

# **Emergency Power Planning for People Who Use Electricity and Battery Dependent Assistive Technology and Medical Devices**

By June Isaacson Kailes, Disability Policy Consultant  
March 2006

**Distribution of this document is encouraged provided you follow the simple instructions at the end of the article. Suggestions for improving this article are welcome. Please send comments to the author [jik@pacbell.net](mailto:jik@pacbell.net)**

This emergency power planning checklist is for people who use electricity and battery dependent assistive technology and medical devices. Electricity and battery-dependent devices include:

- breathing machines (respirators, ventilators),
- power wheelchairs and scooters, and
- oxygen, suction or home dialysis equipment.

Some of this equipment is essential to your level of independence while other equipment is vital to keeping you alive! Use the checklist below to make power-backup plans.

This document also contains:

- how to establish a support team,
- how to mastering the skill of giving quick information on how best to help you,
- advice from users, and
- sources for more information.

<b>Emergency Power Planning for People Who Use Electricity and Battery Dependent Assistive Technology and Medical Devices*</b>			
Complete	Date	Does not Apply	Item
			<b>Planning Basics</b>
			Create a plan for alternative sources of power.
			Read equipment instructions and talk to equipment suppliers about your backup power options.
			Get advice from your power company regarding type of backup power you plan to use.
			Regularly check backup or alternative power equipment to ensure it will function during an emergency.
			Teach many people to use your backup systems and operate your equipment (see below <i>Establish a Support Team</i> ).
			Keep a list of alternate power providers.
			<ul style="list-style-type: none"> <li>Ask your nearby police and fire departments and hospital if you could use them as a backup for your equipment power if your backup systems fail.</li> </ul>
			Label all equipment with your name, address, and phone number. Attach simple and clear instruction cards to equipment and laminate them for added strength.
			Keep copies of lists of serial and model numbers of devices, as well as important use instructions in a waterproof container in your emergency supply kits.
			<b>Life-Support Device Users</b>
			Contact your power and water companies about your needs for life-support devices (home dialysis, suction, breathing, machines, etc.) in advance of a disaster.
			<ul style="list-style-type: none"> <li>Many utility companies keep an emergency list and map of the locations of power-dependent customers. They will put you on a “priority reconnection service” list. Contact the customer service department of your utility company (ies) to learn if this service is available.</li> </ul>
			<ul style="list-style-type: none"> <li>Even if you are on the “priority reconnection service,” list, your power could still be out for many days following a disaster. It is vital that you have power backup options for your equipment.</li> </ul>
			Let your fire department know that you are dependent on life-support devices.
			All ventilator users should keep a resuscitation bag handy. The bag

		delivers air through a mask when squeezed.
		If you receive dialysis or other medical treatments, ask for your provider what the plans are in an emergency and where you should go for treatment if your site is not available after an emergency.
		<b>Oxygen Users</b>
		Check with your provider to determine if you can use a reduced flow rate in an emergency to extend the life of the system. Record on your equipment the reduced flow numbers so that you can easily refer to them.
		Be aware of oxygen safety practices:
		<ul style="list-style-type: none"> <li>• avoid areas where gas leaks or open flames may be present.</li> </ul>
		<ul style="list-style-type: none"> <li>• Post "Oxygen in Use" signs.</li> </ul>
		<ul style="list-style-type: none"> <li>• Always use battery powered flashlights or lanterns rather than gas lights or candles when oxygen is in use (to reduce fire risk).</li> </ul>
		<ul style="list-style-type: none"> <li>• Keep the shut-off switch for oxygen equipment near you so you can get to it quickly in case of emergency.</li> </ul>
		<b>Generator Users</b>
		Make sure use of a generator is appropriate and realistic.
		Operate them in open areas to ensure good airing.
		Safely store fuel.
		<ul style="list-style-type: none"> <li>• The challenge when you live in an apartment is knowing how safely to safely store enough gasoline.</li> </ul>
		<ul style="list-style-type: none"> <li>• Store a siphon kit.</li> </ul>
		Test it from time to time to make sure it will be work when needed.
		<ul style="list-style-type: none"> <li>• Some generators can connect to the existing home wiring systems; always contact your utility company regarding critical restrictions and safety issues.</li> </ul>
		A 2,000 to 2,500-watt gas-powered portable generator can power a refrigerator and several lamps. (A refrigerator needs to run only 15 minutes an hour to stay cool if you keep the door closed. So, you could unplug it to operate other devices.)
		<b>Rechargeable Batteries</b>
		Create a plan for how to recharge batteries when the electricity is out.
		Check with your vendor/supplier to find alternative ways to charge batteries. Examples include:
		<ul style="list-style-type: none"> <li>• Connecting jumper cables to a vehicle battery.</li> </ul>
		<ul style="list-style-type: none"> <li>• Using a converter that plugs into a vehicle's cigarette lighter).</li> </ul>
		<ul style="list-style-type: none"> <li>• Substituting a vehicle battery for a wheelchair battery but it the charge will not last as a charge for a wheelchair's deep-cycle battery</li> </ul>
		If you use a motorized wheelchair or scooter, if possible store a lightweight manual wheelchair for emergency use.

		<ul style="list-style-type: none"> <li>• Stored extra batteries require periodic charging even when they are unused. If your survival strategy depends on storing batteries, closely follow a recharging schedule.</li> </ul>
		Know the working time of any batteries that support your systems.
		When you have a choice, choose equipment that uses batteries that are easily bought from nearby stores.
		<b>Other Backup Plans</b>
		<b>When Power is Restored</b>
		Check to make sure the settings on your medical device have not changed (medical devices often reset to a default mode when power goes out).
* Review and update this checklist every six months (one way to remember to do this is when you set your clocks forward in the spring and back in the fall).		

### Establish a Support Team

Build a support team of people who will help you in an emergency if necessary. They should be people who are regularly in the same area as you. The real first responders in an emergency are often your neighbors, friends and co-workers. These people, not professional first responders, make 70% of rescues in major disasters.

When you train many people, you create a universal team. When everyone knows what to do, everyone can help!

Build support teams with many people at every place where you spend a large part of your day: at work, home, school, or volunteer site. This is especially important when it is hard to predict who will be where you are at any given time.

Practice with different people to figure out who will best be able to help you.

Traits to look for may include people who are:

- Strong,
- Calm,
- Listen well,
- Communicate clearly,
- Can guide you safely, and
- Attend to important details.

Work with people who are dependable and have the physical and emotional ability to assist you reliably.

### **Buddy Systems and Attendants: Do Not Rely on One Person**

Do not depend on any one person. Buddy systems (choosing and training one person to assist you in an emergency) have weaknesses. You and your buddy may not be able to contact each other quickly in an emergency.

If you rely on personal assistance services (attendants), they may also not be available when you need them. Therefore, it is important that your support team include other people.

### **Plan Multiple Ways to Give and Get Information**

Different communication systems work differently. In an emergency, some may work when others fail. The more systems you have available to you, the more likely it is that you will be able to contact other people. How many of these systems do you have?

- E-mail
- Internet
- Pagers
- Text messaging
- A standard phone that does not need electricity (most new phones, including cordless ones, need to be plugged into an electrical outlet)
- Cell phone
- Low cost two -way radios
- Ham radio

### **Master the Skill of Giving Quick Information on How Best to Help You**

In spite of your best planning, sometimes you have to build a support team on the spot. Think about what you will need, how you want it done and what kind of people you want to work with if you have a choice.

Be ready to give people who may not know you all the information they need to be able to help you without causing injury. Be clear, specific, and concise with your directions. Think about how much detail is necessary. Be ready with additional instructions if necessary. Practice giving these instructions using as few words as possible. For example:

- "Connect the battery by the window to my vent by following the instructions attached to the battery."
- "Take my oxygen tank; right side of green bookcase. I can breathe without it for 15 minutes."
- "Take my communication device from the table by the wall."
- "Take my manual wheelchair."

- “The traditional "fire fighter's carry" is hazardous for me because of my respiratory condition. Carry me by ..... “
- “You have to carry me out. Get an evacuation chair hanging at the top of ‘stairway two’ and I will tell you what to do next.”

If communicating may be a problem, consider carrying preprinted messages with you, for example:

*I cannot speak, but I do hear and understand. I use a communication device. I can point to simple pictures or key words. You will find a communication sheet in my wallet.*

### Advice from Users

- **Bob Mauro, WEBSITE: <http://www.geocities.com/ram9872002>  
Author of *SUCKING AIR, DOING WHEELIES* available on  
[amazon.com](http://amazon.com)**

I have my resuscitator bag with me at ALL TIMES, in case my vent fails. I have drills to see how long it takes to deploy it and use it. I can pump it myself for at least 15 minutes with my foot. I have a long hose on it that gives me time to call 911 if I am out. I do drive and use paratransit. I also save my old wheelchair batteries because even though they no longer work for my wheelchair. They will run my plv-100 vent for about ten hours each. I have 4 batteries I keep on trickle charge (trickle charger is a small charger you can get from the vent company or most electronic stores, like radio shack. It charges the battery at a slow rate so you can leave it connected to the battery for long periods, unlike a normal car battery charger). I also have one on my wheelchair and one on my bed vent. All 6 batteries are on charge at least daily. During the big northeast blackout, I was without power for 22 hours. I went thru one battery and was on the second battery when power came back on. I have the batteries on a cart I can easily drag anywhere in the house.



### **On Support Teams:**

My mom and dad used to help me, but now they have mild Alzheimer's and I help them. I do have a personal assistant /attendant 5 days a week 4 hours a day. I depend on 911 in big emergencies, but in 33 years living here, I have not had to use them more than once.

I joined the Automobile Association of America so I can get help in my van if I get a flat tire, etc. They helped me get going again several times. They are great.

Here's the story on using 911. The day after this Christmas, I had a bad cough from bronchitis. It scared me. Mom and dad can't drive and my brother was nowhere to be found when I called his home. So I called 911.

They were here in 4 minutes, 2 cars and an ambulance. I did not want to leave without my wheelchair. They could not, and would not get it in the ambulance. Those ambulances should be wheelchair accessible! The paramedics offered to put me on a stretcher and use a resuscitation bag to breathe for me. I said no. Then they offered to drive my van with me in it to hospital. Their bosses said no.

So I drove to ER with a police escort and the paramedics following in the parade. We drove with sirens and lights flashing. We drove thru red lights. It was fun and funny! When I got to the hospital, the cops said I drive great. I asked if they were going to give me a ticket for going thru all the red lights. They laughed.

It turned out I was fine. No pneumonia or temperature. But I did spend 6 hours in ER and then drove home. It was an experience. The next day, I timed how long the internal battery in my vent would last disconnected from my big vent battery on my wheelchair. The vent's internal battery lasted 90 minutes before the vent died. So if I need to go to ER in ambulance, they can just take my vent and leave my wheelchair home, since the vent's internal battery will run my vent for 90 minutes.

**International Ventilator Users Network - Ventilator Backup: Are You Prepared?** Advice From Users: [http://www.post-polio.org/whatwks\\_b.html#vent](http://www.post-polio.org/whatwks_b.html#vent)

- **PAUL KAHN** ([cairokahn@aol.com](mailto:cairokahn@aol.com)) is editor of *Disability Issues*, a quarterly publication of the Community Information Network for Individuals with Disabilities, Boston, Massachusetts. Paul is a ventilator user due to centronuclear myopathy.

"I have two PLV-100 ventilators that my home care company provides. I keep one by my bed. It is plugged into the house current. The other sits on a tray on the back of my wheelchair. It is powered by an external battery underneath the chair. My apartment building has an emergency generator that kicks in when the electricity goes out. It supplies current to certain public areas of the building. There is an outlet for the generator down the hall from my apartment. When the electricity goes out, I plug a long extension cord into that outlet and connect it to a power strip. Then I plug my bedside ventilator into the power strip.

"For my wheelchair ventilator, I rely on its internal battery to take over if the external battery fails. The internal battery will power the ventilator for close to two hours. I also have an Ambu<sup>®</sup> bag that I take with me whenever I'm away from home. I also have two suction machines. One is stationary and like my bedside ventilator, can be connected to the house current or the emergency generator. The other is portable and has a battery that I recharge regularly."

- **MARGARET E. DAVIS** ([med43@earthlink.net](mailto:med43@earthlink.net)) is a respiratory polio survivor who uses noninvasive nasal ventilation at night and mouth intermittent positive pressure ventilation during the day.

"We live in central Arkansas where tornadoes are common; being without power is a given. We have a large gasoline generator at home. It will power my ventilator and my husband's bilevel unit and a few other appliances for eight hours before we need to refill it. I can easily start it myself by turning a key. Our van has an inverter hardwired to an auxiliary battery with two outlets. I can charge my wheelchair battery and my HT50<sup>®</sup> (Newport Medical Instruments, [www.newportnmi.com](http://www.newportnmi.com)) at the same time without any problems.

---

---

**Sources for More Information**

**Disaster Resources for People with Disabilities and Emergency Managers**  
<http://www.jik.com/disaster.html>

**EMERGENCY PREPAREDNESS: TAKING RESPONSIBILITY FOR YOUR SAFETY - Tips for People with Activity Limitations and Disabilities**

[www.espfocus.org](http://www.espfocus.org)

**Power-Dependent Equipment**

[www.redcross.org/services/disaster/beprepared/dissup.html](http://www.redcross.org/services/disaster/beprepared/dissup.html)

**FDA Offers Tips about Medical Devices**

[www.fda.gov/cdrh/emergency/hurricane.html#outage](http://www.fda.gov/cdrh/emergency/hurricane.html#outage)

---

Distribution of this document is encouraged as long as:

1. No changes are made to the contents of the document.
2. The document is not sold for profit.
3. The author is notified of such use by fax at 909-469-5503 or e-mail:  
[evac@westernu.edu](mailto:evac@westernu.edu)
4. This citation is attached to each copy distributed:

Kailes, June Isaacson. *Emergency Safety Tips for People Who Use Electricity and Battery-Dependent Devices*, 2006. Published and distributed by the Frank D. Lanterman Regional Center and June Isaacson Kailes, Disability Policy Consultant, e-mail [evac@westernu.edu](mailto:evac@westernu.edu).

...