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LYREC
Your Touchstone Energy® Cooperative

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3200 W. Holly
Sidney, MT 59270
Phone: 406-488-1602
Toll Free: 844-441-5627
Fax: 406-488-6524

The well-connected lineworker and the cool technologies used in the field

BY TOM TATE

When electric cooperatives were formed in the 1930s, their technology was primitive by any standard – digging holes for the utility poles by hand, walking the poles up into those holes, and using ladders to reach equipment needing service. And if you had to get in touch with the line crew, face-to-face communication was the only option.

Today, the lineworker rivals any other worker when it comes to having the necessary technology to get the job done safely, quickly and more accurately. Let's take a look at a few of the devices behind this evolution, starting with the tablet.

Many electric co-ops are sending their crews into the field with rugged tablets. Depending on the co-op, the content varies. A common use is to load work orders detailing the day's projects. This can include construction drawings for how the job is to be built, the bill of materials so they know what to pull from inventory before hitting the road and system maps so they know exactly where to go. Gone are the reams of paper and cumbersome map books of the past.

Not quite as new, but equally important, are GPS units. This functionality might be built into the lineworker's tablet, a rugged

smartphone or a handheld unit. As more co-ops map their systems using GPS coordinates, the GPS capability gets the crews where they need to be in a more efficient manner. One of my personal favorites in terms of lineworker technology is the forward-looking infrared camera, also known as FLIR. You may be familiar with this technology from the many ghost hunter programs currently on television. With a FLIR camera, crews can rapidly scan power lines, transformers and other equipment when searching for hot spots. A piece of distribution equipment about to fail will often get hot. While not visible to the naked eye, it shows on a FLIR display. Scanning the system with an FLIR camera is a fast and accurate means of spotting a problem before it becomes an outage.

And today, many lineworkers have eyes in the sky in the form of drones. Electric cooperatives cover territory that is often difficult to access when they need to survey the system for necessary repairs or to locate a new power line route. Instead of tackling the job on foot or in quads, the co-op crews might be able to send in a drone. Flying above the area gives a great view of the situation and allows the crew to make an assessment of what to do next without having to be there in person. This is especially useful after a major storm when roads can still be blocked.

Cooperatives are laser-focused on providing the best reliability possible at the lowest possible price. A major aspect of reliability is getting the lights back on as soon as possible after an outage. Key in this is the outage management system. This system builds on geo-tagged system maps (each pole has its GPS location mapped), sophisticated engineering models of the distribution system, and for maximum accuracy, an advanced metering system. When an outage occurs, the system uses models and databases to determine the exact location of the fault and the extent of the outage. Crews can then be sent to the right spot to correct the problem. Part of this restoration effort might be a vehicle tracking system that tells operations staff the exact location of each line truck. The crews closest to the outage are sent to restore power – and essential information can be accessed on the tablets, depending upon the situation.

Sometimes, all the technology in the world is not enough and a good old-fashioned visual inspection is required. During daylight hours, it can be easy to see the cause of a problem. But at night, lineworkers need a reliable source of light. Today, that comes from LED flashlights and truck-mounted lights. LED flashlights are a fraction of the size of regular flashlights, and they make your incandescent model look like a candle by comparison. In the hands of a lineworker, they provide an amazing view of the lines during the darkest of nights.

Technology is permeating every aspect of cooperative operations, allowing your electric co-op to constantly improve your service. Although Lower Yellowstone Rural Electric Cooperative (LYREC) does not currently use drones or have its entire system mapped using GPS coordinates, LYREC has made numerous strides to have well-connected lineworkers at the forefront of that technical evolution. ■

MEDORA DISCOUNTS OFFERED

Planning a trip to Medora this summer? Lower Yellowstone Rural Electric Cooperative (LYREC) is able to offer its members a discount by being a Touchstone Energy® member. Simply call 1-800-MEDORA-1 and give the discount code of "Touch 2018" for a 15 percent discount on any of the following during any night of the season:

Things to do:

- Medora Musical
- Pitchfork steak fondue
- Bully Pulpit Golf Course

Lodging at any of the following:

- Elkhorn Quarters
- Badlands Motel
- Rough Riders Hotel

LYREC members can also receive 20 percent off admission at the Cowboy Hall of Fame by providing the discount code "Touch 2018."

STAY SAFE ON THE FARM

Overhead power lines are necessary to deliver electricity to hardworking farmers and ranchers, but those same power lines can also be deadly if not treated with respect. While you need to focus on the field and your machinery, Lower Yellowstone Rural Electric Cooperative urges you to also watch for electrical hazards around the farm or ranch.

BE AWARE

Farmers and their equipment should always be 10 feet away from power lines on all sides. Field cultivators and sprayers can often reach as high as 12 feet in the air. Practice extreme caution and use a spotter to make sure you stay far away from power lines when you use tall equipment.

If you have purchased new equipment, be aware of antennas or other attachments that may pose new hazards. A newer, bigger piece of equipment may no longer clear a line. In addition, shifting soil may also affect whether or not machinery avoids power lines from year-to-year.

Power lines also may sag over the years. If power lines on your property are sagging, contact your electric cooperative to repair the lines. Never try to move a power line on your own.

Overhead power lines are not the only electric hazard on the farm. Pole guy wires, used to stabilize utility poles, are grounded. However, when one of the guy wires is broken, it can become charged with electricity. If you break a guy wire, call the cooperative to fix it. Don't do it yourself.

FOLLOW THESE OTHER TIPS:

- Look over work areas carefully for overhead power lines and utility poles. Make sure you, your family and employees know the location of overhead power lines, and use routes to avoid the lines when moving equipment. Do this every year, as equipment sizes and soil conditions may change.
- Be aware of increased heights of equipment, especially new equipment with higher antennas.
- Avoid moving large equipment alone. Have someone watch as you move equipment to ensure you are clear of power lines.
- Be extra careful when working around trees and brush; they often make it difficult to see power lines. ■

WHAT IF YOU CONTACT A POWER LINE?

Imagine that you are driving a tractor to the field when things come to a screeching halt. You look back to see what's stopping you, only to discover that you're tangled in an overhead power line! What do you do?

- First, DON'T climb out. If your equipment does contact a power line, stay in the cab and call for help. Warn others to stay away and wait until the electric cooperative arrives. Most utility lines are uninsulated, bare wires. Do not let your body become a direct link between the power line and the ground.
- If you must leave the tractor due to immediate danger, such as a fire, jump as far away as you can, making sure that no part of your body touches the tractor and the ground at the same time. Land with both feet together and hop or shuffle your feet a few inches at a time, making sure to never break contact with the ground or cause separation between your feet.
- Once you're off the tractor, do not go back until Lower Yellowstone disconnects the power line.

Start saving today

New Co-op Connections member benefit site

The Co-op Connections platform has been upgraded to give you even more savings and discounts. Here are just some of the benefits you can enjoy with your free membership:

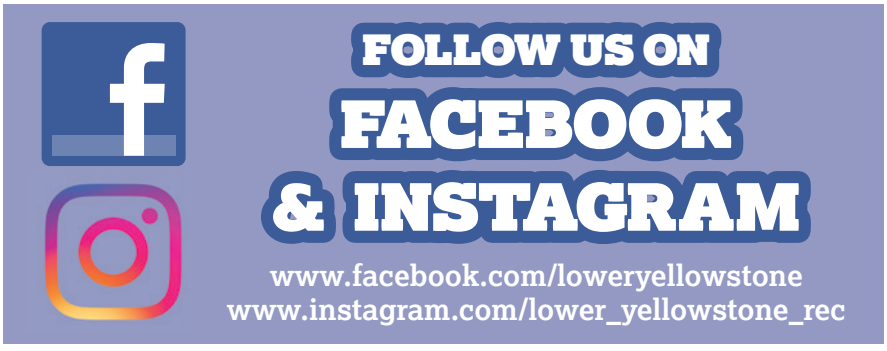
- **Local deals** – Save right in your neighborhood.
- **Healthy savings** – Save on prescriptions, dental, vision, chiropractic and more.
- **Hotels** – Save $20 on average booking worldwide.
- **Cash back shopping** – Earn up to 20 percent cash back at more than 2,000 online retailers.
- **Event tickets** – Save 10 percent on sports, concerts, theatrical performances and more.
- **National discounts** – Get access to great deals and discounts.
- **Insurance savings** – Save hundreds annually when you compare insurance rates on home, life, auto and more.

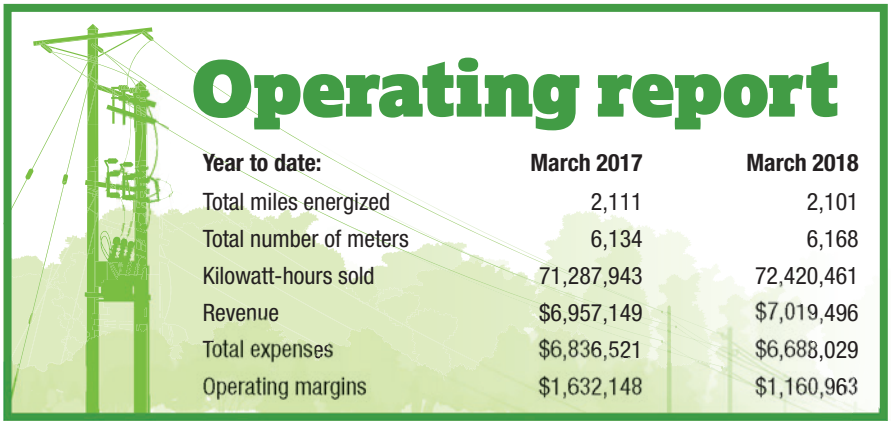
If you had an account on the old www.Connections.coop site, please click "Member Access" at the top right-hand corner and login with your email. Please enter "touchstone123" as the password. Once you've logged into the site, you will be directed to change your password.

If you are new to Co-op Connections, all you need to do is visit www.Connections.coop and click "Sign Up."

Lower Yellowstone Rural Electric Cooperative strives to provide more value and savings to our members, while living the cooperative difference.

Go beyond the card and find all the ways to save! ■





Operating report

Year to date:	March 2017	March 2018
Total miles energized	2,111	2,101
Total number of meters	6,134	6,168
Kilowatt-hours sold	71,287,943	72,420,461
Revenue	$6,957,149	$7,019,496
Total expenses	$6,836,521	$6,688,029
Operating margins	$1,632,148	$1,160,963

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