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<http://www.consumerreports.org/cro/2012/01/surprise-your-high-tech-home-phone-system-could-go-dead-in-an-emergency/index.htm> Surprise! Your high-tech home phone system could go dead in an emergency

Fiber and VoIP systems are vulnerable to power outages. Learn how to prolong service and stay in touch when the lights go out.

Published: January 2012

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Telephone and cable companies like to boast about their sophisticated landline fiber optic and VoIP telephone systems.

But there's one possible drawback they don't highlight: losing your phone service during a power outage.



As many people in the eastern United States likely found out the hard way during last August's Hurricane Irene and two months later during October's freak snowstorm, VoIP and fiber landline telephone systems generally don't have the same ability as old-fashioned copper lines to maintain service indefinitely when the power goes out. (Find out how to [stay in touch during an emergency](#).)

Instead, today's VoIP and fiber systems typically provide up to eight hours of standby service, and then only if they're equipped with an in-home battery backup. Otherwise, the phones go dead.

That renders the lines useless for dialing 911, loved ones, friends, and others during disasters, when telephone access often is needed most. That's a particular problem if you don't have a cell phone as a backup; if the cellular networks fail, as some did during Hurricane Irene and the [October snowstorm](#); or if you can't recharge the batteries on mobile phones because your power is out.

"My landline was good for about eight hours after I lost power yesterday. That's not good enough!" wrote one Verizon customer in an online forum. "The main reason we still have a landline phone is that in a power failure emergency, the

phone should always work . . . Why change a basic phone design that was in place for over 60 years?"

The federal government has taken steps to assure that people have access to emergency 911 service where available, but there's nothing compelling telephone companies to ensure the phone themselves can operate during a power outage. Access to 911 is so important that we have long advised VoIP customers to maintain a separate, basic copper line, especially those without cell phones or who can't receive a cellular signal from their homes.

The concern will only deepen as more households switch over to VoIP and fiber systems and as telephone companies, motivated to cut costs, remove or simply deactivate the old copper lines that have been the backbone of the nation's phone system for decades. The Federal Communications Commission estimates that about 28 percent of residential wireline 911 calls are made using VoIP service.

Even where copper lines continue to run alongside the newer fiber and hybrid fiber lines, phone users may not be aware that they can still opt for traditional service. And those who try may be discouraged by the telephone companies' policies denying the best pricing to those who insist on staying with copper as part of their bundled telecommunications services.

Pros and cons of copper

Telephone companies have long used copper lines, while the cable television companies have relied on coaxial cable for TV, Internet, and VoIP telephone service. Both industries now are making increased use of fiber, hybrid fiber-copper, or hybrid fiber-coaxial cable lines.

The benefit of the old copper service is that, unlike fiber and hybrid-fiber lines, it carries not only the voice and data signals but also the power to operate a standard, non-cordless telephone. The phone company itself provides that power, which often keeps the phones working even when a problem at the power company knocks out electric service.

But traditional copper telephone lines can't handle the large amount of data required for television and high-speed Internet services, especially over long distances. Although advanced techniques can enhance copper's capabilities, Verizon, AT&T, and most other companies are installing fiber or hybrid fiber lines, in some cases alongside the copper ones. We've found that telephone and cable company terms and conditions typically warn customers that these systems can't maintain phone service indefinitely during a power failure, if at all.

"If there is a power outage, or if there is a disruption to the cable network or facilities, the Service (Optimum Voice) will not work," says the customer

agreement for New York-based Cablevision. “Subscriber expressly acknowledges that in such cases it will not be possible to place or receive calls including calls to access emergency 911 services.”

The problem is greatest with cable company VoIP services and with systems that use fiber lines all the way to the home, such as Verizon’s FiOS. It can be less of a concern with hybrid copper-fiber systems, in which copper lines carry the signal the last mile or so to the home. In those systems, carriers can maintain phone power by installing batteries and generators at the point where the fiber meets the copper, as AT&T and CenturyLink did in parts of the country during Hurricane Irene.

Battery backup

For telephone and cable companies alike, the primary approach to maintaining service during a power outage is to provide an in-home battery backup system that can keep customers’ corded phones operating for up to eight hours, less if they make or receive any calls or if the backup battery is too old.

Most carriers, including AT&T, Brighthouse, Comcast, Cox Communications, Time Warner Cable, and Verizon, provide such a backup system to all their customers at no additional charge. But Cablevision and Missouri-based Charter Communications make it an option for residential customers, with a one-time charge of \$30 to \$40. (Their commercial customers get the backup system automatically.)

Charter says that less than one percent of its residential customers choose the backup unit, leaving the remaining 99 percent or so with phone systems that go dead whenever the power fails. Cablevision won’t say how many of its customers opt for the backup. Both companies say the strategy helps them hold down prices. With most companies, customers generally are responsible for replacing the backup batteries, which last from two to around 10 years, depending on the type of system.

Sticking with copper



Good-bye to old reliable?

Even if you want a copper line at home, you might not be able to keep or get it.

Customers who want to return to old reliable copper likely will find Verizon, AT&T, and possibly other non-cable companies willing to accommodate their request where technically possible, at least for now. But they may have to pay a premium because the companies' lowest prices typically require a switch to fiber or hybrid fiber systems. Also, some specialized features, such as Caller ID on TV, don't work if the phone service is on copper and Internet and TV use some other type of system.

But it's likely just a matter of time before some telephone companies begin retiring the copper to eliminate the cost of maintaining both types of lines. Verizon says that unlike copper, fiber-optic lines are more resilient when it comes to damage from water and lightning and that they have reduced line-related repair dispatches by 75 percent.

But there have been news reports in recent years saying that Verizon is [neglecting its copper network](#) in favor of its fiber one, which might also be a factor in its greater vulnerability. Robert Master, political director for the Northeast area district of the Communications Workers of America, says Verizon technicians, who the union represents, are told to patch malfunctioning copper lines rather than replace them. He said the deterioration of the copper system contributed to communication losses during recent storms.

Verizon spokesman Bill Kula said that maintaining both fiber and copper lines "present challenges" but that "Verizon is maintaining a good balance, providing overall reliable service quality to customers whether they're served by our core (copper/fiber) or all-fiber infrastructure."

But there may be another reason why copper presents problems for phone companies. Federal law requires them to share their copper lines with competitors. There's no such requirement for fiber. In 2010, Verizon urged the FCC not to modify its rules allowing carriers to retire copper lines. Verizon already has done so in small areas of Texas and Florida and is studying whether it should do the same elsewhere. AT&T and CenturyLink say they have no immediate plans to retire copper, though both companies, like Verizon, no longer install copper networks in most new housing developments.

The Federal Communications Commission last spring opened an [inquiry](#) partly into whether the nation's new broadband communications network is as reliable as the proven copper technology. But the FCC focus is on keeping the network itself operating during hurricane, earthquakes and other calamities, not the telephones themselves.

One option that might help resolve issues is requiring telephone and cable companies to install a piece of copper within their fiber and hybrid-fiber systems, allowing them to transmit power to the phones themselves. Verizon told us, however, that doing so would be too expensive to implement and increase vulnerability.

How to stay in touch



Plug in, turn on, phone out

If you have a generator, be sure to connect your home phone system to the device.

There is a lot you can do to make sure you're able to contact 911, friends, loved ones, and others during a power outage. You'll find additional advice on the [FCC's blog](#). Among the steps to take:

Know your system. Find out which kind of landline phone service you have and how it functions during a power outage, if at all. If you're not on copper and your company doesn't provide a battery backup for free, try to negotiate one as a condition of retaining or accepting service. If you're unsuccessful and still want the service, opt for the back-up system.

Keep extra batteries on hand. They can extend the amount of time the backup system powers your phones. Buy them from your provider, a battery supplier, or try to get additional batteries from your provider for free. (We found batteries for Verizon FiOS ranging from about \$17 to \$46 each.) To charge the batteries, rotate them in and out of the modem or backup unit. Or buy a separate charger. In a pinch, you may also be able to power the phone system for a brief time using an uninterruptible power supply (UPS). Check with your carrier for more information.

Test the backup. Some carriers monitor their customers' backup systems and presumably will alert customers if it isn't working. That can happen, for example, if the battery fails. The system also may activate a light or beeping signal to indicate the backup isn't working. Test the backup system every month or so by plugging in a corded phone, unplugging the modem or network interface power

plug, and checking for a dial tone. If there isn't one, check the system or contact your provider.

Understand the backup system. Find out how the battery backup works and how long it will provide service before your phone line goes dead. Some systems may have unique capabilities. For instance, Verizon's battery backup unit turns off when there's about an hour of power remaining. To obtain the last hour, for instance when you need to make an emergency call, press a button on the unit. You'll have just one more hour of service.

Disconnect the battery backup. During an outage, if you don't need to use the phone immediately, disconnect the battery after the power goes out. That can prevent it from draining while the system is in standby, though you also won't be able to receive calls. When you need to make a call, plug it back in. Once power is restored, be sure to plug the battery back in so it can recharge.

Keep a corded phone. No matter what kind of landline service you have, keep a corded telephone ready to go. Most cordless phones will not work if the power is out, even if the phone line is active. [Corded phones are available](#) for about \$10. Make sure the phone you're buying doesn't need to be plugged into an electrical outlet.

Get a cell phone. Even copper phone lines can fail. A cell phone can help ensure you'll retain phone service. [Choose a service](#) that lets you pick up a signal from your home. Consider keeping extra cell phone batteries and try to have some way to recharge the phone when the power goes out, such as a car charger. Make sure your cell batteries are completely charged when you know a possible power-disrupting event is on the way.

Subscribe to copper phone service. Consider keeping (or returning to) copper service, if it's available. If you're bundling phone, TV, and Internet service, or plan to, find out if copper service will add to the cost and whether there's a service fee for returning to copper. Also ask whether having a copper line will eliminate any features that work with a bundled telecommunications package. If you're switching to fiber-based service with a telephone company and want the option of returning to copper later on, ask whether the company can keep your copper line in place (Sometimes companies remove the line to your home, making it difficult or impossible to restore copper service).

Consider a generator. If you have a [backup generator](#) that provides power to only some appliances, make sure one of them is your VoIP or fiber phone system. Run an extension cord from the generator to your modem or network interface. A whole-house generator is even better than a portable one but considerably more expensive.