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Capital Electric Cooperative • Bismarck, N.D.
701-223-1513 or 888-223-1513
1-877-853-5928 Pay-By-Phone
www.capitalelec.com

JUNE 2014

Saving a powerless co-worker

PHOTO BY CARMEN DEVNE

While emergency medical situations are extremely rare on the job, they can and do happen. **John Frey**, lead lineman for Capital Electric Cooperative, practiced a pole-top rescue training in May.

If a co-worker ever becomes unresponsive while on top of a pole, Frey would have the knowledge and ability to lower him quickly and efficiently to the ground.

JUNE 2014 IN THIS ISSUE

SPECIAL LINEMEN ISSUE

- iPads: a more convenient, portable tool
- Safety training
- Personal protective gear
- Tree trimming



Capital Electric Linemen **Seth Lothspeich**, left, and **Steve Harrington** use an iPad at the site of a new service. "If we need to kill the power to put in a new transformer, we can use our iPad to see the different circuits and reroute power as needed. We can have two different feeds in here; that way, no one will be out of power," explains Harrington.



Beau Townsend, assistant staking engineer, was one of the first employees at Capital Electric to use an iPad for work. It did take some time for him to figure out how to use it — but now, after several months, he says he would hate to go back to paging through map books rather than quickly referring to his iPad for information.

iPads: 'The new day and age is here'

PHOTOS AND STORY BY CARMEN DEVNEY

Sure, linemen could use a pair of hand crimpers to splice together electric wires. But why would they use an old ratchet-style tool, when they could use a hydraulic crimper that is much more easy and efficient to operate?

The same applies to the co-op's map books. In the past, Capital Electric Cooperative's 13 linemen hauled two 800-page map books to the fields. The books, which weigh about 25 pounds apiece, gave them information on the co-op's power system and membership. Now, instead of paging through a huge book for information, the linemen are using a more efficient tool: iPads.

In the first quarter of this year, Capital Electric handed out iPads to the co-op's line crews and operations staff. The iPads came with special software created by National Information Solutions Cooperative that allows the linemen to use an electronic mapping system. NISC is an information technology company that develops and supports software and hardware solutions for its member-owners who are primarily utility cooperatives and telecommunications companies across the nation.

Kent Kensmoe, Capital Electric's information technology specialist, headed up the iPad implementation and served as the liaison between the co-op and NISC. He says prior to

the purchase of the iPads, the co-op printed map books on an annual basis. Over the years, the co-op has experienced significant growth, and the maps became outdated quickly because of new additions and changes of service.

Justin Morgen, engineering technician, updates the system maps. Then, they are downloaded to the iPads.

Kensmoe says the maps are updated quarterly now, but will be updated monthly in the near-future. So far, they are working well for employees who use them on a regular basis.

"The iPad is very rugged and has a good battery life. It enables our line crews to carry critical data with them into the field that is accessible on demand 24/7," Kensmoe explains.

For many linemen, it was easy to adapt to using iPads at work. Many already carried smart phones and used iPads at home.

Beau Townsend, assistant staking engineer, was one of the first employees at Capital Electric to use an iPad for work. Just like a fancy new cell phone, it did take some time for Townsend to figure out how to use the iPad. Now, after several months, he says he would hate to go back to paging through bulky map books rather than quickly referring to his iPad for information.

"We have access to everything electronically now," he says.



Prior to using iPads, Capital Electric's linemen would page through 800-page map books for information on the co-op's power system and membership. In comparison to the map books, which weigh 25 pounds apiece, the iPad is much more light-weight and portable.



Capital Electric's linemen started carrying iPads in their trucks the first part of this year. The iPads have software that allows the linemen to view a mapping system of the co-op's service area. Some of the details a lineman can view include the co-op's overhead and underground lines, substations and breakers, and membership account information.

"Mike (Berg) and I can be staking in a backyard, and it's a lot easier to carry around an iPad than to lug around a map book."

Lineman Seth Lothspeich says he looks forward to the iPads having wireless Internet capabilities, so line crews can search online for equipment and how-to videos.

"An iPad comes in real handy. Everything is on the Internet. We could use our iPads to look up a video on YouTube and

see how something works, or Google a piece of equipment," he says.

The linemen will continue to carry map books in their trucks, for the rare occasion when an iPad battery is running low. But Lothspeich feels confident, his days of referring to a bulky printed map are few.

"This is the new day and age here," he says with a laugh. **CEC**

Why are linemen on my property?

Capital Electric Cooperative employees and contractors work throughout our service territory, including on the rights-of-way and easements, and across your private property and driveways. Our efforts to ensure reliable power for you and your neighbors mean we must cross your property from time to time. You may see us:

- Making routine repairs
- Restoring power outages
- Replacing meters
- Maintaining vegetation in rights-of-way
- Locating buried utilities for construction and digging projects

- Working to upgrade poles, wires, transformers and equipment
- Inspecting lines, power poles, transformer boxes and equipment

Field work, except emergency power restoration, is conducted during normal working hours from 8 a.m. to 5 p.m. Monday through Friday. Every effort is made to avoid damage and unnecessary intrusion.

If you have concerns about our work on your property, contact Capital Electric Cooperative's operations department at 701-223-1513. We appreciate your cooperation. **CEC**



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CALL
BEFORE YOU
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One free, easy call gets your utility lines marked AND helps protect you from injury and expense.

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POLE-TOP RESCUE

A safety training no lineman wants to put to the test

STORY AND PHOTOS BY CARMEN DEVNEY



Jeff Holzer, lineman for Capital Electric Cooperative, uses the pole's cross-arm to secure the rope.

Staying on top of safety and regularly reviewing what they already know can make the difference between life and death in a critical situation for linemen who sometimes work in stressful conditions to restore power following an outage. The 13 linemen who work for Capital Electric Cooperative certainly hope to never have to perform a pole-top rescue ... but if they do, they will be prepared.

During the pole-top rescue safety training held May 15, each lineman had to climb a pole, secure a rope around the waist of a 200-pound mannequin, and lower the "body" to the ground. The mannequin represents a co-worker who may have had a heart attack, suffered from heat stroke or exhaustion, or experienced an electric shock. The annual training is required by the Occupational Safety and Health Administration and presented by the North Dakota Association of Rural Electric Cooperatives (NDAREC).

NDAREC Safety Instructor Jason Smith discussed different techniques on how to lower an injured person to the ground. In areas where Capital Electric has a three-phase distribution system, a lineman could use the pole's cross-arm to secure his rope. In other areas that have a single-phase line without a cross-arm on the pole, a lineman is trained to use a screwdriver to secure the rope after the tool has been pounded into the pole.

While emergency medical situations are extremely rare on the job, they can and do happen. Thanks to regular safety training sessions including pole-top rescue, Capital Electric's linemen are better equipped to react quickly and efficiently, and hopefully bring their co-worker and friend home safely to his family. **CEC**



Brad Johnson, lineman for Capital Electric Cooperative, pounds a screwdriver into the pole. In the event he would be working on a single-phase distribution line that would not have a cross-arm, he could secure the rope with his screwdriver before lowering an injured person to the ground. **Jason Smith**, safety instructor for NDAREC, watches from the ground to make sure Johnson performs the rescue safely.

What's he wearing, and why?

When Lineman **Seth Lothspeich** climbs a pole and works on a power line, he wears personal protective gear to prevent accidents or injuries. The following equipment helps keep him safe while on the job.

HARD HAT:

To protect his head from electrical contact or falling objects.

SAFETY GLASSES:

To protect his eyes from an arc or flying debris.

HARNESS:

To protect him from falling.

LEATHER GLOVES:

To protect his hands.



Thanks for attending YOUR annual meeting!

The Capital Electric Cooperative directors, managers and employees thank you, our consumer-owners, for attending our 68th annual meeting of the membership held June 3. We appreciate the interest and support you continue to show in your

electric cooperative!

This year our board of directors approved the capital credit retirement of all unretired capital credits from 1998 plus estate retirements totaling more than \$1,033,000. Capital Electric employees distributed checks prior to the annual meeting.

Unclaimed checks were mailed to members who were unable to attend.

To learn more about Capital Electric's 68th annual meeting, read a complete summary in the July local pages of *North Dakota Living*. **CE**



Keeping our electric system as reliable as possible

Tree trimming is a regular part of your electric cooperative's operations.

Capital Electric Cooperative, like all electric utilities, is required to maintain appropriate clearance between trees and electric transmission and distribution lines. Trees need to be trimmed, and in some cases removed, to minimize potential power outages and to eliminate fire and safety hazards due to trees

contacting energized electric lines.

Capital Electric typically uses local contract tree-trimming crews to perform this task. Bullinger Tree Trimming will have crews operating within our service area again this year.

Please know that they are working on your cooperative's behalf to help keep our electric system as reliable and safe as possible. **CE**



Become a fan on Facebook!

Capital Electric Cooperative now has a Facebook page! Facebook will allow us to communicate quickly with our member-owners, the media and the general public on important co-op issues. If there is a major outage, you can check our page for frequent updates. We will also be providing information regarding your co-op membership, energy efficiency, upcoming meetings, youth programs and much more. Go to **www.facebook.com/capitalelectricnd** to "like" our page and begin receiving information.



Tom Jespersen, an energy advisor with Verendrye Electric Cooperative, shows a group of students how a solar pasture well system works.

Solar power brings water to livestock

Often, it is not feasible to bring electricity to remote pasture watering sites. But there are solutions to watering livestock far from home.

Solar power and water pumping are a natural fit. Generally, water is needed most when the sun shines the brightest. Solar modules generate maximum power in full sun conditions when larger quantities of water are typically needed. Because of this “sun-synchronous” demand, solar is an economical choice over windmills and engine-driven generators for most locations where utility power is not available.

Solar-powered water developments consist of a power supply and pump. The power supply consists of photovoltaic (solar) panels, which are made up of solar cells that produce direct-current (DC) electricity when exposed to light. The power created by the solar panels either directly powers the pump or is stored in batteries.

The pumps used in solar water systems are designed to use direct current.

Solar-powered water developments have two primary designs: battery-coupled and direct-coupled. Battery-coupled water pumping systems

consist of solar panels, a charge control regulator, batteries, pump controller, pressure switch and tank and DC water pump.

The electric current produced by photovoltaic (PV) panels during daylight hours charges the batteries. The batteries, in turn, supply power to the pump anytime water is needed.

The use of batteries spreads the pumping over a longer period of time by providing a steady operating voltage to the DC motor of the pump, enabling the system to provide a constant source of water for livestock.

In direct-coupled pumping systems, electricity from the solar panels is sent directly to the pump, which, in turn, pumps water through a pipe to where it is needed. This system is designed to pump water only during the day. The amount

of water pumped is dependent on the amount of sunlight hitting the PV panels and the type of pump. To compensate for variations in flow, proper pairing of pump and solar panels is required to achieve efficient operation of the system.

Due to the irregular flow associated with solar systems, either a storage tank or a large tank needs to be used because these systems need to be able to store three to seven days of water to ensure livestock have a constant source of water.

Contact Capital Electric Cooperative for more information on solar water pumping. **CEC**

Source: North Dakota State University Extension Service



Board minute excerpts April 25, 2014

The regular meeting of the Board of Directors of Capital Electric Cooperative, Inc., was held on Friday, April 25, 2014, at co-op headquarters in Bismarck.

Financial review (March 2014): Prior to the board meeting, Directors Eckroth and Hilken reviewed the March 2014 check register and expenditures. It was reported that all checks were in order. It was moved, seconded and carried to approve March expenditures in the amount of \$3,367,875.72.

Business department report: The business manager reviewed the March financial and statistical report with the Board. The total kilowatt-hour (KWH) sales for March 2014 were above budget by 5.4 percent. The actual monthly electric revenue is up 2.7 percent from budget. Year-to-date, KWH sales are up from budget by 8.8 percent and electric revenue versus budgeted revenue is over budget by 6.9 percent. The financial margin for March is \$315,471, versus the budgeted margin of \$236,929, above budget by \$78,542. Operating margins for the month were \$129,239, above budget by \$346.

In March, 25 new services were billed bringing active services to 17,755 versus 17,092 at this time last year.

The business manager reviewed the comparison of actual-to-budgeted expenses for the month of March and for the year-to-date through March 2014. Accounts receivable balances as of April 24, 2014, were reviewed.

FFB loan AK8: Capital Electric has received notice that the final paperwork for our new Federal Finance Bank Loan "AK8" has been approved by the Rural Utilities Service (RUS) in the amount of \$31,000,000 and loan funds can be drawn as needed.

Eide Bailly audit: The Eide Bailly auditors were in our office for fieldwork during the week of April 14, 2014. There were a few miscellaneous questions. A representative from Eide Bailly will be on hand at our May board meeting to present the audit findings to the board and at the June annual meeting to present to the membership.

Capital credits: Following review of the financial condition of the cooperative and recommendation by management, it was moved, seconded and carried to authorize payment of capital credits to the following deceased members' estates:

Gerald Schneider	\$787.26
Allen Kleinschmidt	\$823.29
Reiny Sayler	\$1,369.01
Bob Aberle	\$12,624.33
Rodney Creswell	\$1,414.96
Norma Hinkel	\$792.85
Ruth Hein	\$878.07

Peter Mellmer	\$282.89
Zachariah WhiteHorn	\$14.81
TOTAL	\$18,987.47

Quarterly write-off: Following review, it was moved, seconded and carried to approve the quarterly write-offs for the quarter ending March 31, 2014.

Engineering and operations report: The manager reviewed the written report from the engineering and operations department. This month, 11 work orders were completed, adding 12 new consumers to the system.

Jim Siirtola, meter reader/repairman, retired on April 1, 2014. On April 1, 2014, Summit Utilities started locating Capital Electric's underground cable and has been doing a good job with no complaints.

Fisher Contracting and Third Generation have started trenching and VIP has been working on the rural rebuild.

Capital Electric crews have been trimming trees, doing line inspection and putting on 46 kilovolt (KV) lightening arrestors.

Member services department:

Central Power considers new substation locations for Capital Electric: Doug Mork spent an afternoon with Mark Sherman of Central Power Electric Cooperative. They looked over a number of potential substation locations around the Bismarck area. As the load grows, these locations will be vital to help provide reliable service to Capital Electric's members.

Energy Resource Conservation loans: There are no loans for Board review this month.

Communications and public relations department: The communications and public relations director, Wes Engbrecht, reviewed the written report from the department.

Nominating Committee results: The Nominating Committee met April 15, 2014, and put forth a slate of five candidates for the three open board positions. The nominees are as follows:

District 1:	Rodney Eckroth of Bismarck
District 2:	Kyle Hilken of Wilton
	Rex Hollenbeck of McClusky
	Curtis Jundt of Bismarck
	William Patrie of Bismarck

Annual Meeting planning: We are working on annual meeting planning, which will include candidates for federal and state offices as this is an election year. We are adding a few new features this year, including the new prize drawing software and a video montage of photos from last year. The entertainment will be Joe Friday's Dixieland Jazz Band.

Safety report: There were no lost-time accidents this month.

The annual "Diggers Ball" was held April 22, 2014, at the Montana-Dakota Utilities (MDU) service center. This event is put on by Capital Electric, BEK Communications Cooperative, Mor-Gran-Sou Electric Cooperative, Midcontinent Communications, Northern Border Pipeline Company, Williston Basin Interstate Pipeline Company and MDU. We do this to show our appreciation to all the contractors in the area that use the 811 number for "Call Before You Dig."

Some Capital Electric employees participated in a Federated Insurance questionnaire last month on Capital Electric's safety program. The survey took approximately four hours and it was on a website with a teleconference phone line.

Central Power: Haugen-Hoffart reported on Central Power matters.

Basin Electric Power Cooperative: The board reviewed the written summary for the Basin Electric Board of Directors meeting.

North Dakota Association of Rural Electric Cooperatives (NDAREC): Liaska presented on the highlights of the April meeting.

Adjournment: There being no further business to come before the meeting, without objection, the regular meeting was adjourned. **CEC**

CAPITAL ELECTRIC COOPERATIVE

4111 State St. N.

Bismarck, ND 58503

Website: www.capitalelec.com

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Monday-Friday : 8 a.m.-5 p.m.

Office phone: 701-223-1513

Toll-free: 888-223-1513

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