

Innovating To Serve



MESSAGE FROM GENERAL MANAGER LEROY T. SKLOSS

Electric cooperatives have come a long way. In the mid-1930s, nine out of 10 rural homes were without electric service—a service that now, the majority of us greatly depends on to live our day-to-day lives. Electricity is no longer a luxury; it is a necessity. Today, to meet members' electrical needs, electric co-ops are providing reliable power using the most advanced technologies available.

In honor of National Co-op Month, Karnes Electric Cooperative is taking a moment to reflect on a few of the technological advances we have made to meet the needs of member-owners, the most important part of our business.

Equipped for reliability

When electric co-ops first formed, today's state-of-the-art equipment simply wasn't an option. Groups of men gathered their strength to raise utility poles, and spools of thick electri-



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cal wire were unraveled and strung individually. Once the poles were set in place, these ambitious men climbed the poles to hang the wire.

Now digger or derrick trucks are used to dig holes and place utility poles and electric lines. Bucket trucks have replaced the majority of the climbing. These advancements

not only improve the safety of our lineworkers, but they also make the process faster and less strenuous.

Much like setting poles and stringing electrical wire, clearing rights-of-way is no longer done by hand. Thanks to technological advances, power saws and tools have made clearing much easier. Clearer rights-of-way mean more reliable electric service.

Accountable metering

Even though homes come in different styles, they all have one thing in common: an electric meter. These small devices constantly keep a tally of electricity use. Although the older styles of meters—ones that track kilowatts with small, spinning discs—are extremely efficient, many electric cooperatives have integrated a much more advanced design into their systems: automated meter reading.

Automated meters have the capability to report energy-use updates every hour. With AMR in place, a co-op has the ability to create an advanced metering infrastructure. AMI can be established when automated equipment (found at Karnes EC's substations and on distribution lines) is teamed with AMR. AMI allows a variety of advanced applications to become possible, including outage management, "blink" monitoring and remote disconnection and reconnection. AMR and AMI both play major roles in keeping reliable power flowing to your home and the electric grid running efficiently.

Securing the network

The Internet is one of the greatest technological advances known to humanity. But the online world can be a dangerous place if proper security measures are not taken. With help from the Cooperative Research Network—the research branch of the Arlington, Virginia-based National Rural Electric Cooperative Association—electric cooperatives can arm themselves with technological innovations in security to maintain safe and secure systems for their member-owners.

A new project by the CRN and several partners is underway to ensure that co-ops are delivering power and service in the safest and securest way possible. Through this ambitious effort, researchers are developing the next generation of automated cybersecurity for the industry.

These are just a few of the technological advances that electric cooperatives have made, and we remain focused on finding ways to improve our service to you. Technology is ever-changing—but here at Karnes EC, we'll continue to stay ahead of the game, ensuring safe, reliable and affordable electric power for you, our member-consumers.

Q&A: Arc-Fault Circuit Interrupters

Now more than ever, our homes are being transformed by the introduction of new electronic devices. Unfortunately, the electrical systems of many existing homes are being overwhelmed by these modern electrical demands, putting them at greater risk of arc faults and arc-induced fires.

What is an arc fault? An arc fault is a dangerous electrical problem caused by damaged, overheated or stressed electrical wiring or devices. Arc faults can occur when older wires become frayed or cracked, when a nail or screw damages a wire behind a wall or when outlets or circuits are overburdened.

Is this a common problem? More than 56 percent of the nearly 51,000 home electrical fires that occur in the U.S. each year involve home electrical equipment arcing. These fires result in more than 1,000 deaths and injuries and more than \$700 million in property damage.

What are arc-fault circuit interrupters, or AFCIs? Arc-fault circuit interrupters, or AFCIs, are devices that provide a higher level of protection by detecting hazardous arcing conditions and shutting down the electricity before a fire can start.

What's the difference between an AFCI and a GFCI? The ground-fault circuit interrupter is designed to protect people from severe or fatal electric shocks, often in areas where water could encounter electricity, while the AFCI protects against fires caused by arcing faults.

Are AFCIs effective? The U.S. Consumer Product Safety Commission estimates that AFCIs could prevent more than half of the electrical fires that occur every year. Beginning with the 2008 edition, the National Electrical Code has expanded the

Properly installed AFCIs can protect your home from potential electrical fires.

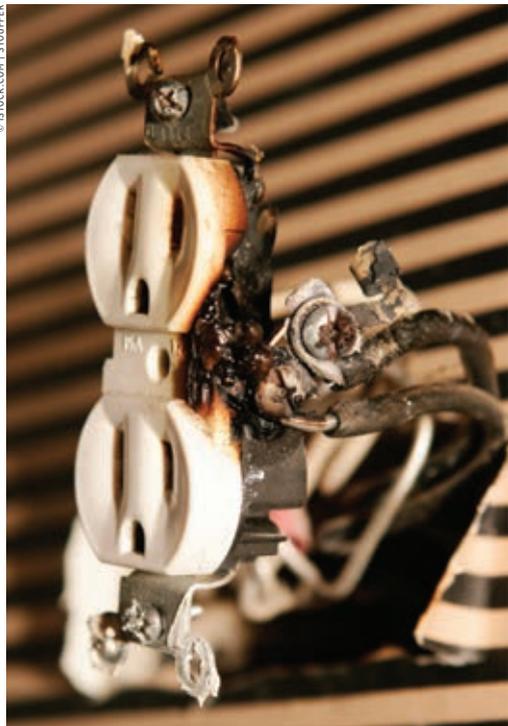
requirements for AFCI installation beyond bedroom circuits to additional areas of the home, including dining rooms and family rooms.

How much do AFCIs cost? These devices can be purchased at any local electrical distributor, hardware store or home improvement center for approximately \$35 each. Depending on the size of a home, the cost for installing additional AFCI protection is \$140 to \$350.

Can I install AFCIs myself? AFCIs should only be installed or replaced by a licensed, qualified electrician.

How do I know if I have AFCIs installed in my home? Open your home electrical service panel and look at your circuit breakers. Do the breakers have a test button on them? Both AFCI and GFCI breakers have test buttons, but standard breakers do not.

How often should AFCIs be tested? AFCIs should be tested after installation and once each month to make sure they are working properly. Follow the device manufacturer's testing instructions. If the device does not trip when tested, it should be replaced.



Karnes Electric Cooperative

P.O. Box 7, Karnes City, TX 78118

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Leroy T. Skloss

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COOPERATIVE OFFICES

Main Office

1007 N. Highway 123, Karnes City

District Office

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When To Turn Off Your Lights

With so many new lighting options these days, and more coming along all the time, the specifics can be confusing: Is it better to turn off these types of lights or leave them on? Do those lights get hot or not? Aren't these supposed to last longer? Here are a few facts to help tell the difference, and get the most out of each type of lightbulb.

The cost-effectiveness of when to turn off lights depends on the type of bulb and the cost of electricity. The type of lightbulb you use is important for several reasons. All lightbulbs have a nominal or rated operating life, which is affected by how many times they are turned on and off. In general, the more often they are switched on and off, the lower their operating life.

CFL lighting

Because they are already efficient, the cost-effectiveness of turning off compact fluorescents to conserve energy can be a bit complicated. A general rule of thumb for CFLs is this:

- ▶ If you will be out of a room for 15 minutes or less, leave it on.
- ▶ If you will be out of a room for more than 15 minutes, turn it off.

More than any other bulb, the operating life of CFLs is affected by the number of times they are switched on and off. You can extend the life of a CFL bulb by switching it on and off less frequently than if you simply use it less.

It is a popularly held belief that CFLs use a lot of energy to get started and that it is better not to turn them off for short periods. The amount of energy varies among manufacturers and models; however, Energy Star-rated bulbs are required to endure rapid cycling for five-minute intervals to ensure that they can hold up to frequent switching.

Yet the relatively higher "inrush" current required to turn a CFL on lasts for half a cycle, or 1/120th of a second. The amount of electricity consumed to supply the inrush current is equal to a few seconds or less of normal light operation. Turning off fluorescent lights for more than five seconds will save more energy than will be consumed by turning them back

on again. Therefore, the real issue is the value of the electricity saved by turning off the light relative to the cost of changing a lightbulb. This, in turn, determines the shortest cost-effective period for turning off a fluorescent light.

Incandescent lighting

Incandescent lights should be turned off whenever they are not needed because they are the least efficient type of lighting.

Ninety percent of the energy they use is given off as heat, and only about 10 percent results in light. Turning incandescent lights off will also keep a room cooler—an extra benefit in the summer.

Halogen lighting

While halogens are more efficient than traditional incandescent bulbs, they use the same technology and are far less efficient than compact fluorescent lamps and light-emitting diodes. Therefore, it is best to turn off these lights whenever they are not needed.

LED lighting

The operating life of an LED is unaffected by turning it on and off. Although lifetime is reduced for CFLs the more often they are

switched on and off, there is no negative effect on LED lifetime. This characteristic gives LEDs several distinct advantages when it comes to operation. For example, LEDs have an advantage when used in conjunction with occupancy sensors or daylight sensors that rely on typical on-off operation.

Also, in contrast to traditional technologies, LEDs turn on at full brightness almost instantly. LEDs are also largely unaffected by vibration because they do not have filaments or glass enclosures.

Lighting manufacturers should be able to supply information on the duty cycle of their products. In general, the more energy-efficient a lightbulb is, the longer you can leave it on before it is cost-effective to turn it off.

In addition to turning off your lights manually, you may want to consider using sensors, timers and other automatic lighting controls.



Increase lighting efficiency by regularly cleaning fixtures and bulbs.

MAKE YOUR
VOICE
HEARD!

New EPA rules put our **jobs**
and **family budgets**

ON the line

»»»» ACTION.COOP ««««

Avoid Counterfeit Electrical Products

Every day, counterfeit electrical products are infiltrating our homes, businesses and public institutions. These fraudulent products pose a serious financial and legal liability to the electrical industry, and they have become a grave safety crisis for our communities—a crisis that requires immediate action.

More than 1 million counterfeit electrical products, including extension cords, power strips, batteries and hair dryers, have been recalled in recent years. Recent statistics from Gallup Consulting and the U.S. Chamber of Commerce estimate that 64 percent of counterfeit electrical products in the United States are purchased from legitimate shops and retailers.

Counterfeit electrical products can be difficult to spot. They can be knock-off versions of brand-name products or items that bear an unauthorized certification marking. And they may have been made without key components or compliance to relevant safety standards to save money. Although these shortcuts may offer cost savings for the manufacturers, they pose great danger to consumers and aren't worth risking someone's safety.

To help raise awareness, the Electrical Safety Foundation International offers the following safety tips to help people everywhere protect themselves and their families from dangerous and defective counterfeit electrical products:

- ▶ Look for the Canadian Standards Association, Underwriters Laboratories or Electrical Testing Laboratories—CSA, UL or ETL—certification marks. If you have concerns about the marks, contact the certifier.
- ▶ Beware of bargains that seem too good to be true. Products may be cheap because they are counterfeit or defective.
- ▶ Use established vendors who purchase their goods from legitimate distributors and genuine manufacturers. Fly-by-night vendors may not be willing to grant refunds for electrical products that do not perform as they should.
- ▶ Check the product's warning label. It should be free of grammatical errors and should not conflict with information found elsewhere on the package.
- ▶ Look for the name and contact information of the manufacturer. If this information is missing, consider purchasing electrical products elsewhere.
- ▶ Avoid no-name products that lack brand affiliation.
- ▶ Be proactive and keep informed. Safety organizations provide information about product recalls on their websites, like the Consumer Product Safety Commission's cpsc.gov and Underwriters Laboratories' ul.com.

By working together to promote education and awareness, we can help to prevent the devastating injuries, fires and fatalities caused by counterfeit electrical products.



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When purchasing electric devices, look for one of these three certification marks that indicate the device meets safety regulations. Look closely at the label to be sure it's authentic, as counterfeit products often carry counterfeit safety endorsements.



Only Crackpots Take Potshots

It doesn't take a crack shot to hit an electric insulator or transformer, just a crackpot

During hunting season, careless shooters taking potshots at electric equipment can cause major problems for your electric cooperative. Here's why:

- ▶ You are inconveniencing your fellow member-customers whose electricity has been disrupted.
- ▶ It could even be a matter of life and death to someone on a life-support system or to someone who is hit by a stray shot.
- ▶ Damage to electrical equipment is very expensive to repair. Lines may be cut or weakened from a shot, and they may sag or break, becoming a severe hazard for anyone who comes in contact with the line.
- ▶ Broken insulators can cause power outages that are hard—and expensive—to find. An insulator cracked by a bullet can remain on line for a long time before it finally fails.

Enjoy your sport, but be a responsible hunter. Teach your children to respect power lines, electrical equipment and guns so that they, too, will be responsible hunters.

Make Fright Night a Delight

Halloween is one of the happiest holidays for kids and their parents. Don't let it turn into a frightening experience because of outdoor safety hazards at your home.

Welcome trick-or-treaters to your door by making your yard and porch safe to visit. Here's how:

Keep it clean. Clutter can cause trouble when children are traipsing through your yard. Pick up rakes, power tools, tree branches and anything else that could either trip or tempt young visitors.

Keep the lights on. Light a walking path to your front door. That will both direct the trick-or-treaters to the single spot at your house where you'd like them to be, and offer them a safe way to get there. Before October 31, replace all burned-out outdoor lights, and consider adding some more.

Keep your message clear. The best way to tell trick-or-treaters that you've run out of candy is to turn off all outdoor lights and most of the indoor ones. A dark house signals a parent to take the party elsewhere.



Keep it simple. Homeowners decorate nearly as much for Halloween as they do for Christmas. If your display includes outdoor lights, choose products rated for safety by Underwriters Laboratories. If you don't see a UL mark on the box the lights come in, don't buy them. Every year before hanging your outdoor decorations, check all decorations for defects and damage, which can cause a fire. And remember to turn off all lighted decorations when you're not at home.