs by the commercial electric power provider. Health, safety, comfort, property protection, resilience and care for those residents who require extra assistance are the key concerns.

These guidelines pertain primarily to the suburban neighborhoods where most residents live in single family detached buildings, townhomes or duplexes and have the means to procure necessary items in advance. While many of the preparatory and adaptive steps outlined here will apply to people living in urban areas, rural environments, in multiple-unit dwellings or in other settings, the contributors to this project did not have the experience to specifically address all of those needs.

Secondary goals of the project are to provide this information to people in all areas at risk for power shutoff and to document lessons learned for future benefit.

Advance Preparation

In advance of a power shutoff you need to talk with your neighbors, let them know of your particular needs and the resources that you can offer. Share with them the information contained in this review and read about likely power shutoff scenarios. For example, PG&E has said that most safety shutoffs will last 24 - 48 hours, but could continue longer if red flag conditions persist or if fire occurs. Generally, there will also be a day or two of advance warning of a planned safety power shutoff, so that residents can fine-tune their preparations. This day or two warning is not the time to go out and buy batteries and water—that needs to be accomplished well in advance. Remember, we live in earthquake country and you should already be prepared for disruption of services. Most emergency authorities say that you need a three to seven-day supply of independent living provisions.

If you require health-support electrical devices, contact PG&E. In the event of a power shutoff, they will notify you of dedicated facilities where you can find electrical power for your devices.

You must to have on hand

You must have standard Earthquake supplies: non-perishable food, water, first aid kit, cell phone, radio, flashlights, batteries, cash and medications. Obtain and test in advance two cigarette-lighter type chargers for use with your cell phone, laptop and tablet.

Other desirable items that may be helpful

During a power outage, the following items can make life safer and more comfortable: DC to AC power inverter, AC generator (gasoline or propane), barbeque grill or camp stove, heavy duty 12 gauge extension cords, lantern and head lamps. Freezer contents will remain frozen longer if you fill spaces in the freezer with frozen blue ice or water bottles. You'll need to either operate your landscape sprinkler systems manually or deploy hoses and battery-operated faucet timers.

If you leave home during red flag alerts, your landscape vegetation will dry and become more of a fire hazard.

How to monitor anticipated shutoffs

Listen to radio news, or follow on television. Check PG&E's weather site:

https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-weather-map.page?WT.mc_id=Vanity_weather

Make sure that you are signed up with PG&E or other commercial electric power providers to obtain cell phone alerts of pending or actual power shutoffs. During the 2017 wildfires, a number of people communicated via email on the Lakewood Hills Forum. The Forum is not an emergency network but it served to offer news, ideas and support and led most residents to tune to KSRO radio for ongoing updates. KSRO also streams live on the internet. Keep multiple lines of communication open.

How to keep cell phones charged

Your cell phone will be essential for making emergency calls and will be one of the best devices for obtaining alerts and reports. You should register with these two sites:

<http://sonomacounty.ca.gov/FES/Emergency-Management/SoCoAlert/>
www.nixle.com

Keep the phone charged and available. You should determine in advance which vehicles that are available to you have an active cigarette-lighter type outlet that is on even when the vehicle's ignition is turned off. That vehicle will be the one you will use to charge your phone, tablet, etc. A vehicle that requires you to turn the ignition on is a second choice.

One of our residents somewhat lightheartedly suggested moving to the RV lot and living off of the vehicles, food, drink and energy sources there. That idea has insight. Many of the RVs contain good battery systems and can charge a cell phone or run a laptop. Most have radios, some have television, some even provide 120 VAC power. And at least one sailboat has a photovoltaic panel that keeps its internal batteries charged all year long. A person could plug into the cigarette-lighter type outlet in that boat to charge cellphones or run a laptop.

With a DC to DC converter, like the one pictured, you can use any moderate voltage battery or solar source up to approximately 30 volts and convert it down to either 12 volts for your cigarette lighter charger or to 5 volts to charge the phone directly. This is the most energy efficient approach, but does require an understanding of electricity. It will also power your laptop, radio, etc.



How to use your computer: When commercial power is turned off, your cable or satellite internet router will also fail (unless it has back-up batteries) and you will find yourself without internet connection. You'll need to not only power your computer, but also your internet router. If your router is not operable, you may ask a neighbor to access theirs. If you are running low on electrical energy, use your cell phone to access the internet, as the phone runs on less power than a computer. Cell phones can also be used in tethering mode to connect you computer wirelessly to the cellular phone network. Learn how to do this. While in use, tethering will increase electrical energy consumption from the phone's battery.

How to provide supplemental power for major household functions

Inverters: The simplest solution to running a television, computer and cable internet router is an inverter. Many choices are available. Do your own reading and you can find a good choice that suits your needs. If you prefer a quick and general answer to "which inverter is best", buy a 300 watt pure sine wave inverter that runs off of 12 volts DC. You can power this from your automobile battery.

If you need more power, perhaps to run your refrigerator for a brief time, buy a 1,000-watt pure sine wave inverter with 2,000-watt surge capacity. Note that from a 12-volt car battery, 1,000 watts of power delivered to an AC appliance will drain the car battery at 80 amps. The car battery will not last long at this rate, and these high currents can be dangerous for a person unaccustomed to dealing with them or who does not have proper cabling and physical support.

Generators: Standard gasoline or propane powered generators usually supply 3,000 to 4,000 watts, are noisy and require fuel, but when properly arranged, can power two households. Do not back feed your generator power into your home electrical panel unless you know exactly what you are doing and have locked the main disconnect in the disconnected position. You risk fire, injury or death (including electrocution of a utility or public safety worker) if you do this improperly. Generators can also be moved to other nearby homes, rotating power to multiple residences throughout the day. Be considerate; avoid running noisy generators after 10:00 p.m.

Inverter-Generators: These smaller units, often seen at farmers' markets or other public events, are lighter and run more quietly efficiently than standard generators. They are also more expensive. Many are available in the 1,000 to 1,600-watt range and can power your refrigerator, minor household items and television. Remember to use heavy duty extension cords.

Solar panels on your roof: Newer photovoltaic installations include a small inverter capable of supplying 1,000 to 1,800 watts while the panels are fully illuminated by sunlight. Learn how this works in advance. Do not wait until the emergency occurs as you may not be able to make a call to tech support once you are in emergency conditions.

Electric Vehicles: E-Vs contain varying quantities of stored electrical energy and may function as a longer-term solution to powering items when you do not have solar power or cannot use a

generator. Electric cars contain tens of kilowatt hours of electrical energy that can be routed through an inverter and run anything from cell phone chargers to refrigerators. Again, you need to learn how to do this in advance, have proper cable, connectors, physical support and ventilation. You need to check on these systems frequently. As with generators, do not back feed your house unless you are thoroughly familiar with the process of fully disconnecting from the commercial electrical mains and you monitor this carefully. You could electrocute a utility worker. In some cases, you may not be able to use this method in a closed garage because some electric cars have a back-up gasoline engine that will start automatically as batteries discharge.

When you know that the electricity is going to be turned off, or has been turned off

Open your garage door, or ask your pre-arranged neighbor/support assistant to open it for you. Either securely prop the garage door open so that it will not drop down and cause damage or injury or if you want to close the garage door, park and lock your car outside.

Check your phone for emergency information. Charge your phone fully in advance. Charge your laptop fully in advance. Check your evacuation supplies in the event that the emergency should escalate. Check on your neighbors.

Turn off light switches, air conditioners and large power-consuming devices both inside and outside your home. This reduces surge demand when power is being restored.

Notify friends or relatives of your status

Assemble your backup phone/radio/light chargers.

Keep plenty of gasoline in your automobile's tank.

Where can I obtain food during power shutoff?

Though this is not specifically advertised or guaranteed, many neighborhood supermarkets have back-up generators that can power the stores for days, keeping registers operating and food cold. Areas closer to the coast may be at lower risk of power shutoffs and may have both markets and restaurants operating.

To stay or to flee?

For longer periods of power outage, some people will consider leaving home and staying somewhere else. If you elect this approach, make sure that the conditions that have created the power outage here are not likely to cause power outage where you are heading. Your situation could become worse if you are in a motel, friend's house or other less compatible environment and the power fails there also.

If our neighborhood contains houses that are identifiable as vacated, they become more attractive targets for burglary. Many intrusion-detection alarm systems will not be functioning during a power outage. And without electricity, your automatic sprinkler system will not operate, leading to drying and damage to your greenspace. If you leave home, make sure all dry debris, leaves, etc. are swept up and discarded. Dry hot winds will blow more leaves, pine needles and even branches off of trees. If you leave, arrange to have someone else monitor your property to remove this debris. It is important to keep landscape clean and green.

If you have vacated your house, you also lose the ability to make a last stand defense if fire is approaching.

You can continue to live in Lakewood Hills during a power outage. With proper preparation and cooperation, you can protect your property, your landscaping, pets, fish and neighbors during a commercial power outage. You need to be prepared.

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