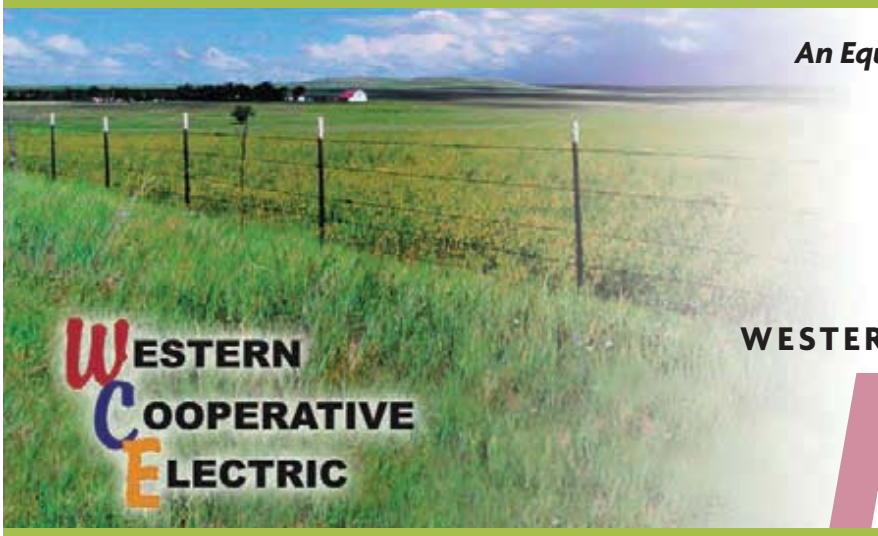

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A Touchstone Energy® Cooperative

P.O. Box 278, WaKeeney, KS 67672
800-456-6720
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WESTERN COOPERATIVE ELECTRIC
NEWS

Tip of the Month

Remember to close your fireplace damper (unless a fire is burning). Keeping the damper open is like leaving a window wide open during the winter, allowing warm air to escape through the chimney.

Slash Your Heating Bills!

A recent sales publication appeared in local mailboxes that had the heading "Slash Your Heating Bills." This ad was for an electric space heater. According to Webster, the definition of slash that would probably fit to this sales phrase would be–to reduce or curtail drastically. While some claims do have truth to them, they are also very misleading.

Small space heaters are typically used when the main heating system is inadequate or too expensive to operate. They are also used to boost room temperatures for individuals who are sensitive to cold. While these are the intended and practical uses for portable heaters, they should not be used to heat your whole house.

> **The only way to potentially save money is to use a heater in one room and leave the rest of the house chillier.**
>
> **CONSUMER REPORTS, OCTOBER 2007**

Most space heaters rely on convection (the circulation of air in room) to heat a room, some rely on radiant heating; that is, they emit infrared radiation that directly heats up objects and people that are within their line of sight. Radiant heaters are a more efficient choice when you will be in a room for only a couple of hours, if you can remain within the line of sight of the heater. A convection heater may be used efficiently for smaller rooms that can be sealed off such as bathrooms, back bedrooms.

If you are considering using one of these types of heaters, you must first realize the truth of using portable heaters.

First, any portable heater you plug in will increase your electric bill. The claims made by most retailers is that it will only cost you as little as $1 a day, but the fine print reveals the true cost. Generally these advertisements use a lower cost per kWh.

Secondly, the hours per day that the unit is running will greatly influence the cost that is added to your electric bill. If your house is not well insulated, chances are that the portable heater will run more often, which will dramatically increase your bill. In the advertisements, the low cost is usually based on a run time of less than six hours per day.

Finally, the claim says that you can lower your heating bill. This can only be accomplished if you can lower the setting on your thermostat for your whole house heating system. If you don't lower your thermostat and you use a portable heater, you will actually increase your heating bill.

The best long-term advice for reducing the cost of heating and cooling your house is improving the efficiency of your residence by caulking, insulating, reducing air infiltration and checking for leaks in your duct system.

If you are considering using or purchasing a portable heater and are interested in operating costs, go to www.westerncoop.com and utilize the energy calculator for electric heaters, or call our office at 800-456-6720

Damaged Equipment or First and 10?

It's third down! If you're a football fan, you understand that, absent taking a risk to "go for it" on the fourth down, this is usually the last opportunity to earn up to another four offensive plays—first and 10.

Down. . .set. . .hut. . . Western takes the hike, pulls back, fires a shot down field and. . .?

Most of the time, it's a first and 10, connection successful. Sometimes it's an incomplete pass. Though a rare occurrence for Western Cooperative Electric, unexpected power outages do occasionally occur. What can we do to minimize the problems when "the pass is ruled incomplete?"

We take for granted the completed passes, those times when the electrical connection is successful. We've flipped switches and turned on start buttons to power lights, appliances and equipment so often that we rarely concern ourselves with the complexities of energy delivery and usage. Your member-owned cooperative works diligently to provide reliable, affordable energy. However, at times, unavoidable events interrupt or reduce the efficiency of the energy used to power your home or business.

Power Outages

The delivery of reliable energy can be interrupted when your cooperative's infrastructure, including distribution lines and substations, experiences unpredictable, unpreventable equipment failure, bad weather, encroachment of wildlife or vegetation, and public or construction accidents.

The resulting outages, which can extend from minutes to days, are addressed immediately by your cooperative staff. Unfortunately, these unavoidable lapses in power delivery, though rare, can create inconvenience and expense for you, our valued members.

Voltage Surges & Spikes

When your electrical power is restored after a blackout, the instantaneous transition of power—from an "off state" to an "on state"—can create electrical surges (voltage going higher than nominal and lasting longer than 10 milliseconds) or spikes (increases in voltage lasting only one or two nanoseconds).

Although every piece of electrical equipment in your home is designed to operate at a specified nominal voltage, such as 120 Volts AC, and most equipment is designed to handle minor variations in their standard nominal operating voltage, surges and spikes can damage sensitive equipment, such as computers, appliances and other electronic equipment.

It might surprise you to learn that most surges and spikes are not caused by utility outages. Ninety percent of all electrical surges and spikes are generated within homes and businesses. In homes, most occur when motor-driven devices such as refrigerators, televisions, hair dryers or water pumps shut off; while surges and spikes at businesses can be caused by elevators, air conditioners, vending machines, copiers, large computers, even lights turning on and off. These power outages can result in rushes of power back "up the line," causing the energy these devices were consuming to be diverted elsewhere in the form of excess voltage, capable of damaging sensitive equipment.

Voltage Sags

Voltage sags—brief reductions in voltage, typically lasting from a cycle to a second or so, or tens of milliseconds to hundreds of milliseconds—are caused by temporary losses of supply, short circuits, load switching, network switching and power swings when they originate at a utility. In many cases, however, sags are generated in your home or business when there is an abrupt increase in load caused by short circuits or faults, appliance motors starting or loose connections.

Voltage sags harm sensitive equipment, especially electronics because they lack sufficient internal energy storage to keep operating optimally until the voltage returns to acceptable limits. The ill effects of power interruptions, surges or sags can be irritating and expensive. They can range from a blown fuse that requires a homeowner to make a trip to a hardware store to buy a new one to more serious occurrences, including the expensive replacement of spoiled food in a freezer, fried electronics or damaged appliances. The personal and financial costs are real.

Typically, the costs or inconvenience of electric anomalies are borne by the end user because the cooperative's responsibility for the above-mentioned events extends only to the point of electric delivery—your meter. There are steps you can take, however, to guard against electrical damage to your home or business.

Western's Defensive Strategy

Some of Western's substation transformers are protected by fuses, and some are protected by circuit switches—each with its pros and cons. When a substation transformer is protected by fuses, an issue with one fuse will result in a power outage for only those members served by that "phase" of power protected by that fuse. Alternatively, when a substation transformer is protected by circuit switches, the circuit switch will operate by kicking off all "phases," resulting in a power outage for all members served from that substation.

On the downside, the fuse protection scenario can create fluctuating voltage when one fuse is under distress. Alternatively, with the circuit switch protection scheme, there is no fluctuating voltage as the switch shuts down the entire substation.

Our members' increased use of equipment with electronic circuitry, which is sensitive to fluctuating voltage, has Western looking into the costs of retrofitting our fuse-protected substations with circuit switches. The cost of doing so is very expensive, however. As your member-elected board considers these costs and their impacts to rates, there are various options that you, the members, can utilize to protect your sensitive equipment.

Members' Defensive Strategies

If you are at home during a power outage, unplug sensitive equipment to prevent damage from a surge when the electricity comes back on. Leave one light on so that you will know when the power comes back on.

- **Install surge protectors on major items.** These devices divert extra electricity to each outlet's ground wire to help protect your appliances, computers, etc.
- **Consider an uninterruptible power supply, also known as a UPS.** It looks like a big surge protector, but includes a battery back-up system that supplies power for five to 15 minutes to give you time to shut down your equipment safely. A UPS may have as many as 10 plugs with surge protection, but only about five will be supplied with emergency power. Make sure your computer is plugged into one of the powered plugs.
- **Purchase programmable radios and clocks with battery backup systems** to prevent service disruption.
- **When working on a computer, save** your information periodically throughout the day.
- **Purchase a whole-house surge protector.** It allows in only the electricity your home needs, not the unruly over-voltages from the utility. It also protects your devices from any trouble that can occur from surges inside the house. They are typically a $200 to $500 add-on.
- **Invest in an automatic transfer switch.** This option provides the greatest level of protection, but is probably the most expensive (upwards of $1,000 per meter). Ordinarily, an automatic transfer switch is installed in conjunction with a generator. They are available, however, on a stand-alone basis and will protect from BOTH power surges and sags. Installed at the member's expense, they would need to be installed on every meter loop the member wishes to protect. Call us for more information on the cost to install an automatic transfer switch.

- **Check with your insurance provider** to see if losses resulting from outages are covered under your plan. If not, ask about the availability of a rider that will cover costs associated with an outage, such as food spoilage, damaged electronics or appliances and frozen water pipes.

Although power outages are rare, they can result in damage to your home or business. Stop by the office or call 800-456-6720 to team up with your Western staff to figure out the best protection option for your home or business. Will it be damaged equipment or first and 10? With your member-owned Western Cooperative Electric's help, you make the call.

Get to Know Your Western Co-op Electric Staff

Robert McCoy

Meter Reader & AMI/GIS Technician

7.5 Years of Service

Robert McCoy

TELL US ABOUT YOUR FAMILY. My wife, Mary Jo, and I have been married for 39 years, and dated 2 ½ years before. We have two daughters, both married and live in WaKeeney. We have three grandchildren. We also have two German Shorthair dogs.

WHERE ARE YOU FROM ORIGINALLY? I have lived in WaKeeney all my life.

WHAT DO YOU LIKE TO DO IN YOUR SPARE TIME? Hunting, fishing, camping, gardening, and work in my upholstery shop.

WHAT ACCOMPLISHMENT ARE YOU MOST PROUD OF? Learning and auctioneering a sale before I got out of high school.

WHAT HAS BEEN YOUR FAVORITE VACATION? Trip to Alaska

WHAT IS YOUR FAVORITE BOOK OR MOVIE AND WHY? Titanic—Because of a true story.

WHAT SPORT OR TEAM IS YOUR FAVORITE. Kansas City Chiefs

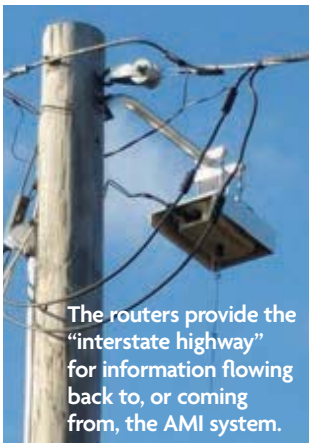
WHAT IS SOMETHING NOT ANY PEOPLE KNOW ABOUT YOU? Don't know of anything. I am an open book.

IF YOU COULD BE ANY ANIMAL, WHAT WOULD YOU BE AND WHY? Coyote, because they are good hunters and very sly.

WHO HAS INSPIRED YOU IN YOUR LIFE AND WHY? My Grandpa Feezor. He was always kind, helpful and never got excited. Just took each day as it came.

Western's AMI Spotters' Guide

Western is deploying Advanced Meter Infrastructure (AMI) equipment throughout its territory. The meters that will be replaced at your service locations are only a part of the AMI system. There are other supporting devices mounted on Western's poles to obtain meter readings, outage indications, voltage readings, and other important information that is reported back to our systems where usage is billed, outages are reported, online bills can be paid (coming soon!), and more. Let's review the new equipment you might see on Western's poles.



The routers provide the "interstate highway" for information flowing back to, or coming from, the AMI system.

Router – the workhorse of the system that moves data "traffic." Resembling collectors, but mounted near transformer height, these have one short antenna protruding from the bottom. The routers provide the "interstate highway" for information flowing to and from the collector. Routers take all the information gathered from the meters and pass it onto the collectors. They also pass signals from the collector back to the meter with information about meter health, disconnect commands, meter reads, and whether the meter has come alive yet during an outage.

Despite what you may have heard, none of the AMI equipment contains cameras or any "spy" gear.

Collector – the brains. It processes requests from the office, gathers and concentrates all the traffic from various meters and routers, monitors where things are in the network, and reports all of this back to the control software. The collector is the window into the AMI network, handling requests from the office, and reporting the results.

The collector, our window into the AMI network, handles requests from the office and reports the results.

The collector is easy to spot even though there are only approximately 30 routers for each collector. They have a tall antenna mast (the higher, the better) and additional support equipment near the ground. A cellular antenna is mounted on either the top of the collector or higher up the pole. Lightning surge protectors are mounted in line with the antenna cable.

Meter – the component of the AMI system most familiar. Meters are mini marvels of measuring electrical usage in digital form. They are like small computers and can be used to communicate with high power consumption devices in your house, such as furnaces, air conditioners, dryers, pool pumps, and heaters, to help you know more about your home's power usage. They will allow Western to offer Time of Use rates, which is a rate that provides a cost break for not using power during peak times of the day, normally during the summer. The meters self-report when they are about to lose power, if they are using an abnormal amount of power, if they are damaged, etc.

As the needs of the system change, or when Western offers new rates and programs, we may need to update the programming on the meters. Previously, this would have to be done onsite and one meter at a time. With the "highway" system provided by the routers and collectors, we can "electronically push" meter programs and operating system updates from the office to the meters.

As you can see, the AMI system includes various equipment, all designed to work seamlessly together. Metering technology is advancing, and Western is using it to provide members with safe and reliable electricity, through a safe and reliable AMI infrastructure.

If you have questions, please visit our website at www. westerncoop. com, or call Western during business hours at 800-456-6720.