What you need to know about storms and power outages
Introduction

At one time or another, we’ve all experienced power outages. Usually, they take us by surprise when we’re cooking dinner or watching television, when we’re giving the kids a bath or just listening to the stereo. But one thing’s for sure, outages are almost always inconvenient.

As soon as an outage happens, we wonder “Why?” and “When will the power come back on?” After a prolonged outage—following a storm, for example—we even tend to become impatient. “Why is it taking so long to restore power?” “Other sections of town have power—why not mine?”

These are common reactions and common questions. That’s why we’ve created this brochure: To provide the information you will need during an outage. We hope that it will give you a better understanding of exactly what goes on when the power goes out, and how we are working to prevent power outages.

Part 1 answers frequently asked questions about why you lose power and how we go about restoring it. Part 2 will tell you how to prepare for an outage, and how to cope more safely and comfortably during one.

Please keep this brochure in a handy place—maybe tucked into your phone book—in case you need to refer to it.
Why do I lose power?

Power outages happen for a number of reasons.

**Weather** — Wind, heavy snow and thick ice on trees or tree limbs can bring trees into contact with our wires and cause an outage. Lightning can also strike our equipment or trees near it.

**Nature** — In addition to trees and limbs, animals occasionally contact parts of our system in a way that causes outages. Large birds, squirrels and raccoons cause roughly 3,500 outages each year.

**Motor vehicle accidents** — When a motor vehicle hits a pole and damages or breaks it, power outages sometimes result. Some 710 such outages occur on our system each year.

**Cranes and excavation machinery** sometimes cause outages.

**Equipment failures** in any part of our system: overhead, underground, substations, transmission lines, etc.

**Vandalism**—Our equipment is sometimes damaged by gunshot or objects thrown into it.

**Routine, planned maintenance** — On occasion—and with notice to our customers—we intentionally de-energize an area to perform necessary maintenance where safety to the worker prohibits working on “live” lines.

**What is NU doing to minimize outages?**

We can’t control the weather, but we do try to work with it. In fact, the moment we receive notification of a major storm, we put our detailed “System Emergency Plan” into action. During this period, our staff responds like other emergency personnel such as fire and police officials. Helping to restore power caused by a storm is our employees’ number one priority, whether it takes time from their regular job or home.
We monitor weather services for as much advance warning as possible. For example, a major storm may be hundreds of miles away, but we will already be estimating its strength, plotting its path and determining its time of arrival in our area. We do this with help from several weather monitoring firms under contract with us.

Emergency crew preparations are made. At the threat of a major storm, extra crews are ready, trucks are fueled and stocked with supplies and materials. By the time the storm hits, we are ready to roll.

Annual training and periodic briefings are given to thousands of our employees who are apt to be reassigned to restoration work in major outages.

We work closely with state and local officials before, during and after major outages to keep them abreast of our plans and progress.

We work with the media to advise people of important messages. We may advertise on radio and in newspapers to provide tips on how to prepare for and cope safely with outages. This brochure is a good example of our commitment to keeping our customers informed.

Tree trimming. Chances are, you have seen a tree-trimming crew at work in your area. This crew is part of our multimillion-dollar effort to keep our lines clear of branches.

You may not realize it, but trees are the single largest cause of outages – and not always in conjunction with bad weather! Sometimes, all it takes is a branch brushing back and forth against a wire to cause an outage. Trees can cause more than 12,000 outages each year.

That is why it is so important that power lines be kept clear of interfering branches. And why it is important that our tree crews be allowed to perform this necessary service.

In addition to tree trimming, we also routinely inspect all our equipment, poles and lines both visually and with infrared heat-sensing equipment to spot trouble or weak areas. We use a variety of methods such as foot patrols with hand-held devices and specially equipped vans and helicopters. While our service is already 99.97% reliable, we are always working hard to further improve our reliability.

Equipment improvements. Every year we dedicate a significant portion of our multi-million dollar investment to replace and upgrade our overhead and underground distribution facilities. In fact, NU employs some 415 crews to work on these facilities in our service area – that is roughly one crew per town in Connecticut, western Massachusetts and New Hampshire. We have upgraded lightning arresters on our system to reduce outages in severe lightning storms. We have installed special equipment called reclosers to automatically reroute power, restoring power to as many customers as possible while isolating the trouble spots.

All of these improvements combine to protect you from outages.

After a major storm, why do some people get their power restored in a few hours while others have to wait a few days?

It’s nothing personal.

After a major storm, we tackle outages in order of severity. First, we make every effort to make dangerous areas as safe as possible—for example, by de-energizing downed wires. We concentrate on damage assessment via patrols and input from civil authorities and customers. We work with town officials to identify their areas’ priorities for service restoration. Typically fire and police stations, hospitals shelters, and water and sewer treatment plants are first on the list.

But back to you.

Before we can restore service to your street, we must first repair damaged substations, main electric lines and wires that feed power to streets such as yours.
Think of our system as a tree.

Effort begins at the substations (or tree roots) and moves to the main feeders (tree trunk) and continues to primary and secondary wires (limbs and branches). It is from these branches that electricity flows to individual homes via service wires. It does no good to repair the limbs of a tree if the trunk is dead, right? Therefore, the trunk must be repaired before any work can be done on remaining elements.

Ultimately, our crews go street-by-street—in some cases, house-by-house—to restore individual service. We keep working until every home and business has electricity again.

Depending on where you are within our electric distribution system (for example, if you are at the far end from the substation), it may happen that you are among the last to have power restored after a major storm. It will probably take longer to restore power to the more remote, less-populated areas as we try to restore power to the biggest concentration of customers first.

Extra help

If the storm’s damage is heavy, we may need the help of utility crews from other companies. Through a utility industry network, we get as much help as we need to bring in crews to help get the power back. In the case of severe weather, though, other affected utilities are also looking for assistance. So we may have to look for help far away, which increases the time it takes for crews to reach our service area. Sometimes it takes days before we can get these extra crews into the area, brief them and get them on the job to help restore power.

Please be patient.

After a major storm, restoration speed depends on the extent and nature of the storm’s damage. There could be thousands of trouble locations that require manual repairs. If we need to replace poles and other equipment, for example, that’s more time-consuming than fixing wires. Repair work can also be slowed by bad weather and impassable roads.

Regardless of our very best preparations and restoration efforts, when a major ice storm or hurricane strikes, some customers might be without electric service for more than a week. That’s the unfortunate reality. If you should lose power for an extended period of time, Part 2 of this booklet can show you how to cope more safely and comfortably.

Sometimes my neighbors have power in their home and I don’t. How can that be?

You may be on a different circuit from your neighbor or switching within our system may allow your neighbor to get power from a different direction on the same circuit—bypassing the problem that may still be affecting your service. There might also be a problem with the transformer supplying power to your home. Finally, you might have a service problem that your neighbor does not have. Check your main breaker, service wire and meter. If, after an outage, your neighbors get power back and you don’t, please call us.

Why is my electric service sometimes out but my phone service isn’t?

Phone lines are usually placed lower on utility poles and are, in effect, protected by our higher, stronger lines. Phone lines, which run at very low voltages, continue to operate even if tree limbs come in contact with them and, in some cases, even when they are lying on the ground.

Do your people work around the clock to restore power?

After a major storm, people are working at NU 24 hours a day until power is fully restored. Our telephones lines are staffed around the clock; our emergency operations center is abuzz with restoration assessment; nights are spent planning assignments for the next day’s incoming crews; and our communications staff is always available to work with public officials and answer media questions. These are just a few areas where we work night and day until power is fully restored.
Our line crews generally work 16 hours, with 8 hours off. Usually a crew will begin working around dawn and continue until early or mid-evening. They sometimes work through the night to complete critical restoration work at major facilities—a substation, for example. When other utilities’ crews drive through the night to reach our area, they might rest upon arrival and then begin a shift in the evening.

Generally, however, crews do not work through the night because of the increased hazards and reduced productivity when working in the dark. Common sense dictates the schedules of our crews. Restoring power is vital, but so is the safety of our employees.

Why can’t you better predict service restoration times?

Our service area is 11,345 square miles—in other words, really big. All told we serve 409 towns in Connecticut, western Massachusetts and New Hampshire.

After a major storm, our 31,704-mile distribution system has to be patrolled to assess all damage so service restoration projections can be prepared. In many cases, the storm damage may be so severe that the roadways are blocked, cutting off our access to all areas. Without access, we cannot make an accurate restoration estimate. When we do have access, equipment damage may not be immediately apparent until we try to restore power. Problems like these can delay restoration beyond our best possible estimates.

Rest assured, we continuously strive to update our information on specific damage to determine the restoration work required. We try to give prompt and accurate answers about restoration times, but it may be impossible in the first 24-48 hours after major storm damage.

Also, our estimates are subject to a number of variables that arise during the repair process. For example, if the arrival of out-of-state crews is delayed by road or weather conditions, our restoration projections are disrupted. There are natural factors, too. During a cold-weather storm, branches may ice up and droop down into our lines. Then, with sunshine, the ice might melt and cause branches to spring back up into our lines. At sundown, the branches might ice up again, repeating the process. Conditions like these make it very difficult for us to be exact about restoration times.

Is there any way I can help?

Yes—in the event of an outage, the first thing you should do is call the Customer Service Center. The contact numbers are:


Western Massachusetts Electric: 800-286-2000; 413-781-4300 in the Springfield calling area.

Public Service of New Hampshire: 800-662-7764

We depend on customer phone calls to identify problem areas. When an outage call comes into our office, we record the customer’s name, address and telephone number, along with other information, into a computer. Other calls from the same area will be stored and sorted for analysis by the computer. The analysis helps us determine the likely location of the problem and the extent of the outage. We can then deploy repair crews quickly to the areas that need them. In the event of a storm, our daily norm of 10,000 calls might jump to 50,000 calls per day. If you are trying to call us, please be patient and keep trying.

You say you’re working in my area but I don’t see any trucks or crews. Why?

Immediately after a major storm, we need to patrol, map and assess damage. Our vehicles and personnel fan out to cover thousands of miles of road. Many of these vehicles bear company identification as well as special “Storm Patrol” signs for this purpose, but some do not. While you may not see crews or trucks in your area right away, be assured—we are on the job assessing and prioritizing the work we need to do.
Why do we sometimes see many trucks and crews at one location when we’re waiting without power?

What you may be seeing is a group briefing. We conduct regular briefings for our crews and those loaned to us by other utilities. Often, crews from out-of-state utilities are unfamiliar with our territory and remain together, as a group, to receive safety briefings and work assignments.

The other possibility is that several of our trucks and crews may be in one spot for lodging and meals. Remember, we might be arranging accommodations for thousands of workers—and up to 20,000 meals per day.

Part 2  How to Cope With An Outage

Medical Priorities

Does a member of your household rely on electric equipment for a life-threatening medical condition? If so, you should prepare a back-up plan, in case of a prolonged outage, to provide the patient with alternative facility care.

Be ready for an outage before it happens.

Proper preparation can dramatically lessen the inconvenience of a major outage.

The first thing we suggest you do is to develop your own “Lights Out” kit and have it handy in case the power goes out. Your kit should include the following items:

- Flashlight (one for every family member) and fresh batteries. If you use candles or kerosene lamps, be extra careful with open flames in drafts, near curtains, or near any flammable materials. Also, keep them out of children’s reach and extinguish them before going to sleep or leaving the room.
- Battery-operated radio and clock.
- Extra batteries.
- Containers for water or bottled water.
- Canned, freeze-dried or dehydrated food, powdered milk, baby supplies for infants.
- Non-electric can opener.
- Sterno or similar fuel (never burn charcoal indoors).
- List of important phone numbers.
- First-aid kit.
- Cash supply (automatic teller machines may not work).

It’s also wise to keep your car’s gas tank full, and to know how to manually operate an electric garage door if you have one.

If a major storm is on the way, follow these steps to protect your home’s appliances:

1. If possible, prior to a major storm, unplug all sensitive electronic equipment such as:
   - TV  Computer
   - Stereo  Cordless telephone base
   - VCR  Garage door opener
   - Microwave  Answering machine

2. If possible, just as a major storm arrives, turn off the following appliances (we recommend unplugging if there isn’t an “OFF” position):
   - Dryer  Furnace
   - Refrigerator  Water Pump
   - Freezer  Air Conditioner
   - Washer  Ceiling Fan

And remember, to prevent a fire when power is restored, make sure electric stove burners are in the “OFF” position.

Call us.

When you call us, please provide this information:

- Name and address
- Name of the cross street nearest you
- Your telephone number
Never attempt to touch or move downed lines. Do not risk electrocution by touching anything they’re contacting—such as tree branches or fences. Keep children and pets away from downed lines. Our repair crews will be working hard to clear downed wires caused by the storm.

Also stay away from any damaged poles or utility structures. If a transformer from one of our poles has fallen or been damaged and is leaking oil, please stay away from it and notify us right away.

Travel on roadways

If possible, stay off the road during or shortly after a storm, especially at night. If you have to drive, watch out for trees and wires in the roadway. Do not drive across a downed power line.

Treat all non-working traffic lights as stop signs. Proceed cautiously at intersections. Streetlights may be out, too.

If a power line should fall on your car or other vehicle while you are in it, stay inside and do not touch anything outside the vehicle. Use the car horn to attract attention or use a cell phone to call for help. Wait until police or power company workers tell you it is safe to leave the vehicle. If you must exit the vehicle because of a life-or-death situation, jump out or off so you are completely clear of the vehicle before you touch the ground. Land with both feet together and hop or shuffle away. Remember, if you are holding onto the car door while touching the ground, you may be electrocuted.

Damage

Shut off your home’s main switch or put the main circuit breaker in the OFF position if you are without power and:

- A tree has fallen on the service wire leading from the pole to your house.
- Service wire is down or pulled away from the house.
If your lights are dim or unusually bright, it signals voltage trouble, which could damage sensitive electronic equipment or motor-driven appliances. You should shut off your home’s main switch or put the main circuit breaker in the OFF position.

If you’re without electric service for days after a big storm, you’ll need to take special precautions with food and water. An important reminder: Never use charcoal for indoor cooking. It releases deadly carbon monoxide.

**Before a storm …**

**Food:** Set your refrigerator and freezer to their coldest settings (remember to reset them to normal operating temperatures after the crisis has passed). Throw a blanket over both for extra insulation to help keep the cold in.

It’s also a good idea to place plastic containers filled with water in your freezer. Ice helps maintain the cold during an outage, and you can drink the melted ice. Also, block ice can be used in the refrigerator.

**If you have medication** that requires refrigeration, check with your pharmacist for guidance on proper storage during an extended outage. You may want to keep a small cooler handy.

**Drinking water:** If your water supply could be affected by a power outage—a well-water pump system, for example—be sure to fill your bathtub and space containers with water. Water in a bathtub should be used only for sanitation purposes, not as drinking water. For water stored in containers, it’s best to boil it before drinking. A toilet may be flushed by pouring a pail of water from the tub directly into the bowl. Keep children away from a full bathtub for safety reasons.

Also, check with town or city officials on other sources of drinking water—possibly fire or police stations. You may even be able to get some water from friends or neighbors who have it.

**During an outage …**

Don’t open the refrigerator or freezer door. If the unit’s door is unopened, food stays in a full refrigerator for up to 24 hours and in a freezer up to 48 hours if it’s well packed; 24 hours if it’s half packed.

You might load up a cooler with ice and store food you’ll need to access during the first day or so after an outage.

If outages occur during cold winter months, you can store food in an unheated garage or in a sealed box in a snowbank.

**After power is restored …**

It’s okay to refreeze some things like bread and baked goods; do not refreeze melted ice cream or yogurt, seafood, food that has thawed completely and been held above 40 degrees for two hours or longer, anything with custard fillings, or any foods with a questionable texture or odor. A general rule on food spoilage is, “If in doubt, throw it out.”

If you have any questions about the safety of defrosted foods, you can call the U.S. Department of Agriculture’s toll-free “Meat and Poultry” Hotline: at 1-800-535-4555, weekdays, 10 AM – 4 PM.

**Heat**

During winter months, an alternative source of heat is important; homes heated with oil or gas burners still require electricity to operate. If you have a fireplace and a supply of wood, you may want to heat with it (if you use your fireplace infrequently, check to be sure the flue and chimney are unclogged and clean). Close off unused rooms to conserve heat. Open curtains and shades to let sunlight in; close them at night.

Never use a gas range to heat a chilly room because prolonged use of the oven or top burners to heat a room can deplete the oxygen, creating unsafe and unhealthy conditions for you and your family. Never use charcoal to heat a room, either. It releases deadly carbon monoxide.
Hypothermia

Hypothermia, or dangerously low body temperature, can result from prolonged exposure to cold. The elderly, the ill and small children are particularly susceptible. Symptoms can include difficulty speaking, violent shivering, confusion, cold or stiff muscles, and a stomach that's cold to the touch.

To prevent hypothermia:

- Dress warmly, particularly at night. A hat will help keep you warm. Wear several layers of loose clothing instead of one heavy layer.
- Try to keep room temperature at 68 degrees but never use a gas stove to heat your home unless it's specifically designed for home heating purposes.
- Eat nutritious meals.

If you have a special problem, call your local INFDLINE, the American Red Cross, or your local town or civil defense officials for information about shelters. If you’re ill or frail, consider staying with relatives or a town shelter if the outage will be lengthy.

Portable generators, yes or no?

Some customers are particularly sensitive or inconvenienced by power outages. If you feel that you cannot tolerate an extended power outage, we recommend that you purchase a portable generator.

We can’t emphasize safety enough.

There are important, life-saving issues involved in selecting, purchasing, installing and maintaining a portable generator. Also, you may need a town permit or an official inspection.

Select a generator correctly sized to meet your needs. Ask your dealer for guidelines.

Have a qualified, licensed electrician install your generator.

The generator must be connected to your home’s wiring through a special transfer switch to ensure that the house wires are isolated from the utility wires—so that our lines cannot be energized by your generator. If a portable generator is improperly connected to your house’s electrical system, the electricity it generates not only enters the home’s wiring but could backfeed into the NU electrical system, creating a life-threatening hazard for repair crews or others nearby.

Please be aware that improper portable generator installation and use could kill an unsuspecting line worker. It could also cause a house fire. Do not use a generator until you can use it safely.

Generator exhaust is deadly. The unit must be properly ventilated. We recommend that the unit not be located indoors.

Never refuel the generator while it is operating.

Pets

While dogs and cats generally have no problem during power outages, smaller pets such as fish, birds and reptiles may be endangered. Tropical fish, for example, require electric air pumps, filters, and—during the winter—thermostatic heaters in order to survive.

Since many of these animals are fragile, we recommend that you do not wait until an outage strikes to devise alternate arrangements. Check with a reputable pet store to determine what steps you can take before and during an outage to ensure your pet’s survival.

Surge suppressors

You may want to use surge suppressors to protect your sensitive electrical equipment from voltage irregularities. Voltage irregularities can occur when power is restored if, for example, the power line between your house and the pole is damaged, or there’s damage to your service entrance cable (the wire running down the side of your house to the electric meter).
Be sure to have all electrical equipment – including washing machines, dryers and spare refrigerators – checked by an electrician before restarting.

Electrically-operated garage doors

Doors of this type may be opened by disengaging the drive mechanism. Methods used to do this vary from manufacturer to manufacturer. Please consult your operating instructions supplied by the manufacturer. They will tell you how to disengage the drive mechanism so that you can open the door manually. If you do not have a manufacturer’s instruction book, call the company that installed the doors.

Chain saws

If you’re cleaning up downed tree limbs and using a chain saw, follow safety instructions. Use eye goggles, gloves, wear heavy boots and a long-sleeved shirt and long pants. Again, be sure there are no power lines in the vicinity. Do not trim or cut branches that are in contact with power lines.

Property damage

 Liability for loss or damage. Check with your insurance agent or homeowner’s or renter’s insurance policy for coverage information. Because we cannot guarantee continuous service, we are not liable for any loss or damage from an interruption of electrical service. NU does not reimburse customers for any items spoiled, damaged or lost resulting from major storm-caused outages.

Damage to the service wire and meter. Wires leading from a distribution pole to the first contact point on your house are our responsibility, as is the meter itself.

The wire running down the side of your house belongs to you. Homeowners are responsible for the service entrance cable that runs to the electric meter and from the meter to the service panel in the home. If these are damaged, call an electrician.
as soon as possible and ask that your repair work be coordinated with CL&P, WMECO or PSNH. Electric service cannot be restored until this is repaired.

**Fallen limbs.** NU will not remove fallen trees, limbs or branches during or following tree work performed for emergency restoration. Chipping and/or disposal of these are the responsibility of the homeowner.

**Storm Checklist**
While this booklet covers many aspects of outages, the most important steps you can take to prepare for and cope with major storms and power outages are as follows:

**At the threat of a major storm:**
- Check your “Lights Out” kit to be sure it's well stocked and ready.
- Turn your refrigerator and freezer to their coldest settings.
- If you have a well and water pump, fill your bathtub and spare containers with water.
- Take steps to protect your major or electronically sensitive appliances.
- Fill your car’s gas tank.

**If you lose power:**
- Call CL&P, WMECO or PSNH immediately to report the outage.
- Takes steps to prevent food spoilage.
- Stay indoors. If you must venture outside, stay away from downed and dangling lines. Treat all downed lines as if they are live and dangerous.
- If you use a portable generator, follow important, life-saving instructions.
- Keep a battery-operated radio on for safety tips and updates on our restoration progress.

We hope you found this storm and outage information helpful.

**OUR ELECTRIC SYSTEM**

Electric utilities are in the business of transmitting and distributing electricity to customers. Transmission and distribution systems carry electricity from power plants to customers. Our transmission system moves high-voltage electricity; the distribution system delivers electric energy to customers’ homes and places of business.

Our electric system has tens of thousands of miles of line overhead and underground. There are 32,802 miles of overhead distribution line. Underground, the system has more than 150 miles of transmission cable and 6,230 miles of distribution cable. There are more than 360 substations and 404,356 transformers in the NU system.
CL&P
The Connecticut Light and Power Company
800.286.2000; 860.947.2000 in the Hartford
and Meriden calling areas.
cl-p.com

WMECO
Western Massachusetts Electric Company
800.286.2000; 413.781.4300 in the Springfield calling area.
wmeco.com

PSNH
Public Service of New Hampshire
800.662.7764
psnh.com