

Oh, so that's how you light a light bulb!

Turning on a light is as easy as the flip of a switch. But did you ever wonder where that electric power came from? Before it arrives at the light bulb, the electricity makes an almost magical journey across miles and miles of wire.

It all begins within a generator at a power plant operated by the Tennessee Valley Authority. The power plant produces steam by heating water via burning coal or natural gas or by the heat released in a nuclear reactor. The steam turns a huge turbine to produce electrical energy. (The turbine also can be turned by other forces, including flowing water or wind.)

The electricity (invisible particles called electrons) coming out of the generator is then “stepped up” in voltage (electrical pressure) in a transformer so that it can travel a long distance — sometimes hundreds of miles — without losing much of the energy.

This high-voltage electricity then travels across transmission lines (typically strung between tall metal towers) into a “power pool” where it mixes with electrons produced at other power plants feeding into the system, also called a “grid.”

Flipping a light switch is sort of like taking a bucket of water out of a lake. The bucket contains water that could have entered the lake from any combination of sources — streams, springs, rain, etc. In theory, the electricity you use could be generated at any plant connected to the

grid. It all goes into the same pool, so it's practically impossible to tell where the electrons flowing to your light bulb actually come from.

Regardless of where it's generated, electricity flowing along high-voltage transmission lines can't be safely used until the voltage is reduced. This generally occurs at a transmission substation where the power is “stepped down.” That lowered power is then fed into Holston Electric Cooperative's substations and stepped down again to a voltage suitable for our distribution lines. Before the elec-

tricity reaches your home or business, the voltage is reduced yet again by the transformer you see on the pole outside your home or business (or in the box on the ground for areas with underground service).

When it passes through your meter at 110 and 220 volts and on into your home, the electrical energy that began its journey just a fraction of a second earlier is now ready to do the work you need it to do — heat the filament in your light bulb until it shines brightly. It's an amazing process that occurs in the blink of an eye.

That's far more detail about the electric industry than most folks care to know. But sometimes I feel the need to review the fascinating process of generating, transmitting and distributing electricity with the cooperative members. If you take it all for granted, as most of us do, that's okay. It just means that Holston EC is doing its job — providing you with a reliable supply of energy.



Larry Elkins
General Manager
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Serving more than 28,000 customers in Hawkins and Hamblen counties.



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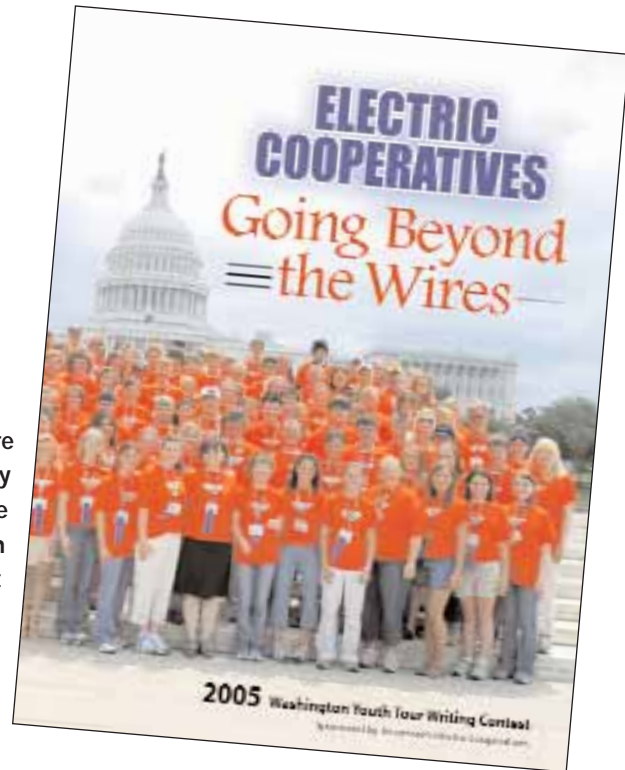
William F. Young

To report an outage or electrical emergency, call 272-8821 or 235-6811 day or night.

Writing contest winners can earn free trips to Washington, D.C., cash prizes and scholarships!

Youth Tour 2005

Information to inspire ideas for the short story contest is found in the 2005 Washington Youth Tour Writing Contest information booklet.



Criteria used for judging the stories:

Originality (35%)

A different, entertaining, effective way of presenting information that will educate the reader and get the writer's points across

Appropriate treatment of theme (25%)

Weaving the information relating to theme effectively throughout the short story

Grammar and composition (15%)

If you need an explanation here, check your English textbook.

Knowledge of subject (25%)

Indications of additional research, a grasp of what information is vital to making your story believable and credible, and creative ways of presenting that information.

The annual Washington Youth Tour Writing Contest is under way in Cherokee, Morristown-Hamblen East and Volunteer high schools. Holston Electric Cooperative sponsors the writing contest in schools that have students living within the Holston EC service area. The contest, which gives high school juniors an opportunity to win an expense-paid trip to Washington, D.C., cash prizes and scholarships, is one of the cooperative's most respected and productive youth activities.

How does it work?

Students in Junior English classes are asked to write a short story of no more than 900 words titled "Electric Cooperatives: Going Beyond

the Wires." Submissions must be type-written and double-spaced and turned in to the English teachers. The stories from first and second semester classes are judged by an independent professional, and in April three winners from each school and one overall or grand prize winner are announced.

Encourage your son or daughter, grandchild, niece or nephew, or neighbor to make the most of their opportunity if they are a Junior English student this semester. The Washington Youth Tour has been described as "the trip of a lifetime" by past participants, but the only way to be a part of the tour is by writing a winning short story.

Why pay more for an electric bill when you don't have to?

Save money with
 Holston Electric Cooperative
 and *energy right*[®]

We all have a monthly electric bill, but you shouldn't pay more than you have to. That's why Holston Electric Cooperative and the Tennessee Valley Authority offer *energy right* — a complete program that makes your home more energy efficient and your bills more affordable all year long.



- **New homes:** Build your new home to be energy efficient and save! Your home plans can be evaluated for ways to reduce energy use.
- **Electric heat pumps:** Get an electric heat pump and save money on your electric bills. We can arrange affordable, 10-year financing.
- **Electric water heaters:** Install a new electric water heater in your home (at least 30-gallon capacity) and receive a \$25 credit to your account.
- **Home e-Valuation:** Complete a home energy survey and receive a customized report on how to save money on your utilities all year long.

Contact Holston Electric Cooperative today,
 or visit www.energyright.com.

(423) 272-8821 • (423) 235-6811



Storm electrical safety

Tennessee has had more than its share of severe thunderstorms, snow and ice in recent years. Any of these natural phenomena can cause prolonged power outages. Here are some tips from Holston Electric Cooperative to help you before, during and after such storms.

BEFORE

- Make sure flashlights, battery-powered lanterns and other sources of light are readily available.
- Make sure flashlight and radio batteries are fresh.
- Make sure you have an adequate supply of medicine, first aid supplies and baby items, if needed.
- Keep a supply of bottled water, nonperishable food items, batteries and firewood on hand.
- If you have an emergency heating source, learn how to use it properly to prevent fire. Ensure proper ventilation.

DURING

- Tune your battery-powered radio to the local radio station. Holston Electric Cooperative will communicate updates about repair efforts.
- Don't leave candles unattended, and keep them away from furniture, blankets and curtains. Also, remember to keep little hands away from open flames.
- Don't open freezers and refrigerators any more than necessary.
- Turn off heating and air conditioning systems as well as your electric range. Unplug sensitive electronic appliances such as TVs, VCRs, microwave ovens and computers. This will help

protect your appliances against power fluctuations that can occur when power is restored.

- If you plan to use a portable generator, CALL Holston Electric Cooperative. We can't stress enough how important proper connection and use is to the safety of HEC lineworkers and those in your home.

AFTER

- If power lines and poles are down in your yard or street, always treat them as if they are energized and dangerous. Never touch them! Go directly to a phone and contact Holston Electric Cooperative so that repairs can be made as soon as possible.
- Post-storm debris can hide power lines that have fallen. Fallen trees that contain energized power lines can energize any item with which it comes into contact, such as a metal fence. Even the ground can be energized. The real danger of fallen power lines is often hidden.
- If your electric service is out, check with neighbors to see if they have power. If they do, you may have a blown fuse or tripped breaker. Never replace a fuse or reset a circuit breaker with wet hands or while standing on a damp surface.

Helping line crews is appreciated, but working with power lines and electricity requires a high degree of training. In order to restore power with the highest degree of safety, restoration must be accomplished in a certain order and procedure. Above all, the hard working men and women restoring your power appreciate your patience and understanding that they are doing everything they can to restore your power as quickly and safely as possible.

Keep your house safe

We'd like to pass along to you some ideas from the National Electrical Safety Foundation to help ensure electrical safety in your home or business.

Light bulbs — Check the wattage of all bulbs in light fixtures to make sure they are the correct wattage for the size of the fixture. Replace bulbs that have higher wattage than recommended. If you don't know the correct wattage, check with the manufacturer of the fixture. Make sure bulbs are screwed in securely; loose bulbs may overheat.

Circuit breakers/fuses — Circuit breakers and fuses should be the correct size current rating for their circuit. If you do not know the correct size, have an elec-

trician identify and label the size to be used. Always replace a fuse with the same size fuse.

Water and electricity don't mix. — Don't leave plugged-in appliances where they might fall in contact with water. If a plugged-in appliance falls into water, NEVER reach in to pull it out — even if it's turned off. First turn off the power source at the panel board, and then unplug the appliance. If you have an appliance that has gotten wet, don't use it until it has been checked by a qualified repair person.

Appliances — If an appliance repeatedly blows a fuse, trips a circuit breaker or if it has given you a shock, unplug it and have it repaired or replaced.



To keep your home comfortable, plug the leaks!

Even if you have the most efficient heating and cooling system made, if your home is not well insulated and caulked you still will have drafts, cold spots and higher energy bills.

According to home energy guru Doug Rye, the three biggest problems with the comfort of your home are: 1) air infiltration, 2) air infiltration and, you guessed it, 3) air infiltration.

Rye says that the total air infiltration in an average house is about equal to having a door or window open every day. If you are building a new home, the key to energy-efficiency is to seal air leaks in the building framing, then insulate.

Where are these leaks? Think of it this way: anywhere an ant can come in, air can get in. Here are some of the major problem areas:

- Where your wall touches your slab
- Cracks between the wood framing in your home's walls
- Around electrical receptacles and light switches in your house, even on interior walls (When the north wind blows, go feel the electrical outlets and switches on your north wall.)
- Holes and leaks around your sink plumbing. Some of them are large enough for a mouse to get through!
- Gas and fireplace flues
- Recessed can lights that are not IC-rated. Between 3 and 10 cubic feet per minute of air will pass through one of those lights.
- Leakage in the return air system of your heating/cooling unit. In the average home, gigantic amounts of air enter through this system.
- Don't overlook the scuttle hole or pull-down stairs. In older homes with high ceilings, there are often large holes above closets where the ceiling height was lowered.



A Tyvek house wrap is one way of helping stop the air infiltration in your new home. Caulking, insulation and efficient windows are also important in reducing air leaks.

To remedy the cold air leaks in most situations, it is usually a matter of labor and a little bit of material. In Doug Rye's words, "Caulk it. Caulk it. Caulk it."

For big holes like those under the sink, use an expandable foam. For the smaller cracks, use a clear siliconized caulk. For electrical outlets and light switches, install the insulated foam gaskets and child-

proof plug inserts.

If you are building a new home, make the building shell energy efficient by caulking or using other sealants to seal all the holes and cracks before the insulation is installed. Pay particular attention to the seam between the floor and outside walls, around window and door openings and the holes in the framing and drywall that connect into the attic.

Make sure after the air sealing is complete that the insulation is installed with no voids, gaps or compressed areas. These common flaws can cut performance significantly.

A house wrap is another way to help stop air infiltration in a new home. It is a special type of plastic that allows water vapor inside the walls to escape but helps prevent liquid water from getting the wall wet. House wraps also help seal the wall against air leaks, which reduces energy costs. To be most effective, the house wrap should be tightly sealed at the top and bottom of the wall and around all openings for windows, doors and penetrations for plumbing and wiring.

And finally, whether you are building a new home or remodeling, the type of windows you choose also can affect your comfort level and your wallet. Energy-efficient windows reduce condensation, screen out ultraviolet radiation, which protects furnishings from fading, and can cut energy bills by hundreds of dollars.