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RURAL ELECTRIC MAGAZINE
MARCH 2018
AN NRECA PUBLICATION

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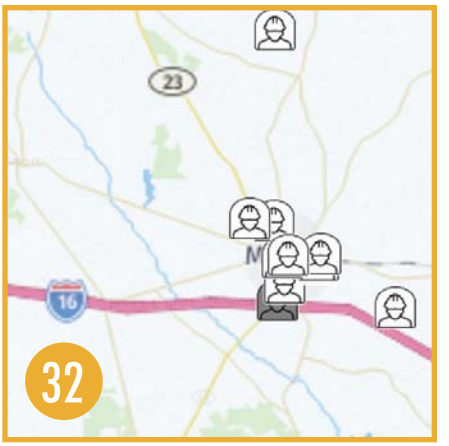

FEATURES

VOLUME 76 • NUMBER 6

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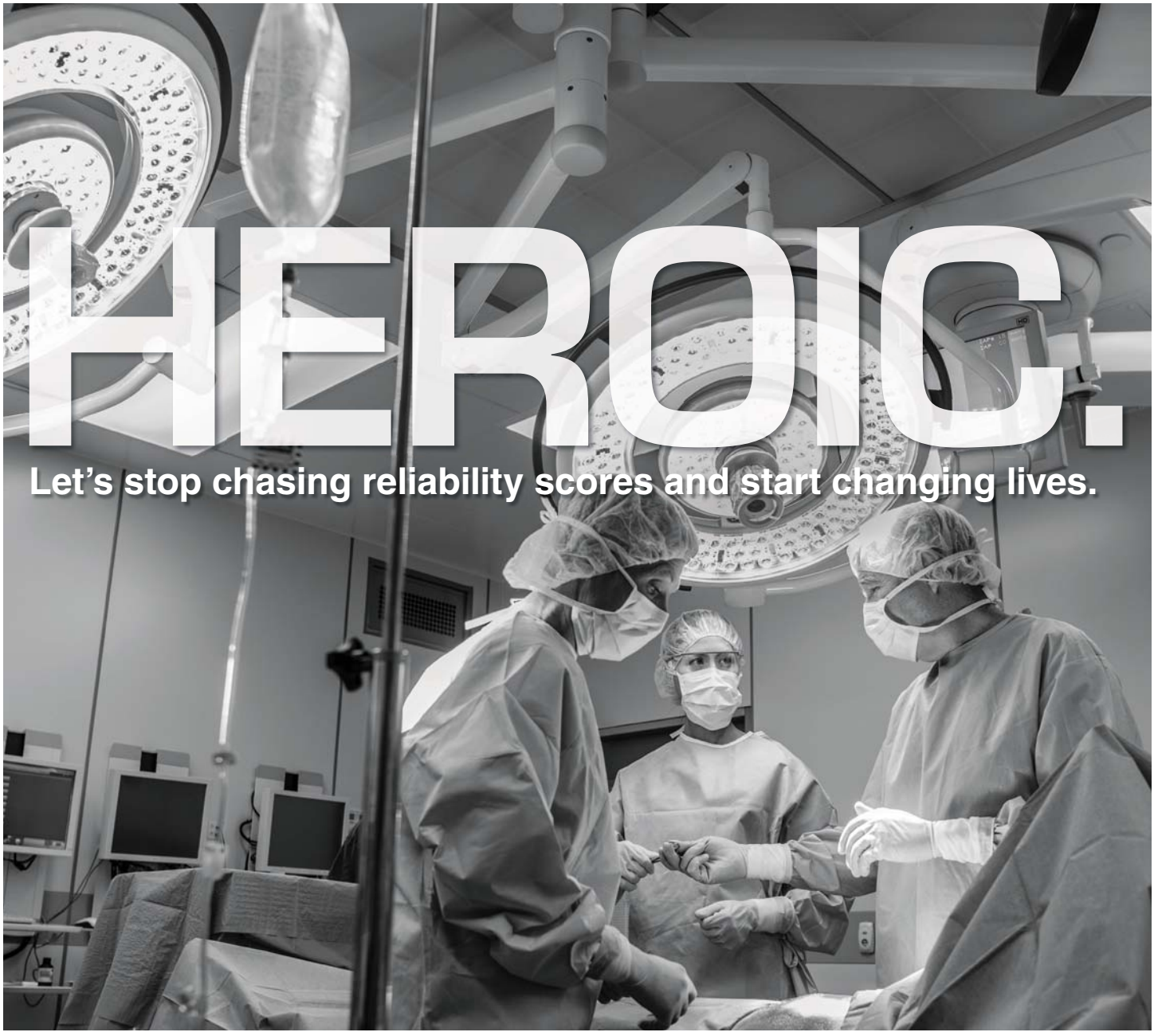

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(USPS 473-080) is published monthly by the National Rural Electric Cooperative Association, 4301 Wilson Blvd., Arlington, VA 22203-1860. Yearly subscriptions: $39 per year for Gold Star Discount Program for NRECA members, $43 for NRECA members, $44 for EBSCO U.S. addressees, $72 for non-members, $92 for international addressees.

Periodicals postage paid at Arlington, VA, and at additional mailing offices. POSTMASTER: Send address changes to RURAL ELECTRIC MAGAZINE, Attn: Membership Department, MEM8-160, 4301 Wilson Blvd., Arlington, VA 22203-1860.

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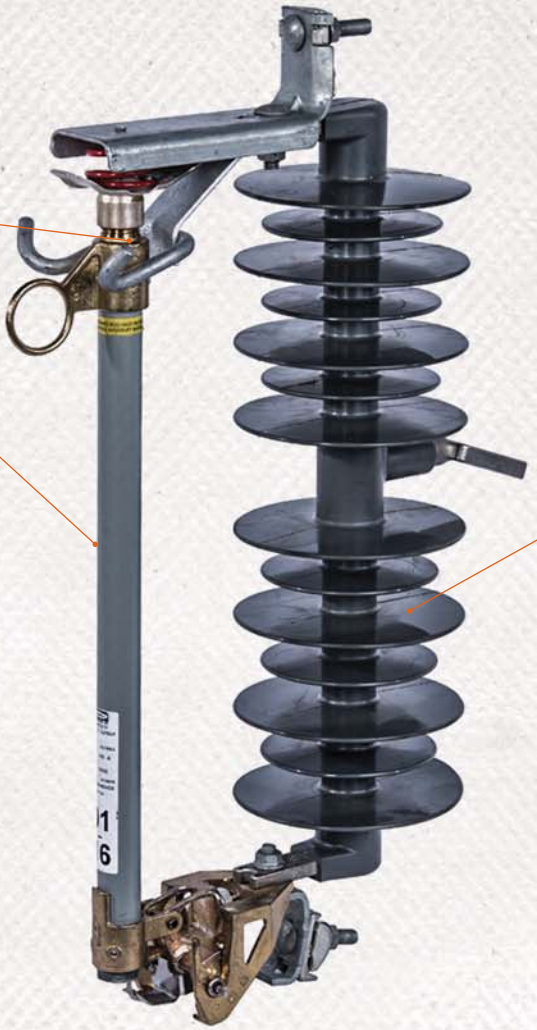
DEPARTMENTS

Spec ≠ Quality



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'THEY CALLED ME A COMMUNIST'

BY FRANK K. GALLANT

Photo courtesy Ellison Photo Co.

Mansfield Dam

Future President Lyndon B. Johnson's top priority as a freshman member of the U.S. House of Representatives in 1937 was getting $5 million from Washington to build the Mansfield Dam near Austin, Texas.

Mansfield was one of six dams being built by the Lower Colorado River Authority (LCRA), a new state agency dependent on federal loans and grants to move forward. The dams had been sold to Congress as flood control projects, according to Ray Lee, a Johnson speechwriter quoted in *The Politician: The Life and Times of Lyndon Johnson* by Ronnie Dugger. But public power advocates like Johnson were focused on something else.

Turbines at the dams could generate "electricity to replace the kerosene lamp," Johnson said. Rural electric cooperatives could be set up to distribute the kilowatts to farms and ranches in his Hill Country district.

"He had been raised by the light of lanterns and cooked for on a wood-burning stove," Dugger wrote. "He had seen his mother scrubbing clothes in a washtub. He knew the insides of outhouses."

Johnson didn't need to read the Department of Agriculture report documenting that, in 1935, only one farm in 10 had electric utility service. He had lived the statistic.

The power companies refused to serve rural areas, claiming they couldn't make a profit. That's why people living even a mile or two outside of Austin didn't have electricity.

Power company executives stood up at gatherings of

continued on page 60

JIM MATHESON, CEO

As a member-driven organization, NRECA draws its strength from the breadth and quality of the relationships we maintain with our members and other stakeholders.

In recent years, NRECA has undertaken several projects to grow those relationships and evolve how we engage with members. In many respects, these changes reflect how we use technology, consume information, and stay connected.

With the launch last month of a completely redesigned version of our member-focused website, cooperative.com, we successfully completed a critical project to enhance member engagement.

The new cooperative.com is built to give every member of the electric co-op family a customizable hub where they can connect, grow, and get things done.

This project was not simply a fresh coat of paint on an aging house. Working with our website partners CFC and Federated, it is a complete rebuild that blends data from several different systems into a seamless user experience.

It required many thousands of hours worked by dozens of NRECA employees across multiple departments over two years. I am grateful for their efforts, and impressed by the member focus, attention to detail, and collaborative spirit displayed by everybody who contributed to the project.

Since the launch, we have been actively monitoring the site for any glitches, which inevitably occur with a project of this magnitude. We have allocated resources to promptly resolve issues as they are identified.

Once we are confident the site is performing as expected, we will launch the final piece of the new cooperative.

> "The new cooperative.com is built to give every member of the co-op family a customizable hub where they can connect, grow, and get things done."

As a portal for everything from benefits information to conference registration to technical papers, we know the sheer volume of information available on cooperative.com can make the site overwhelming to use. The older version had become cumbersome and less user-friendly.

We have addressed that challenge through easy-to-navigate menus, an improved search function, and better organization of resources, including the ability to explore by topic rather than department.

You can also specify which subjects and types of information are of interest to you, and the site will provide that content to you each day. We hope this change will be especially helpful to the many co-op employees who wear several hats and need to stay up to date on topics that might fall outside their official job title.

cooperative.com: professional community pages.

These professional communities are designed to boost engagement and collaboration by giving co-op employees a secure, social-media-style platform where they can network, ask questions, and share ideas with peers.

The new cooperative.com is just one of the actions we've taken to transform the way we engage with you.

Together, we are lifting the voices of America's electric cooperatives and ensuring that the people and places we serve are part of any national conversation about energy and rural development.

I encourage you to make cooperative.com one of your default pages when you launch your browser. Our goal is that you will be rewarded with useful information that is frequently updated.

No matter how often you visit cooperative.com, I am confident you will have a better and more engaging experience. RE

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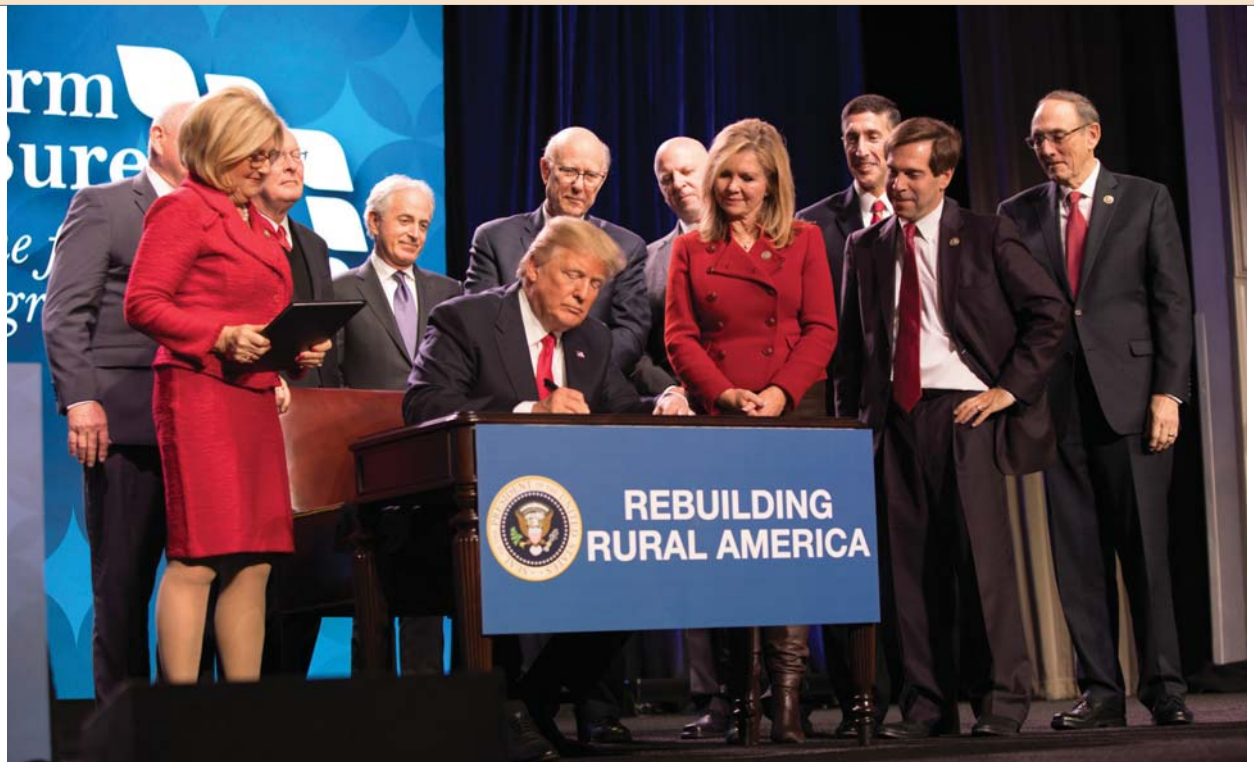


Photo by Mike Knotts

President Trump signed two executive orders to facilitate rural broadband after an address to the American Farm Bureau conference in Nashville on Jan. 8.

TRUMP TASK FORCE: BROADBAND VITAL TO RURAL AMERICA

A task force created by President Donald Trump has recognized the importance of closing the digital divide by focusing on bringing broadband internet service to rural parts of the country.

"Last April, I commissioned a task force to meet with farmers and local communities and find the greatest barriers to rural prosperity," Trump said Jan. 8 at the American Farm Bureau's annual convention in Nashville, Tennessee. "The task force heard from farmers that broadband internet access is an issue of vital concern to their communities and businesses."

Trump signed two executive orders at the event aimed at facilitating rural broadband. One requires the Department of the Interior to ease access to towers and other infrastructure the department manages. The second calls for departments and agencies to reduce barriers to capital investment and government resources to enable rural broadband projects.

"The success of rural America is critical to the well-being of our entire nation," said NRECA CEO Jim Matheson. "This task force report rightfully identifies a number of key areas that are essential to economic growth, and nearly all depend on expanded access to high-speed internet."

Trump tapped U.S. Secretary of Agriculture Sonny Perdue last spring to chair the Interagency Task Force on Agriculture and Rural Prosperity, comprising 22 federal agencies as well as local leaders. The group also recommended expediting infrastructure modernization for rural utilities in addition to enhanced coordination between the Department of Agriculture and the Federal Communications Commission to help bring broadband to rural communities.

"Rural electric cooperatives have begun deploying fiber optic networks throughout their service areas to meet the current, growing, and future demand for smart grid services, such as demand-side management, distributed generation and renewable integration, and smart home technologies, as well as increased grid security," the report states. "The ability to dynamically manage energy use is critical to ensuring network reliability, enhancing system-wide efficiency and keeping electric rates affordable for rural residents and businesses. The high-speed networks, connecting electric system infrastructure and even direct connections to customer locations, can also provide a platform and catalyst for fiber to rural homes."

—By Cathy Cash

CRITTER MAYHEM

Explosions. Fires. Blackouts. Mayhem often results when wild animals find their way into substations and start poking around.

It happens every year, hundreds of times. And every year, TransGard (NRECA Associate Member), the maker of a patented fencing product for substations, puts together a list of the five most dramatic events. "The Five Worst Animal-Caused Outages of 2017" are:

1) *One squirrel = 45,000 without power.* It was the noon hour in sunny central San Diego when a solitary squirrel sacrificed itself on a substation conductor. Witnesses of the July 25 blackout said they heard a loud boom before lights and laptops blinked out in more than a dozen neighborhoods served by San Diego Gas & Electric.

2) *"Snakes are really bad."* While Jacksonville, Florida, slept on July 19, a large red rat snake slithered under a substation gate in Orange Park, a Westside suburb. It moved around safely before coming into contact with a circuit breaker about 6:15 a.m., causing 22,000 Jacksonville Electric Authority customers to start the day without power. "This time of year, the snakes are really bad," said Cynthia Surrency, who lives nearby.

3) *Earthquake? Nope … Raccoon.* A loud explosion at a Rio Rancho, New Mexico, substation shook the ground and sent flames and sparks high up into the night sky on December 13. One neighbor said the "horrific explosion" knocked a bowl of soup off the TV tray in front of her shortly after 9 p.m. Another said the scene "looked like a UFO was landing." The culprit was a raccoon who was "probably looking for a warm place to bed down for the night" when it stepped onto a transformer, said a spokesman for PNM, the unfortunate utility left responsible for close to 10,000 customers without power.

4) *"Not uncommon:" Rodent snarls traffic.* Nearly 6,000 Puget Sound Energy customers, as well as dozens of traffic lights in Puyallup, Washington, dropped off the grid at 4:53 p.m. on February 22 after a squirrel got into mischief in a substation. Animal-caused outages are "not uncommon," said a spokeswoman for the utility.

5) *Grand Canyon squirrel blows transformer.* A gray squirrel gnawed through the insulation on a transformer bushing, immolating itself and blacking out Grand Canyon and three other northern Arizona communities. Grand Canyon schools were let out early after the 11:20 a.m. incident. "We have issues with packrats, prairie dogs, birds, and squirrels," said an Arizona Public Service spokesman. "We get all kinds, even ring-tailed cats and mountain lions."

$14,000 FOR YOUNG LEADERS

The application period for the $14,000 in scholarships awarded each year by the Glenn English National Cooperative Leadership Foundation closes at 11 p.m. EST April 1. It opened on December 1.

The scholarships honor the former Oklahoma congressman who led NRECA from 1994 to 2013. A tireless defender of the cooperative business model, English was inducted into the Cooperative Hall of Fame in 2010.

To be eligible, applicants must be alumni of the NRECA Youth Tour who are college sophomores, juniors, or seniors. One $10,000 and four $1,000 scholarships will be awarded in August.

Freshmen are not eligible "because we have found that when students graduate high school, they have a lot of scholarship opportunities coming at them, but after that first year, these opportunities tend to fade away. This helps alleviate some of their financial burdens," says Beth Knudson, who manages the scholarship program.

Applicants are judged based on their videotaped answers to a list of questions provided by the foundation as well as their curriculum vitae, including internships, volunteer work, political activities, and leadership roles.

Knudson notes that the foundation also helps engineering students. Last year, the first for this new program, two $2,000 scholarships were awarded.

"Recognizing an impending and immediate need, we are hoping to target those interested in pursuing electrical engineering careers in rural America," she says.

These applicants need not be Youth Tour alumni, and the deadline is the same, April 1.

The Glenn English National Cooperative Leadership Foundation has awarded more than $70,000 in scholarships since its inception in 2014. Winners are eligible to apply for second and third awards.

LOW-PRICED SOLAR

At 4.5 cents per kilowatt-hour, a new power agreement gives New Mexico's Otero County Electric Cooperative (OCEC) the best solar deal in the country, according to the Rocky Mountain Institute (RMI), a nonprofit that encourages cost-effective shifts from fossil fuels to renewables.

Late last year, the Cloudcroft, New Mexico-based distribution system signed a 25-year power purchase contract with SoCore Energy LLC to take the entire 3-MW output of a new photovolatic array in Carrizozo, 150 miles southeast of Albuquerque.

RMI, which was a consultant on the project, says community-scale solar projects, those of 0.5 MW to 10 MW, "sit in an economic sweet spot in the market and can deliver significant savings to electric cooperatives and municipal utilities across the country. Community-scale systems are large enough to access low costs through economies of scale and small enough to efficiently interconnect into distribution systems."

"The Carrizozo solar project allows us to deliver renewable energy to our members while also saving them money," says Mario Romero, the co-op's general manager/CEO. "Since OCEC purchases the energy produced by this project at such a great price, this project will allow all of our 14,000 members to benefit by reducing our overall cost of purchased power."

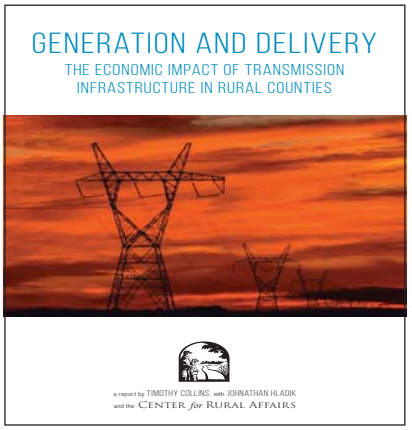
Construction of the Carrizozo project began shortly before Christmas 2017 and is expected to finish early this spring.

TRANSMISSION LINES AND TAX REVENUES

Tax revenues from new transmission lines, like those for wind turbines, should stay in small towns and rural areas. That's what the Center for Rural Affairs concludes in its new report, *Generation and Delivery: The Economic Impact of Transmission Infrastructure in Rural Communities*.

Author Timothy Collins drew his conclusions from studying recently completed transmission lines in three states with different approaches to taxation: Minnesota, with county tax levies; Wisconsin, with environmental impact fees; and Kansas, tax exempt for the first 10 years.

Collins and the Center for Rural Affairs are against providing tax incentives to utilities to build transmission lines. Doing so, he writes, "miss[es] an ideal opportunity to invest in rural communities.



"Conversely, those that grant community stakeholders the power to decide how and where new revenue is used maximize benefit to affected residents. This decision-making power allows neighbors to embrace and encourage future economic development."

In Minnesota, counties are using tax revenues from transmission lines to lower property tax rates. The state has seen steady wind power development since the 1990s and has witnessed construction of 500 miles of new transmission lines in response.

In Wisconsin, utilities pay environmental impact fees on construction of transmission lines 345 kV or larger. The fees are distributed to counties, towns, and villages based on the local impact.

In Kansas, the state taxes utility infrastructure (new transmission lines after 10 years) and then apportions the revenue to counties after taking a small amount for higher education. Collins says the money typically goes to a county's general fund, the fire district, the library, or the school district.

"The growth of renewable energy has altered every facet of the power sector," the report concludes. "A modern and robust delivery system will be needed as the transition to wind and solar generation continues. Improvement and expansion of the electric grid will bring investment dollars and economic activity to the rural communities most closely affected. Community stakeholders must be empowered to determine how this influx is managed."

TAKING THE CHARGING STATION TO THE CAR

When it's too hard to take the electric car to the charging station, a new service takes the charging station to the car.

It's called concierge charging, and, like the special services provided by hotel concierges, it makes life a lot easier for busy professionals—in this case, professionals who drive electric vehicles (EVs).

San Francisco-based FreeWire Technologies does this with its Mobi Charger, a machine of its own design that looks like a bulked-up ice cream cart and is operated by a parking-garage attendant. Drivers order a charge using a smartphone app, open their car's charging port, and walk away.

Alan Shedd, Touchstone Energy® Cooperatives' director of energy solutions, first heard about the service at a utility/EV conference in December. He says concierge charging is a good idea because "workplace and destination charging creates a challenge once you start dealing with lots of vehicles. It's expensive to install multiple charging points that will sit idle once the car is charged." **RE**

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OPEN-BOOK MANAGEMENT

IN A CHALLENGING ENVIRONMENT, DON'T BE AFRAID TO LET YOUR EMPLOYEES SEE BEHIND THE CURTAIN

BY ADAM SCHWARTZ

Melanie Reid of CDS Consulting Co-op contributed her expertise to this column.

Electric cooperatives are facing challenges right now. Our memberships are changing; our workforce is aging; many of the key components of our amazingly stable business model over the last eight decades are in flux.

As is typical, co-ops are meeting these challenges head-on and finding unique ways to adapt, overcome, and thrive.

Over the years working with co-ops, I've found that the ones with the most engaged staffs are nearly always in the best position to weather rough seas and come out strong on the other side of the storm.

There are countless ways to go about building an engaged staff. One that I've been giving a lot of thought to lately is the concept of *open-book management*.

This approach operates on a somewhat radical philosophy that says all employees should be given access to the details of a company's finances. I'm not talking about the numbers that go into the annual report, but rather the decisions and the calculations that are *behind* those annual report numbers. It's a striking departure from the typical "need to know" financial regimen that most companies operate under.

But wisdom suggests—and evidence shows—that when employees are informed about and included in fiscal decision-making, they develop a deeper connection with the company. That translates into a workforce that performs better when times are good and adapts more readily when times are tough.

So how do we do it?

There are several techniques, but like most things, it all begins with some simple education. Why are you switching to open-book management? What is the philosophy? What are the expectations?

Next, from among the rank-and-file employees, assign "line owners" to each primary section of the budget. It will be their job to understand this segment and hold meetings to explain how the decisions each employee makes affect this expense item and, ultimately, the co-op's bottom line. Once staff are on board and really understand the concept, these open-book meetings or huddles can be done in 10 minutes, standing up. All employees should be encouraged to offer what they can do to improve the "line."

Supervisors and the CEO should offer encouragement and feedback to the line owners to help make sure they have the tools they need to involve and educate their peers.

Think about engaging ways to explain budget lines. A walk through the warehouse can be very instructive. Tell folks the prices of all those items on the shelves.

Another good issue to tackle first is the facilities charge. As efficiency efforts and distributed generation sources affect power sales, this important charge that keeps electricity reliable and costs equitable will end up front and center in your rate structure. Every employee at your co-op should be well-versed on exactly what goes into the facilities charge and why it's needed.

Visible scorecards around the building or intranet dashboards with financial information, goals, and milestones are also effective in keeping people involved.

The advantages of having a financially savvy workforce may not seem obvious at first. But you'll be amazed how much more productive and substantial internal conversations about the direction of the co-op become. And you'll be confident that your staff can ably explain the co-op's decisions and policies when speaking with members.

> "[W]isdom suggests—and evidence shows—that when employees are informed about and included in fiscal decision-making, they develop a deeper connection with the company."

The reality is that in a more challenging environment, it's an advantage for your staff to have as much information about the co-op as possible. And if, for any reason, you feel an employee can't be trusted with this information, you need to ask yourself why—then either work to change the feeling or the employee.

As one general manager told me, "When staff members understand the financials, they are better able to make significant contributions. And when everyone is able to contribute, the business has a better chance of continued success. Plus we can have fun with it." RE

Adam Schwartz (@AdamCooperative) is the founder of The Cooperative Way, a consulting firm that helps co-ops succeed. He is an author, consultant, educator, speaker, and member-owner of the CDS Consulting Co-op. You can e-mail him at aschwartz@thecooperativeway.coop.

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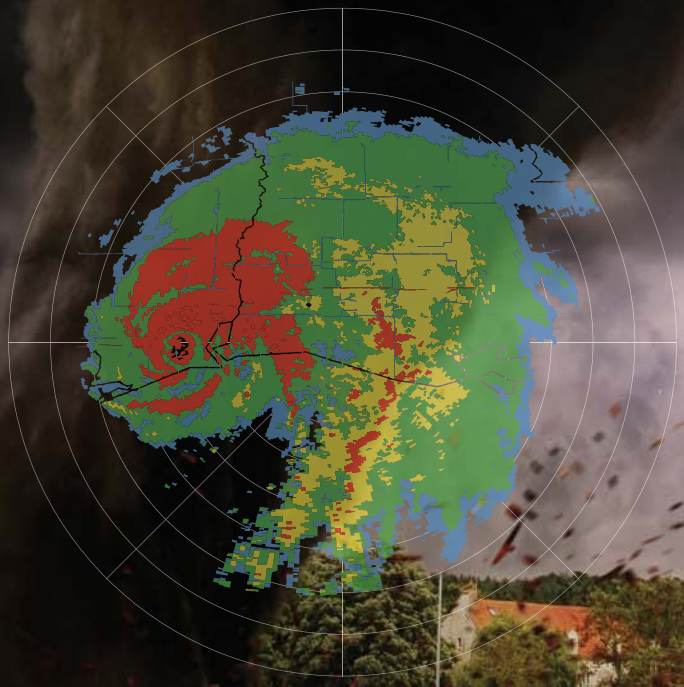

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THE TRANSFORMING GRID

Microgrids on the rise, from AVEC to Ocracoke to Innovation Pointe

BY CATHY CASH

In the midst of the past decade's shale gas boom, an electric cooperative in Oklahoma suddenly found itself with a glut of far-flung industrial load that co-op officials say was like serving 350 Walmarts in the middle of nowhere.

"In 2011, our peak was 110 megawatts," says David Swank, CEO of Central Electric Cooperative. "We received requests that would have tripled our demand. And it was a challenging load for us—very high on the front end, and falling off quickly."

Meeting this volatile, isolated demand with conventional grid infrastructure could have cost upwards of $100 million, Swank says.

The dilemma got folks at the Stillwater-based co-op thinking about non-traditional approaches to serving the load.

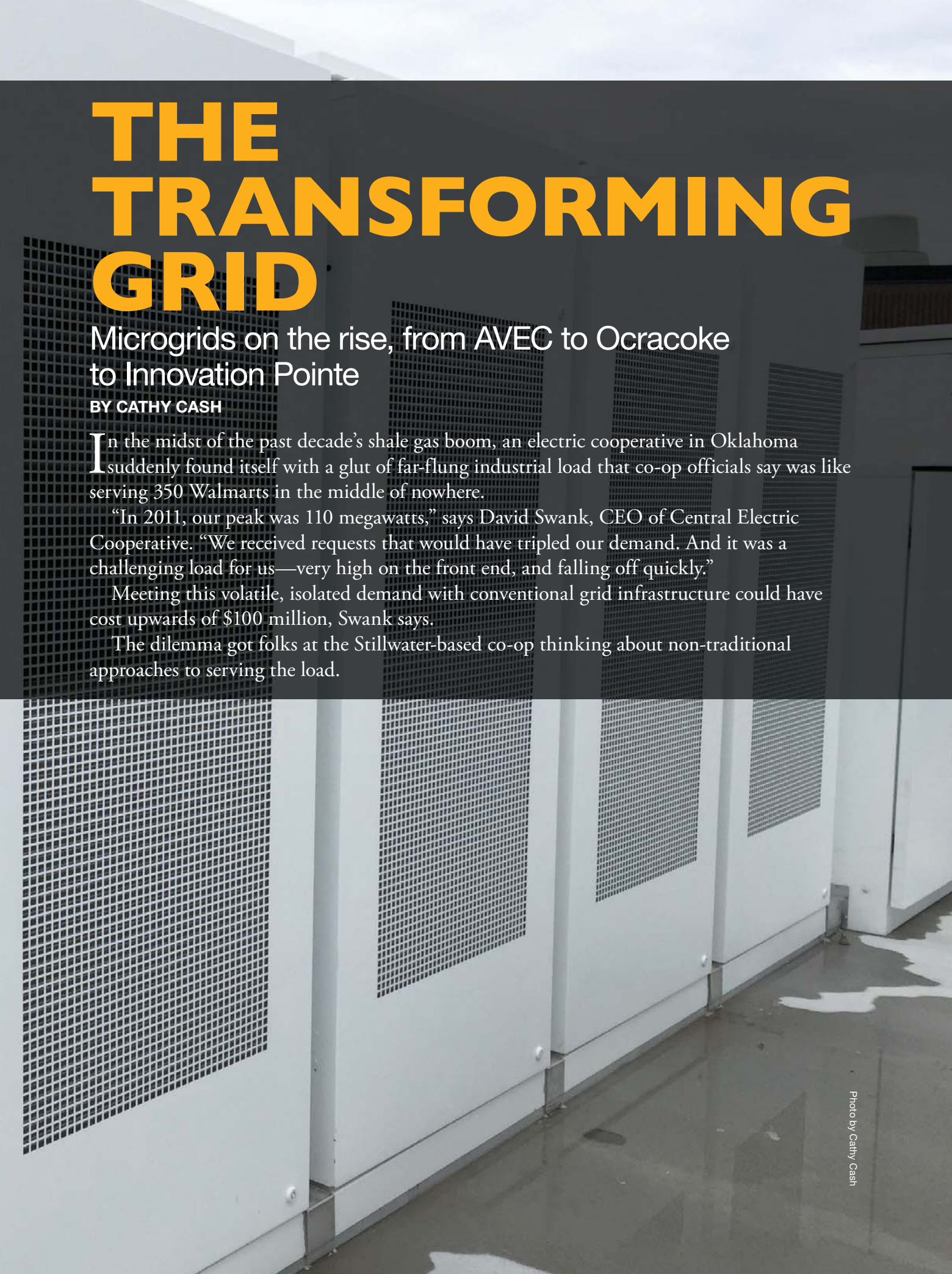


Photo by Cathy Cash

Photo courtesy Central Electric Cooperative

Swank says there were two key outcomes.

One was the development of a custom "capacity integration" engineering model that "cascades" energizing load in tandem with the drop-off rate of other loads. Swank says the innovative solution saved the co-op some $50 million in new capacity infrastructure.

The second was ultimately never built, but would start the co-op on a path to grid rethinking that could one day transform the co-op's entire system.

Swank says Central Electric meticulously designed and engineered an "energy park" microgrid solution for the shale gas region that would have used distributed energy resources, battery storage, demand response, and back-up fossil-fuel generation to meet the load at a fraction of the traditional cost.

The project, which included input from oil and gas producers, a local university, and the Oklahoma Corporation Commission, was halted in late 2014 when fossil fuel prices plummeted. But Central Electric wasn't going to let all that engineering design work go to waste. The co-op's board of trustees agreed to take what they had learned and build "Innovation Pointe," a cutting-edge, micro-grid-powered commercial and residential space surrounding its new headquarters building.

The Innovation Pointe microgrid comprises a solar field, two substations with automatic switching capabilities, battery storage, and backup power generation fueled by diesel and natural gas. Space conditioning will be provided by a common ground-source heat pump loop.

All facilities will be LEED-certified and boast a range of modern amenities, including campus-wide Wi-Fi, leasable electric vehicles, and access to drones, a technology center, and 3-D printing.

Although the microgrid will provide value to the co-op and its membership, Swank says "the most important thing is the ability for us to truly participate in the transformation that is happening in our industry."

Central Electric, the park's first tenant, expects groundbreaking for other business construction will begin in the first quarter of 2018. And the co-op is exploring how similar projects might deliver safe, reliable, affordable power throughout its territory.

MICROGRID PIONEERS

Many consider electric cooperatives to be the pioneers of microgrids.

Most of the larger co-ops today began in the 1930s and '40s as very small, highly localized systems functionally similar to modern microgrids. Over the years,

Photo by Cathy Cash

Lee Ragsdale, NCEMC senior vice president, discusses the Ocracoke microgrid among a rooftop solar array built to withstand winds up to 140 mph.

FERTILE GROUND FOR A MICROGRID

BY CATHY CASH

Tom Butler didn't intend to build a microgrid. He'd originally thought covering the waste lagoons at his nearly 100-year-old family hog farm in Lillington, North Carolina, would help mitigate some of the negative effects the facility may have had on the community.

"We were a little naive about environmental impacts" in the early days, Butler says. "We want to lessen the impact in the future."

Like most hog farms in North Carolina—the nation's fourth-largest hog producer—the Butler operation stores waste from livestock in a lagoon. A population of 7,500 to 8,000 swine creates about 9,000 gallons of waste a day.

Covering the lagoons in 2008 greatly reduced odors from the farm, and Butler could use the captured methane to generate electricity. He consulted with his electric co-op, South River EMC in Dunn, in developing the local generation project.

"We're taking a waste product and making it an asset," he says. "It makes the waste a positive rather than a negative."

Butler's biogas system added 185 kW of generation to the farm on top of 100 kW of capacity from an existing diesel generator. Soon after the biogas project was complete, he installed 20 kW of solar power.

Nearly 10 years later, Butler began working with South River EMC and Raleigh-based North Carolina Electric Membership Corporation (NCEMC; statewide/G&T) to expand the project into something bigger: a functioning microgrid.

NCEMC installed a 250-kW/735-kWh battery system and a microgrid-control system that integrates and manages all components.

During normal conditions or at peak times, the Butler microgrid will feed into the South River EMC system; during an outage, it can power the farm and about 28 neighboring homes for four hours or longer, depending on what generation resources are available onsite. As the system matures, South River EMC will look to expand the impact beyond these homes.

"The Butler Farms microgrid serves as a case study for how agriculture and electric utilities—two of North Carolina's most important industries—can work together to promote sustainability and improve quality of life in rural North Carolina and for electric cooperative members," says John Lemire, director of Transmission Resources for NCEMC.

On-site prep work and testing took place in 2017, and the first phase of the microgrid is set to begin operation early this year.

Photos courtesy North Carolina EMC

(Top) Gas from waste lagoons on Butler Farms in Harnett County, North Carolina, helps power a microgrid that includes biogas, solar, diesel generation, and battery storage. The farm's population of 7,500 to 8,000 swine (bottom photo) yields some 9,000 gallons of hog waste per day.

MAKING ROOM IN THE TOOLBOX FOR NEW TECHNOLOGIES

BY CATHY CASH

It takes a high-tech distribution system to run a microgrid. And it takes a high-tech operations crew to maintain and repair it.

Microgrids and other technology-intense systems are improving reliability, meeting members' needs, and helping control energy costs at electric cooperatives across the country. They're also broadening the skillset of electric lineworkers, making laptops and tablets as common among crew gear as hotsticks and climbing spikes.

"We're still required to climb," says Jonathan Noles, who's been a lineman for 10 years, his last four at Central Electric Cooperative in Stillwater, Oklahoma. But advanced technologies "allow us to problem-solve and troubleshoot no matter where we're at, a substation or at a member's house."

And that's good for safety: "It means not having to climb up there and inspect the line nearly as much."

It's also good for member service. First thing every morning, Noles and his fellow Central Electric linemen use their iPads to check the co-op's advanced metering infrastructure to see which meters have blinked overnight, their locations, and any past problems.

"We can spot a low-voltage issue and resolve it before a member experiences it," he says.

Larry Gordon, a 26-year veteran lineman at Central Electric, knows the value of troubleshooting problems before they impact members.

"The technology is keeping us ahead of everything," he says. "It allows us to be proactive for future problems and prevent outages. We have more impact for our members on a daily basis."

These new grid technologies are even strengthening internal collaboration, especially between operations and engineering, Noles says.

"It makes us communicate a lot better as a co-op," he says. "It's a lot better for everyone."

Noles says his colleagues are generally eager to adopt these new tools.

"Most linemen get into this kind of work because they like a challenge," he says.

And both Noles and Gordon agree that anything that keeps line crews safe and boosts member service is worth adopting.

"Safety and quality of service," Noles says, "are two of the highest priorities we have."

Photo courtesy Central Electric Cooperative

Central Electric Cooperative linemen Larry Gordon (left) and Johnathan Noles say new technologies are improving worker safety and boosting member service.

North Carolina EMC's microgrid campus on Ocracoke Island includes diesel generators, battery storage, and solar generation.

as populations grew, co-ops merged or became interconnected to share resources, strengthen reliability, and boost efficiency.

"When it comes to microgrids, co-ops are ahead of the curve in the power sector," says Tom Lovas, technical liaison and consultant to NRECA. "Remote places are always looking for ways to improve efficiency and reduce costs. The cooperative community is really out in front."

Microgrids are such specialized entities that they defy easy definition, Lovas says. Essentially, a microgrid is a power system that is detached from the main electric grid either full time or for a specific period or event, like an outage. It has a source of generation (fossil fuels, renewables, storage), a means of distribution, and a control platform that manages generation to cost effectively meet load and keep the system stable.

"Every microgrid is custom designed," says Venkat Banunarayanan, associate director for distributed energy at NRECA. "Nothing is off-the-shelf."

ALASKA LEADS

Because of its remote villages and lack of access to a central grid, co-op-rich rural Alaska has been a hotbed of microgrid activity for years.

Alaska Village Electric Cooperative (AVEC) operates 49 rural microgrids with an average load of less than 200 kW, similar to a modest neighborhood in the lower 48. Diesel-fueled generation is the backbone.

"The local microgrid is the only option we have to serve these communities," says Meera Kohler, CEO of Alaska Village Electric Cooperative and NRECA's Alaska director.

A typical AVEC microgrid has three generators for redundancy. The co-op buys and stores a year's worth of fuel for each system because frozen waterways prohibit shipments for more than half the year, and flying in fuel is extremely expensive.

About a dozen of AVEC's microgrids include wind power, and fewer have solar energy installations, Kohler says. None have battery storage because of high construction and replacement costs.

That could change soon, though.

AVEC and nearby Cordova Electric Cooperative are part of a three-year innovation project with the Department of Energy (DOE) and three national labs that aims to bolster the resiliency and cybersecurity of small microgrids in harsh weather conditions. DOE awarded $6.2 million to a project dubbed RADIANCE that will be based in Cordova and will test multiple networked microgrids and energy storage.

"This project is anticipated to make significant advances to microgrid technology applications, from the smallest rural Alaskan utilities to the continental American power grid," says Cordova Electric CEO Clay Koplin.

Kotzebue Electric Association (KEA) in northwest Alaska has been among the most ambitious co-ops in pushing the capabilities of its microgrid. The co-op serves about 3,200 people in the village of Kikiktagruk using a combination of reciprocating diesel gensets, two 900-kW wind turbines, and lithium-ion battery storage rated at 1.2 MW. The co-op's total load is 1.5 to 2.5 MW during summer and 2 to 3.5 MW during winter.

"The battery provides nondiesel spinning reserve to allow us to utilize higher levels of renewable penetration, up to 90 percent," says Matt Bergan, project engineer at Kotzebue Electric.

During periods of high wind, the co-op sends excess wind power to a local hospital to run electric heaters. Since the wind-to-heat system went on-line in December 2016, Maniilaq Health Center has saved more than 25,000 gallons of fuel—about $50,000 a year in savings for the hospital, Bergan says.

"By utilizing wind power and battery reserve, we are aiming to achieve 30 percent fuel savings over the year," he says. "It's during the harshest weather that we get the most wind power, so we like harsh weather. But when it gets too harsh and wind power begins to shut down, our control system can dispatch battery power and additional diesel generation automatically to maintain power for the community."

RURAL MICROGRIDS SHAPE THE FUTURE

"Ocracoke is still a little sleepy town compared to other places," says Byron Miller, a lifelong resident, as he fishes in the surf off the southernmost island of North Carolina's Outer Banks. "There are not a lot of places like it."

Yet this village community of less than 1,000, accessible only by boat or plane and vulnerable year-round to hurricanes and nor'easters, is waking to new energy technologies with a microgrid designed to deliver reliable power and cost savings for members.

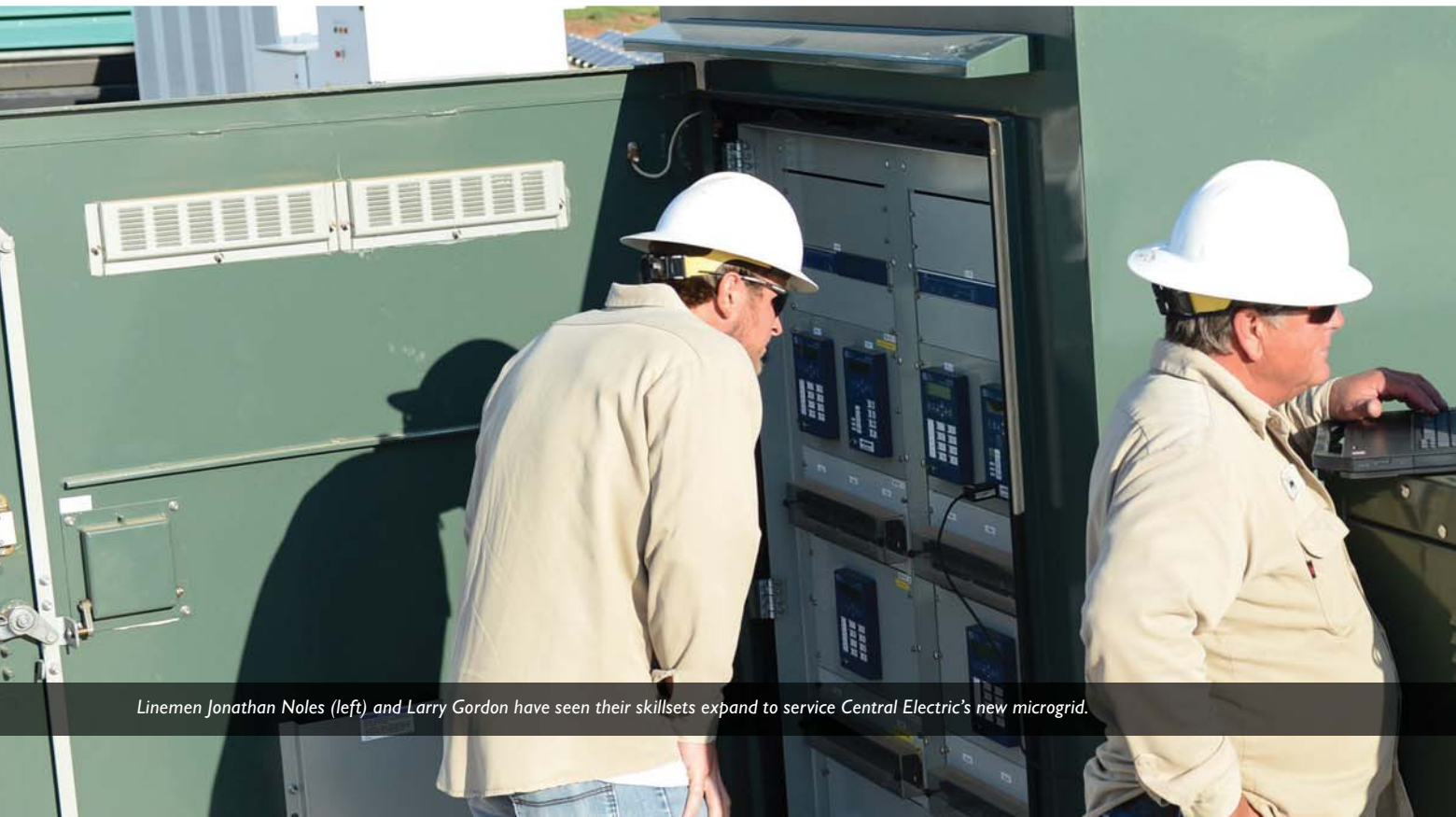
G&T North Carolina Electric Membership Corporation (NCEMC) worked with Tideland EMC, which serves the island, to install the facility in February 2017.

"As cooperatives, we want to be shaping the future as we continue the mission of empowering people," says Lee Ragsdale, NCEMC senior vice president for grid infrastructure and compliance. "We are learning from this microgrid. We hope to replicate these lessons and expand to other areas." [See *Fertile Ground for a Microgrid* sidebar, page 21.]

The microgrid includes a 3-MW diesel generator and 62 rooftop solar panels that have a 17-kW capacity and are built to withstand winds up to 140 mph. Ten cabinets of Tesla batteries sit on a concrete platform built 4-feet high to stay out of the reach of storm surge. Fully charged, the batteries store 1,000 kWh and dispatch up to 500 kW. An inverter takes the DC power from the batteries to AC power for the grid.

The controller is installed on the island but can be operated remotely from NCEMC's headquarters in Raleigh.

The system remains connected to the main grid through transmission fed from the north by Cape Hatteras Electric Cooperative, based in Buxton, North Carolina.



Linemen Jonathan Noles (left) and Larry Gordon have seen their skillsets expand to service Central Electric's new microgrid.

Transmission is submerged under Pamlico Sound from Hatteras Island and then strung overhead on Ocracoke.

The Ocracoke microgrid also offers co-op members a role. Residents and small businesses on the island have acquired 183 Wi-Fi-connected thermostats, and 50 water heater controls have been installed for load curtailment and balance.

NCEMC believes the microgrid will improve electric reliability on the island and reduce costs. It will also allow the co-ops involved to research microgrid operability and test system components for future energy needs.

As a Tideland EMC member who manages several rental properties on Ocracoke, Miller was an early adopter of the connected thermostats and water heater controls. He says he can control heat and air conditioning on his rental properties via his mobile phone, even during a demand-response situation or drastic weather.

He believes more members will sign up for smart thermostats and water heater controls, and he expects island residents to embrace the microgrid as a means of "saving money and helping the island get power back from a surprise situation."

"The Tesla batteries and solar, having that here is pretty cool. Using the batteries to supplement during times of high demand would be good for everybody," he says.

THE ELECTRIC LOAD OF TOMORROW

Back at Central Electric in Oklahoma, the oil and gas industry now makes up about 60 percent of the co-op's total load. CEO Swank says the pressure of having to rapidly add some 300 MW of capacity to supply a frenzied gas exploration boom helped the co-op "be smarter about what the demand is, what load characteristics look like."

"Residential and commercial loads are becoming more disruptive in nature, so whether co-ops explore microgrids or not, they have to become smarter, more analytical, and nimble at the distribution level," he says.

Swank says the Innovation Pointe project goes beyond building the microgrid and energy supply. It's the co-op's first foray into the urban planning concept of "place-making," a model that advocates the creation of self-sustaining communities.

"This campus will serve as a laboratory," he says. "It will be able to be replicated within Central's territory and other locations across the country. We are working with some large master developers and will be making some big announcements in coming months."

He says the ultimate goal is for the park to be able to run off-grid, noting that the trailblazing microgrid successfully "self-healed" during a recent outage.

Swank says Central Electric's high-profile embrace of new technologies and new ideas has required fresh commitments to training lineworkers [see *Making Room in the Toolbox* sidebar, page 22], educating staff and board members, and soliciting and reacting to feedback from consumer-members.

"We as co-ops have to adapt," he says. "The greater challenge is, do we have the capacity within our organization to harness it?" RE

> "[W]hether co-ops explore microgrids or not, they have to become smarter, more analytical, and nimble at the distribution level."
>
> —David Swank, Central Electric CEO

Photo courtesy Central Electric Cooperative

New Braunfels Utilities Thinks Out of the Box When Deploying Milsoft Utility Solutions

After about six years as a manager in the water and wastewater division for New Braunfels Utilities (NBU) in Texas, Trino Pedraza took the position of systems control manager and brought his enthusiasm for thinking creatively about technology to his new division.

At the time of Pedraza's transfer in 2015, NBU had in place a preliminary technology roadmap for the future and a goal to converge the IT and OT functions. Pedraza garnered the financial and personnel resources to expand this technology vision and integrate all of the utility information systems to improve operations and customer services.

> ***"As soon as we fired up the Milsoft system, we achieved what I call an early victory."***
>
> *Trino Pedraza, New Braunfels Utilities*

NBU delivers electric, water, and wastewater services to about 35,000 customers. Leadership empowered Pedraza to improve the dispatch system and invest in advanced metering infrastructure, meter data management, outage management, interactive voice response, and a geographic information system covering all utility services. To begin this effort, he traveled to other utilities to investigate the ways they are using new technologies. Pedraza was particularly impressed by the Milsoft OMS/IVR deployment at Bluebonnet Electric Cooperative.

"NBU had purchased the Milsoft system back in 2006 but was not using all of its features and benefits," Pedraza says. "At Bluebonnet, I saw the Milsoft system in action and returned determined to unlock its efficiencies and improvements for NBU staff and customers."

In partnership with Hometown Connections, the utility services subsidiary of the American Public Power Association, Milsoft Utility Solutions provides electric utilities with powerful engineering, operations, and customer service software. Milsoft's OMS/GIS/IVR and engineering analysis products maximize a utility's ability to give employees and customers fast and accurate information. "Milsoft has long been renowned for the superior performance of its maintenance and technical support team."

Prior to the deployment of the Milsoft system, line crews at NBU spent a lot of time trying to find the specific location of a service call or outage.

"The lack of good GIS information was the root of the problem," Pedraza says. "As soon as we fired up the Milsoft system, we achieved what I call an early victory. Our crews got excited about the location improvements. They volunteered to sit with our team in the control center to fill in data about our service territory on the Milsoft mapping solution."

IVR

As part of its Milsoft deployment, NBU is using the IVR platform for a Texting Outage Notification System. This new service is an added convenience for NBU electric customers that makes reporting outages and receiving outage notifications and updates much easier. All customers with a valid cell phone number in the utility database are automatically entered into the text notification system, with the ability to opt out upon request.

Customers enrolled in the program can text NBU and receive automated text notifications from NBU regarding outages.

Reporting an Outage

In the event of an outage, NBU electric customers enrolled in the Texting Outage Notification program are able to report an outage by text.

Checking the Status of an Outage

Once an outage is occurring, customers are able to text #Status, and NBU's notification system will respond with the current status of the outage at the customer's location.

Notification of Outage

NBU is able to notify the customer that there is an existing outage at their location if it has been reported by another customer. In the event of an outage detected at a location, NBU will text the customer to notify them.

Notification of Restored Services

Whether the customer reported the outage or received notification of the outage from NBU, the customer will receive a final text when the outage has been restored.

In addition, NBU uses the Milsoft IVR system to send text messages or calls to customers with delinquent payment/service disconnect notices.

According to Pedraza, very few NBU customers have opted out of the notification system.

Customers may go online to see the Electric Outage Viewer, which displays the NBU system map with outage information.

Recently, NBU switched from the Milsoft IVR system that is installed on-site at the utility to Milsoft's Hosted IVR solution. By moving to this cloud-based IVR system, NBU is no longer limited by the number of phone lines in the system. Because the hosted IVR allocates phone capacity on demand as needed, busy signals are a problem of the past.

"Everyone today is talking about the 'Internet of Things,' Pedraza notes. "But I prefer to talk about the 'Integration of Everything.' Our integrated information systems enable my team to think outside of the box, finding creative ways to serve our customers. For example, our MDM collects information on water usage as well as electricity. If the system detects higher-than-normal water usage, we can send a text message to a customer to warn them of a possible water leak."

Pedraza adds, "Our staff wakes up each day excited to go to work, enjoying the freedom to find new ways to use the Milsoft software. The Milsoft staff has been attentive to our needs and readily available for tech support. They share our enthusiasm for developing new applications and finding new ways to better serve our community." ■

For further information about Milsoft Utility Solutions, visit www.milsoft.com

LED WAVE

DOE PREDICTS 100 PERCENT STREET LIGHT CHANGEOVER BY 2030

BY DERRILL HOLLY

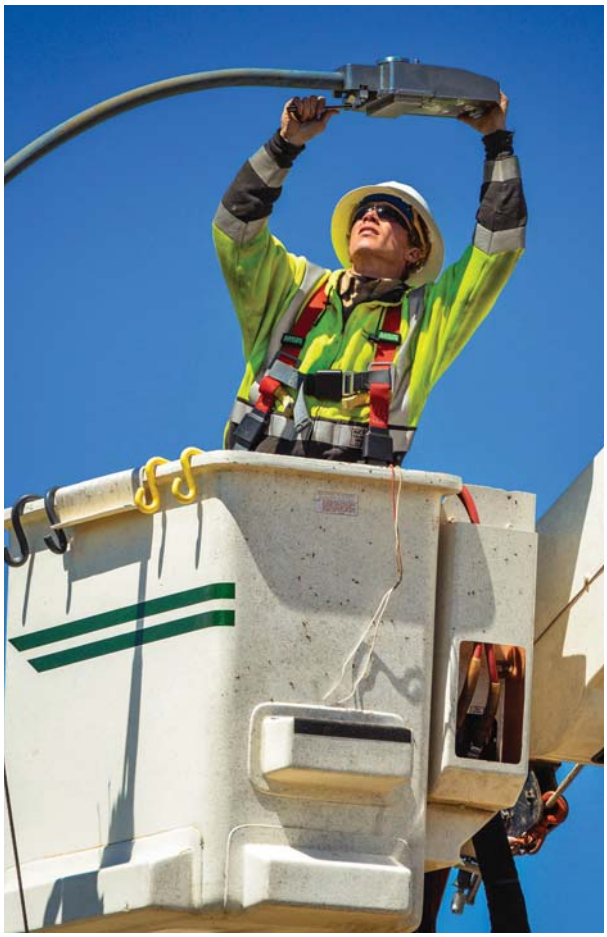


Photo courtesy Lyon-Lincoln Electric Cooperative

Journeyman line technician Daniel Tutt of Lyon-Lincoln Electric Cooperative installs an LED fixture. The Minnesota co-op has completed replacement of all street lighting units in three communities served by its system.

LED lighting for utilities has reached a tipping point. According to the U.S. Department of Energy, more than 3 million LED street lighting fixtures were in use in 2013, representing 14 percent of the total. Today, the number has topped 13 million, or nearly 30 percent, and DOE projects the highly efficient fixtures will account for 100 percent by 2030.

Electric cooperatives, in partnership with NRECA, began field demonstrations of LEDs in 2008. These provided valuable input about LED life, color, brightness, and public opinion, says Brian Sloboda, program and product line manager with NRECA's Business and Technology Strategies unit.

"Over the last decade, we have seen numerous co-ops adopt LED technology as a way to save energy, reduce costs on maintenance, and offer members greater choice in lighting design," he says.

Early co-op adopters began LED switchovers on street and security lighting around 2012, generally timed to five-year inspection and replacement cycles. Primary justifications included lower costs, lower energy use, and darker night skies.

New Hampshire Electric Cooperative launched its LED fixture conversion in early 2012, becoming the first utility in the Granite State to make a formal switch to the technology.

The Plymouth-based co-op completed a four-phase conversion for North Conway Township, which the co-op serves. After receiving complaints that the first 67-watt LED fixtures were too bright, the co-op switched to 42-watt fixtures.

Meanwhile, on the opposite coast, Peninsula Light Company—a distribution co-op in Gig Harbor, Washington—examined products from several manufacturers before selecting a vendor and plotting a course to replace 1,800 high-pressure sodium units in 2015.

"The initial driver was a request from one of the communities we serve to help them reduce energy costs," says Jonathan White, director of marketing and conservation for Peninsula Light, or PenLight. "Additional incentives included reducing service calls and purchased-power costs."

PenLight is filling all new lighting requests with LEDs. Crews began replacing security lights by substation and feeder in early 2016, and key account managers are working with homeowners' associations and developers on volume deployments.

White says the changeouts pay off over time, but they come with upfront costs.

"The annual energy savings for 1,800 high-pressure sodium fixtures is about $15,000," he says, adding that recovering the co-op's costs would take more than 30 years. "If it was simply screwing in an LED, the savings would be great, but mobilizing a bucket truck and lineman—you have easily expensed over $300 including the price of the new fixture."

MORE LIGHT FOR LESS

Some co-ops that provide street lighting in their communities are making the transition to LEDs to provide long-term savings to members who also pay local taxes to support basic services.

"We have replaced all of the street lights in the three communities we serve with LEDs," says Brian Jeremiason, manager of marketing and external relations at Lyon-Lincoln Electric Cooperative in Tyler, Minnesota. "Our deployment has been well-received. We've expanded the project and are now offering the LEDs as yard lights for members at a discount."

Reduced service calls, longer product life, and energy savings have driven the transition at Lyon-Lincoln. While the co-op still offers high-pressure sodium and metal halide bulbs for its existing fixtures, only LEDs are available to new signups, Jeremiason says.

Co-ops offering LED security fixtures say members appreciate the lower monthly energy costs, the brighter white light at ground level, and the overall reduction of ambient light beyond targeted areas.

Okanogan County Electric Cooperative in Winthrop, Washington, completed conversion of 100 street and yard lights in early 2014, opening up the night sky over its service territory in the Cascade Mountains.

"We've dramatically reduced light pollution by using dark-sky-compliant LED lighting fixtures," says David Gottula, general manager of the co-op. Bonneville Power Administration, the co-op's power supplier, picked up most of the costs of the fixtures under an energy conservation program.

Okanogan County Electric anticipated lower maintenance costs and energy use, which will result in lower rates for the lights.

"We have had one failure in three years," Gottula says, adding that shelves once loaded with various spare lighting components have been replaced with just a couple of fixtures.

Okanogan County Electric's street and security energy use has declined by 78 percent. The co-op also sells the fixtures to members at a small markup and installs them at cost.

Reduced costs and operational efficiencies were also an attraction for High West Energy, based in Pine Bluffs, Wyoming. The co-op had to meet the needs of the Department of Defense on an LED conversion at Wyoming's F.E. Warren Air Force Base (WAFB), and the project included six fixture designs across the sprawling base.

"We made the change in 2013 and 2014 to lower maintenance costs," says Marv Powell, the co-op's safety director and WAFB operations manager. "We've replaced all 1,500 fixtures, and power consumption for street and security lighting is down 50 to 70 percent. The maintenance on these fixtures went down 25 percent upon completion of the project."

G&T INCENTIVES

Jackson County REMC in Brownstown, Indiana, is working with its power supplier, Hoosier Energy, to replace all 100-watt high-pressure sodium fixtures in its service territory.

Nearly 2,000 of the 6,800 active sodium fixtures on the co-op's lines have already been replaced with help from incentive payments from the G&T.

"Members like the 'white' light versus the 'orange' light," says Mark McKinney, general manager of Jackson County REMC. "We have received very few negative comments, but several positive ones."

All of Hoosier Energy's member distribution co-ops are participating in the G&T's incentive program to hasten the switch to LEDs. The rebates are available only on fixtures and lighting systems certified under the nonprofit DesignLights Consortium product list.

Singing River Electric Power Association (EPA) of Lucedale, Mississippi, began replacing 15,000 fixtures in 2016.

"At this time, 100 percent of our new-residence outdoor lighting installations are LED," says Brian Hughey, CEO and general manager of Singing River EPA. "As of December 2017, Singing River has installed over 4,700 LED lights in the system."

The co-op is now moving ahead with its roadway and directional lighting LED deployments, Hughey says. "We have found that most members prefer the new LED outdoor light compared to the old style high-pressure sodium fixtures."

Kaua'i Island Utility Cooperative in Lihue, Hawaii, completed the replacement of 3,500 fixtures owned by Kaua'i County and the state in early 2016, says Beth Tokioka, the co-op's communications manager. "The street light conversion is expected to save the county about $500,000 annually on power use for its 2,900 street lights."

Acceptance of the technology extends well beyond street and security lighting as new and better products are introduced. The future of LED lighting is even brighter as the technology has improved, with long life, more colors, and more controllability options, NRECA's Sloboda says.

"LEDs have been used in applications to improve quality of life, facility security, animal productivity, and workplace comfort," Sloboda says. "LEDs are expected to see incremental improvement in the future. But today's products are effective." RE

JANUARY 2018 PHOTO CHALLENGE WINNERS

Congratulations to Judy Murphy for taking *both* top spots in the January "Winter Wonderland" photo contest. Her photo "Adirondack Winter Scene" was the winner and "Dashing Through the Snow" (right) was runner-up.

Adirondack Winter Scene

The Adirondack Loj Road in Lake Placid, New York, offers a snowy view of the High Peaks Wilderness Area (Macintyre Range & Indian Pass).

Photo by Judy Murphy

The contest themes for 2018 are:

- **March:** Drones
- **April:** April Fool (Co-op Humor)
- **May:** Tailgate Talks
- **June:** Water

Visit REmagazine.coop to see all the photos, read the contest rules, Like your favorite shots, or enter some images of your own.

Dashing Through the Snow

Passengers bundle up against frigid Upstate New York temperatures during a sleigh ride in Lake Placid's John Brown Farm State Historic Site.

Photo by Judy Murphy

'INTO THE STORM'

WORKER LOCATION APP TEST PAYS OFF BIG FOR HURRICANE-HIT GEORGIA CO-OP

BY JOHN VANVIG

Georgia Gov. Nathan Deal issued a mandatory evacuation order for 30 southeastern counties and prepared to mobilize 5,000 National Guard troops as Hurricane Irma bore down on the state in September. Roads were jammed, motels from Florida to the Carolinas were packed, and thousands of residents were fleeing the storm.

But as they were frantically trying to get out of the danger zone, Doug Lambert was racing to get in. And he wasn't alone. About a day behind him, a fleet of co-op and other electric utility trucks descended on Georgia to prepare for the inevitable outage recovery effort.

As director of technical solutions for technology services cooperative NRTC, Lambert was on his way to Excelsior Electric Membership Corporation in Metter, Georgia, where he planned to demonstrate Clevest's Automated Worker Location (AWL) application under the most demanding of real-world conditions: About 150 mutual-aid lineworkers and other help would join the co-op's 51 employees in an all-hands-on-deck campaign to restore power. After Irma's 50-mph gusts, drenching rains, and surging floods had moved on, more than 18,000 meters—80 percent of the co-op's nearly 23,000 accounts—were out of service.

"We were forecast to start experiencing high winds on Sunday, and Doug showed up on Saturday," recalls Greg Proctor, Excelsior EMC's president/CEO. "He drove down here through all that traffic and all that nonsense, when everybody else was trying to get out ahead of the storm."

Lambert had hoped to conduct his field test under fire just a couple of weeks earlier, when Hurricane Harvey walloped Texas. But like almost everyone else, NRTC and Clevest, one of NRTC's vendor partners, were caught off guard by Harvey's harsh arrival.

In the brief interlude between the massive storms, Lambert emailed co-ops in Florida and Georgia, looking for volunteers to conduct a real-time, real-world demonstration of the AWL app.

"The first one to respond was Excelsior," Lambert recalls. He packed up and headed out from Wake Electric Membership Corporation in Youngsville, North Carolina, where the co-op provides him an office.

DANGEROUS COMPLICATIONS

Sprawling, systemwide outages, like the one Excelsior EMC suffered after Irma, bring in dozens or even hundreds of mutual-aid line workers. The outside help is not only welcome, it's essential.

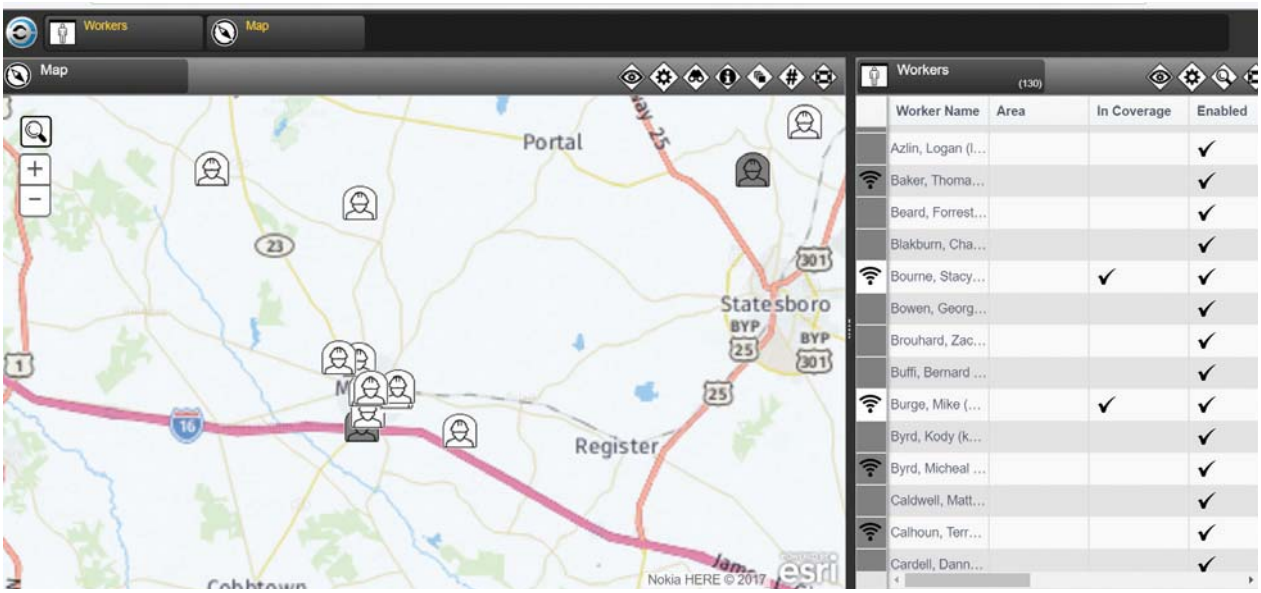


Photo courtesy Excelsior EMC

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Photo courtesy Doug Lambert

Doug Lambert, NRTC

But the vast numbers of field crew members who don't know the territory can result in dangerous complications. Keeping track of which lines are energized and which still need work, sending crews to the right spots, and simply knowing who's doing what and where are among the tasks that bury dispatchers as recovery work starts.

A system capable of telling those dispatchers precisely where each crew member is at all times would ease the pressure, Lambert and Proctor agreed. Lambert used the Clevest system to send email invitations to each of the mutual-aid workers, some from as far away as Oklahoma and Virginia, who showed up outside Excelsior EMC's headquarters the day before Irma arrived. The invitation included a link to download the AWL app from the Apple iTunes or Google Play stores. Once logged into the app, the mutual-aid crews appeared on Excelsior's outage map in real time.

Proctor and Bill Walden, the co-op's manager of data & technical services, admit they were a bit uneasy about plugging in an untried system in the middle of a major restoration campaign.

"We didn't want to create any more problems than we already had," Proctor says.

But they knew that Lambert had handled dispatch, communications, SCADA, and other tech operations at a Texas co-op before he moved to NRECA and, about two years ago, to NRTC. What's more, he'd worked with the Georgia co-op on previous projects. Lambert's promise that his AWL project wouldn't jeopardize the co-op's outage management system (OMS) was good enough for them.

"When Doug called us, he assured us we could turn the AWL app on and off, so we wouldn't have to worry about it crashing our OMS," Walden says. "And with crews coming in from out of state, it would help. We could give them some direction on where they were and where they needed to go. It would give us some more measure of safety."

MULTISPEAK ADVANTAGE

Lambert met each of the incoming mutual-aid crews as they arrived, and while they were being briefed by Proctor and his team, he linked the workers' phones and tablets to the AWL system he'd downloaded into the co-op's network a day earlier. The "commissioning" process took just three minutes, Lambert says.

Clevest's AWL uses MultiSpeak®, the software interoperability standard NRECA researchers pioneered some two decades ago, to integrate with co-op systems and individual devices, so that step was quick and efficient.

The app itself is simple to understand and operate, Lambert says, so dispatchers and crew members didn't require a lot of training.

"In a situation like this, they don't have the time to train up on something new and complicated," Lambert says. "We weren't asking their dispatchers or crews to learn anything new."

As the crews headed out, Lambert figured out a way to color code each truck to help dispatchers keep track of who was where along Excelsior EMC's 3,320 miles of line. "That way," he says, "if there's a pink truck driving into an area where the blue trucks are working, you can see that that guy may not know where he's going."

'ALWAYS SAFETY'

Proctor and Walden were impressed with the way the AWL app worked, and they appreciated the edge it gave them in safety and operational efficiency during the Irma crisis.

Now that the lights are back on, they're debating whether to keep the AWL function running.

"We turned it off," Proctor says, adding that he sees some parallels with automatic vehicle location (AVL). "AVL has been available for years now, but we've never adopted it. Not that we're against it, but we've just never seen a huge need for it. Our people know our system, so these kinds of things aren't really needed day to day. I can see us using it at some point in the future, but we just haven't gotten there yet."

Lambert understands that position, but he also points to the dramatic benefits an AWL ability brings, especially in the event of widespread outages requiring lots of outside help, and he says several other co-ops are using the AWL app.

"Ultimately, above everything else, it's always safety," he says. "If we can enhance that by providing a higher level of visibility to crews, then we have potentially saved lives. Getting the lights on quicker is a byproduct of that, because you will also be operating more efficiently.

"It did help them in the restoration process. It's a cool technology." RE

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‘A BIG HELP’

GRAYSON REC’S EASTON LENDS HIS EXPERTISE TO TRAINING THE NEXT GENERATION OF LINEWORKERS

BY JOHN VANVIG

Photo by Julie Rhea Lewis

Grayson Rural Electric Maintenance Leadman Richard Easton

Kentucky’s Maysville Community & Technical College launched a lineman training program at its Rowan County campus less than three years ago, and it’s been going strong ever since.

That’s thanks in no small part to Richard Easton, a maintenance leadman in the Rowan and Elliot County areas of Grayson Rural Electric Cooperative Corporation’s service area. Easton worked in hot line construction for four years before joining the Grayson, Kentucky-based cooperative as a construction lead 27 years ago.

With the typically casual lineman’s shrug, Easton downplays his work with the young linemen at the training school.

“When I have some free time, I stop by. I’ll show them some techniques,” he says.

But Easton’s contributions go well beyond that, according to Mark Lambert, the college’s lineman program coordinator.

“Richard’s a big help to us,” Lambert says, especially when it comes to introducing new students to what might be called the philosophy of line work and the work ethic of the line crew.

“He’ll tell them that you’re part of a four-man crew, and if you’re late or you call in sick and miss a day, that puts a strain on the rest of your crew, and you’re not going to last long.”

A dozen or so students usually sign up for the nine-week training program, and most of them are in their late teens or early 20s. Easton, who’s 55, says he provides a little motivation early on.

“Especially when they first start, I’ll show them how to climb a pole, and I’ll climb with them,” he says. “And I’m a lot older than them, so when a 50-something-year-old man straps the hooks on, they figure if that old man can do it, maybe I can do this kind of work too. It gives them some incentive.”

WEEDING OUT THE FAINT OF HEART

Easton was about the same age as the students he now guides when he started working on electric lines. He’d grown up on a farm, one served by what’s now Fleming-Mason Energy Cooperative in Flemingsburg, Kentucky, and was considering his options when a line-construction contractor asked him if he wanted a job.

Photo by Brandy Esham

Grayson Electric Co-op donated and installed five poles for the Maysville Community and Technical College's lineman training program.

"The guy comes to me, and he says, 'I'm needing someone to drive a digger truck and haul poles. What experience do you have?' Well, on the farm, you drive trucks a lot, so he took me on. Then I decided I wanted to be a lineman, so I started putting on hooks. And within a year, I was up in the bucket doing hot work."

Power line training programs were not an option in those long-ago days, Easton recalls. "Just on-the-job training."

Programs like the one Maysville Community & Technical College opened in 2015 provide a valuable service, he adds, both to the students and the utilities ready to employ them.

"Before, when the co-op hired a new lineman, it was a year before you could tell if they could actually climb poles or not," Easton says. "He worked on the ground, and then when he'd been there all that time, if he found he was scared of heights, it was too late. You'd invested all this time, and you find out he can't do this kind of work."

Lambert's line training program at the school's Rowan Campus in Morehead, Kentucky, boasts a field of poles standing as a challenge to its new students. And Lambert makes sure to weed out the faint of heart early on.

"The second day of school, I put our boys up 40 feet in the air," he says. "So you've got two days to decide whether you want to be a lineman or not. We don't waste a second down here."

Those who wash out of the climbing challenge can focus on getting their commercial driver's license through the program, rerouting their career plans into equipment operation or nonclimbing line technicians, he says. "But boy, most of them can climb like squirrels."

As for those practice poles, Easton and Grayson Rural Electric had a hand in them too.

"They came down and set five poles they donated for us," Lambert says. "They've gone above and beyond."

The co-op and its maintenance lineman aren't the only ones who have helped out, he adds. Investor-owned utilities, municipal systems, and contractors have donated materials and staff time. When the owner of a contracting company retired and closed his business recently, Lambert says, he donated a trailer full of equipment and materials.

"I've got a building down here, and that sucker is completely full," he says. "I've probably got over $100,000 in hotsticks, insulators, transformers, you name it. I couldn't ask for more support."

FROM FOOTBALL FIELD TO LINE CREW

Lambert's program may be less than 3 years old, but the roots of the professional collaboration underlying it go back nearly four decades. He and Easton, along with some of the other linemen who stop by to train and motivate the students, were high school classmates who played side by side on the school's football team.

"From when I played football with these boys, it's just been so much help to me," Lambert says. "Everybody asks me, 'How long were you a lineman?' Well, I've never been a lineman. I just played football with guys who are."

He appreciates his friends making the time to help his students.

"Of course Richard's busy," Lambert says. "But he tries to come over every week or so, and he always comes to the rodeo at the end of the class."

It's a source of satisfaction for Easton, who remembers what he said when the school was just getting started.

"Mark just called me one day and asked, 'How do you think a lineman's school would go?' I said it'd be a very good thing." RE

Know someone RE Magazine *could profile for our "Front Lines" column? We're looking for co-op operations and member services staffers, from meter readers to lineworkers to engineers, who make things work at electric co-ops nationwide. Contact us at remag@nreca.coop, or you can reach writer John Vanvig directly at johnlvanvig@yahoo.com or 360-624-4595.*

BY TODD H. CUNNINGHAM

NEW SOLAR FARM ON-LINE FOR KENTUCKY CO-OPS

Members of Kentucky's Touchstone Energy® Cooperatives asked for additional clean, renewable energy options, and the co-ops have obliged with completion of Cooperative Solar Farm One.

The facility, made up of more than 32,000 solar panels on a 60-acre site at the Winchester headquarters of G&T East Kentucky Power Cooperative (EKPC), is the state's largest community solar site with a capacity of up to 8.5 MW.

Photo courtesy East Kentucky Power Cooperative Solar Farm One

EKPC's 16 distribution co-ops will license the solar panels to members for 25 years for a one-time payment of $460 per panel. The members will receive monthly bill credits for their share of the energy produced.

"For electric co-op members who are interested in harnessing renewable energy for their home or business, Cooperative Solar is the easy, affordable option," says Anthony "Tony" Campbell, East Kentucky Power president and CEO.

The co-op used federal Clean Renewable Energy Bonds (CREBs) to finance the project, and Lendlease Energy Development acted as EKPC's in-house developer and construction manager.

"This project will provide innovative new renewable energy options to over 1 million Kentucky residents," says Craig Carson, GM of Lendlease Energy Development, which is part of Australia-based international property and infrastructure group Lendlease (NRECA Associate Member; **lendlease.com**).

Contact: East Kentucky Power Cooperative, Nick Comer, 859-745-9450; Lendlease, John DeLibero, 212-592-6895.

KAUA'I ISLAND CO-OP MOVES CLOSER TO GREEN GOAL

Kaua'i Island Utility Cooperative (KIUC) is moving closer to its goal of reaching 70 percent renewable energy by 2030 after signing a lease with the Navy for development of a 19.3-MW solar facility in conjunction with a 70-MWh battery energy storage system.

The facility, to be located at the Barking Sands missile range, will provide renewable energy after sunset to help meet co-op members' electricity needs during peak use hours. It will also have the capability of directly supporting the Navy installation's mission-critical activities in the event of a short-term or extended grid outage.

The co-op has selected AES Distributed Energy (NRECA Associate Member; **aesdistributedenergy.com**) to build and operate the facility. The company will assume the bulk of the project costs and sell the energy produced to KIUC under a 25-year agreement. Co-op President and CEO David Bissell notes this will displace 2.8 million gallons of diesel annually, adding that the pact's cost of 10.85 cents per kWh, well below the current cost of diesel, will exert downward pressure on rates.

Construction on the project is expected to begin late this year.

Contact: Kaua'i Island Utility Cooperative, Beth Tokioka, 808-246-4348; AES Distributed Energy, Brandi Davis-Handy, 317-261-8423.

Photo courtesy Kaua'i Island Utility Cooperative KIUC solar project at Barking Sands missile range

CONGRATULATIONS TO EAST KENTUCKY POWER COOPERATIVE FOR COMPLETING COOPERATIVE SOLAR ONE

Lendlease is proud to have developed and constructed EKPC's innovative 8.5 MW solar farm, an important step toward a diverse energy future.

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TEXAS CO-OP MAKES RAPID POST-HARVEY RECOVERY

When Hurricane Harvey hit the Texas Gulf Coast in late August, the Category 4 storm, with winds as high as 130 mph, cut the power to 45 percent of Nueces Electric Cooperative's (NEC) members, leaving 8,200 homes and businesses in the dark.

But less than 48 hours later, co-op crews had restored power to every member, including those who had evacuated and were not around to report an outage. Corpus Christi-based NEC attributes the response to its FlexNet communication system from Sensus (NRECA Associate Member; **sensus.com**), which securely transmits and receives customer use data on a private, storm-hardened network.

"The system sent us timely and accurate outage information so we were able to send our crews to the exact trouble spot and restore customer service efficiently," says Sergey Seryogin, NEC IT director.

Contact: Nueces Electric Cooperative, Sergey Seryogin, 361-387-2581; Sensus, Linda Palmer, 919-845-4021.

UNITED FIBER TURNS TO NISC FOR BROADBAND FIX

United Electric Cooperative's United Fiber subsidiary has experienced tremendous growth since its 2011 debut. But the fiber unit found early on that, in the words of COO David Girvan, "we didn't know what we didn't know .... We had a few issues that we never expected to have."

Seeking a unified approach to managing customer interactions between the electric and broadband sides, United Fiber turned to the National Information Solutions Cooperative (NRECA Service Member; **nisc.coop**). It became the first member to launch NISC's iVUE Connect Service with broadband functionality, enabling it to add new broadband services quickly and easily.

David Bonnett, NISC vice president of product management, says the cloud-based functionality offers greater flexibility and an improved user experience, allowing broadband providers more efficiencies in serving customers by finding information in a web-based, user-friendly environment.

"To be able to successfully deploy broadband in our service area not only represents economic development for our community, but an enhanced quality of life for our members," says United Electric CEO Jim Bagley. "Being able to partner with NISC and utilize an enterprise, cloud-based solution has made this leap manageable."

Contact: United Fiber, David Girvan, 800-585-6454; NISC, David Bonnett or Jasper Schneider, 866-999-6472.

ARKANSAS CO-OPS HELP PHONE COMPANY DIAL 'S' FOR SOLAR

An Arkansas telephone company has put the "long" in long distance by partnering with its electric co-op and a co-op subsidiary to obtain all its power from the sun. Under the arrangement, Ouachita Electric Cooperative member South Arkansas Telephone Company (SATCO) will receive its power from a 120-kW solar array engineered and installed by Today's Power Inc. (TPI, **todayspower.com**).

According to TPI, a subsidiary of the Electric Cooperatives of Arkansas (statewide), the array consists of a fixed racking system and 400 325-watt panels, which will produce about 482,500 kWh over its 25-year lifespan. The savings in SATCO's electricity expenses will allow the communications company to invest in additional fiber in Arkansas Rural Internet Service (ARIS), its joint initiative with Ouachita.

Contact: Ouachita Electric Cooperative, Mark Cayce, 877-252-4538; Today's Power, Jennah Denney, 501-400-5548; South Arkansas Telephone Company, Mark Lundy, 870-798-2201. **RE**

Send "Project Profiles" entries to Todd Cunningham at tcunningham03@comcast.net or 703-567-8122.

Photo courtesy Today's Power

Ouachita Electric Co-op member SATCO will receive power from a new 120-kW solar array built by Today's Power Inc.

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Contact: Salisbury by Honeywell, Bolingbrook, Illinois, 877-406-4501; cristy.bentley@honeywell.com; salisburybyhoneywell.com.

SHERMAN + REILLY

FOUR-DRUM TURRET PILOT LINE WINDER

Sherman + Reilly has released its new power line stringing and installation *PLW-200X* four-drum turret pilot line winder. The new unit provides an ergonomic operator's station, 360-degree turret rotation, braking system with electric over hydraulic activation, and a galvanized finish option. Equipped with real-time self-diagnostics and electronic machine control CAN-bus technology, the operator can access all major controls from the seated operator station. The braking system allows for controlled articulation of braking pressure distributed to each of the pilot line drums.

Contact: Sherman + Reilly Inc., Chattanooga, Tennessee, 423-756-5300; marketing@sherman-reilly.com.

LOAD PICK-UP/BREAK SWITCH

Hastings, a worldwide manufacturer of hot line tools and equipment, is introducing new *load pick-up/break switch products in single- and three-phase versions*. The break switches allow a lineman to install a temporary switch anywhere on a system. With a vacuum bottle design featuring high-grade silicone rubber and marine-grade aluminum, they can be used in any weather. The battery-operated break switches can be controlled manually using the one-touch button function or wirelessly with a Siemens Connect USB Antenna. The battery modules are removable, allowing for easy replacement.

Contact: Hastings, Hastings, Michigan, 269-945-9541; jbaum@hfgp.com; hfgp.com.

LUNCHTIME TOOL

Milwaukee Tool is introducing a new *Jobsite Cooler* designed to withstand on-the-job conditions. With twice the insulation of similar coolers, it holds ice for 24 hours. It's sized to accommodate ice, frozen water bottles, or cooling packs and has multiple pockets, separate from the main compartment, to hold personal items and supplies. A tech pocket on the front of the cooler is ideal for tablets, cellphones, time sheets, and more. A dry storage compartment keeps food cool and dry. At 11-by-14.9-by-13.8 inches, it's tall enough to hold 32-ounce drinks, and a tape measure clip doubles as a bottle opener.

Contact: Milwaukee Tool, Brookfield, Wisconsin, 262-790-6655; heather.markovich@milwaukeetool.com; milwaukeetool.com.

NEW DEMAND-REDUCTION THERMOSTAT

The **NRTC** is adding Nest Labs' new *Thermostat E* to its distribution agreement with the company. NRTC member co-ops can enhance demand management services through the Nest Rush Hour Rewards (RHR) program, which allows electricity users to adjust thermostat settings automatically during peak demand hours, saving money and maintaining comfort in the home. The new thermostat turns off automatically when it senses that nobody is home and interacts with RHR to ensure the user does not pay for energy at the highest rates. Users can control the thermostat remotely through smartphones.

Contact: National Rural Telecommunications Cooperative, Herndon, Virginia, 703-787-7288; cmartin@nrtc.coop; nrtc.coop.

MILSOFT CREATES NEW USER FORUM

Milsoft Utility Solutions created a *new user forum* with five sections: engineering, outage management, geographic information systems, communications/IVR, and a general non-product section. Within each forum, the topic section contains three subsections: announcements, general topics, and tips and tricks. To qualify for the user forum, you need a valid email in Milsoft's system, and your utility must have an active support contract in at least one of the Milsoft products you own. The forum can't be used to solicit support directly from Milsoft.

Contact: Milsoft Utility Solutions, Abilene, Texas, 800-344-5647; info@milsoft.com; milsoft.com.

MOBILE SAFETY, TRAINING, AND COMMUNICATIONS

VEROCOMM Network's *Mobile Management System* offers a cloud-based platform with an iOS and Android mobile app that helps utilities reach and teach their workforce anywhere. The flexible mobile training platform delivers videos, documents, and communications directly to smartphones and tablets for instant communications and training, with the ability to set deadlines, verify and track content viewing, and manage compliance with an e-signature function for reporting and records management. The secure system is ideal when communicating sensitive information that cannot be downloaded from the app.

Contact: VEROCOMM Networks, Scottsdale, Arizona, 888-382-2587; info@verocomm.com; verocomm.com.

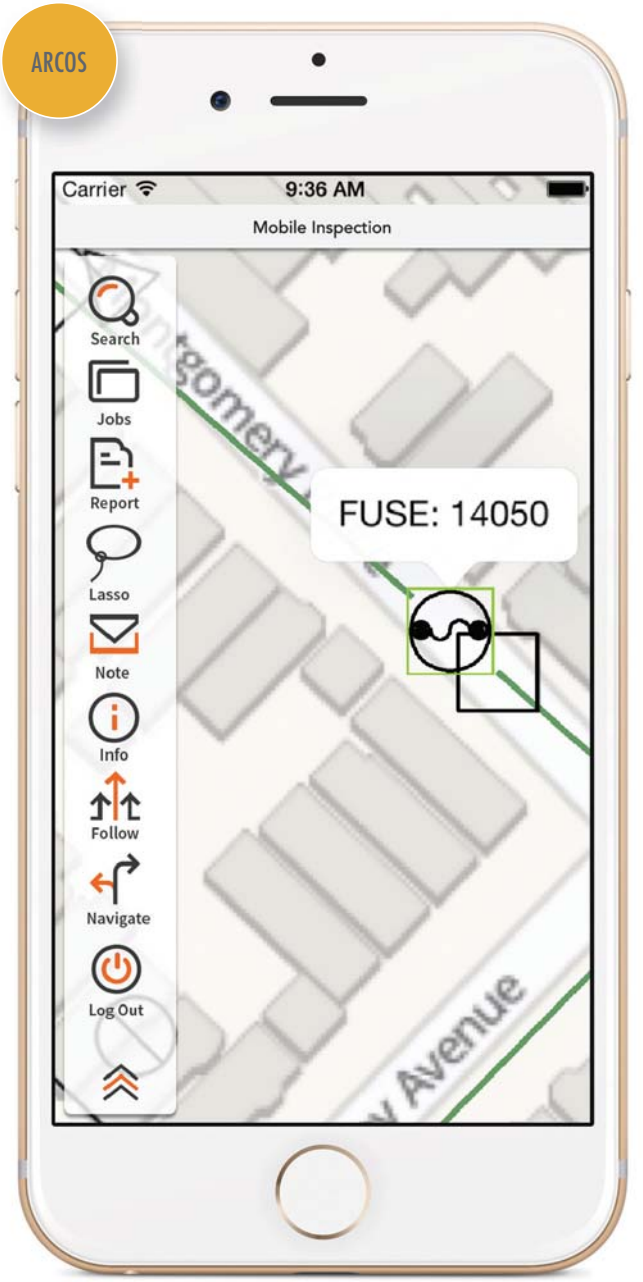
VEROCOMM

MOBILE INSPECTION

The new **ARCOS** *Mobile Inspection* solution assesses infrastructure like substations or gas lines in hours instead of days. With a utility's geographic information system and the mobile location services on any smartphone, tablet, or laptop, inspectors can report and transmit inspection data to managers. When inspectors note a repair, they use the app to create a new job, tag the location, and send it to a work management system. Repairs can also be prioritized based on customers affected.

Contact: ARCOS LLC, Columbus, Ohio, 614-396-5500; sales@arcos-inc.com; arcos-inc.com.

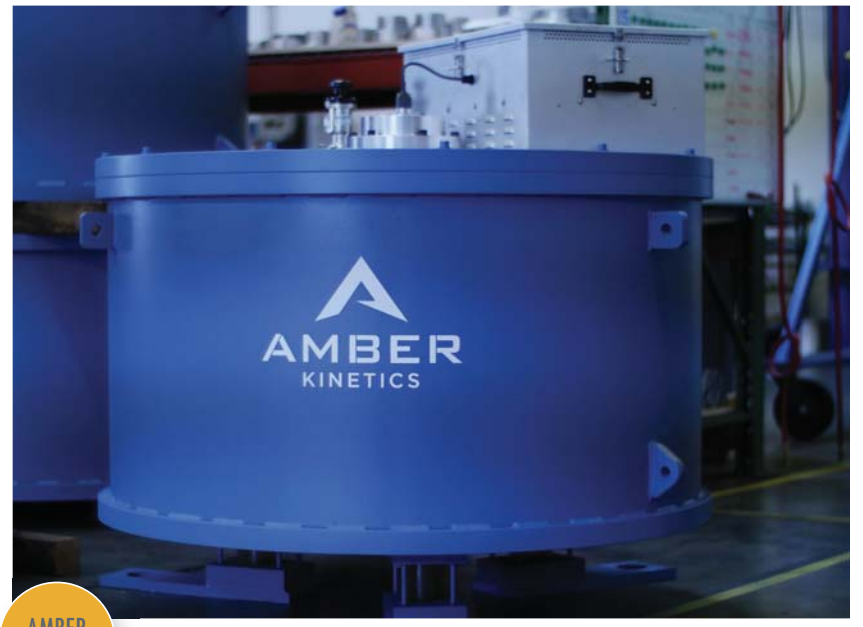
ARCOS



SPINNING ENERGY STORAGE

Without utility-scale storage, solar, wind, and other green energy resources may never reach their full potential. **Amber Kinetics** says its *M32 long-duration all-steel flywheel* has advantages over battery and conventional peaking resources for demand reduction, energy arbitrage, renewable energy firming, and frequency regulation on a grid- and micro-grid scale. Flywheels store kinetic energy as they rotate, energy that can be released later when it is needed. They charge and discharge like batteries, but mechanically instead of chemically. The flywheels have a 30-year-plus life, incur no capacity degradation, have unlimited daily cycling capability, and have zero-dollar variable operations and maintenance for 24/7 operation.

Contact: Amber Kinetics, Union City, California, 510-474-1000; info@amberkinetics.com; amberkinetics.com.



AMBER KINETICS

THREE-PHASE POWER QUALITY LOGGERS

Fluke Corporation is simplifying the collecting and reporting of critical utility power quality trends with its new *Fluke 1740 Series Power Quality Loggers*. The units use software that automates setup, analysis, and reporting. The 1740 series is fully compliant with the international power quality standard IEC 61000-4-30 and meet Class A requirements. They are capable of simultaneously logging more than 500 parameters for each averaging period.

Contact: Fluke Corporation, Everett, Washington, 800-443-5853; fluke-info@fluke.com; fluke.com. RE

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EXECUTIVE VICE PRESIDENT AND GENERAL MANAGER

The Board of Directors for Central Florida Electric Cooperative (CFEC) is seeking qualified candidates for the position of Executive Vice President and General Manager. In existence since 1939, CFEC has 91 employees and over 35,600 active services in six counties in north central Florida. CFEC currently serves Dixie, Gilchrist, Levy, and portions of Alachua, Lafayette, and Marion Counties. CFEC is a participant in various community events. Our mission is to be the finest example of an electric cooperative where excellent service, competitive rates, and concern for the consumer, community, and environment guide our every action. The successful candidate will have a Bachelor's degree or higher degree in engineering, business, accounting, or other related fields from an accredited college or university and ten years of related and progressively more responsible experience with an electric cooperative or electric utility. The successful candidate will also manage and oversee all aspects of the cooperative and meet the goals established by the Board of Directors. Candidates should have excellent verbal and written communication skills, the ability to build a relationship with the Board, and possess the integrity to build strong member relations. The General Manager is required to live within the cooperative's service area and maintain a valid Florida driver's license. CFEC is an Equal Employment Opportunity Employer and offers a package of competitive benefits, salary, and retirement. Interested applicants should forward a cover letter, resume, salary history, and three professional references by April 2, 2018 to hr@cfec.com.

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NATIONAL

MULTISPEAK PIONEER RETIRES

Luis Malave, who worked closely with NRECA's **Gary McNaughton** and other co-op experts to develop the earliest versions of the MultiSpeak® interoperability standard that transformed utility digital operations worldwide, has retired as chief technology officer at Milsoft Utility Solutions, Abilene, Texas. Malave remains on the company's board, but "we will certainly miss him in the daily operation at Milsoft," said **Wayne Carr**, the board's chairman, who hired Malave exactly 25 years before his recent retirement. "We could not have made the progress that we have without the steadfast and talented work that Luis has so graciously provided for Milsoft and its customers since the beginning of engineering and operations products." Malave pointed to his MultiSpeak

Luis Malave

work in his farewell statement. "Our MultiSpeak integrations continue to serve our customers with 'best of breed' software," he said. "The sad part about retiring is that I will miss working with many of you, our customers, employees, the MultiSpeak Advisory Board, and vendors."

REGION 1
CERTIFIED SAFE AT VEC

Vermont Electric Cooperative (VEC), Johnson, Vermont, has become only the sixth business in the state, and the only utility in New England, to earn health and safety certification through the Green Mountain Voluntary Protection Program administered by the state's Occupational Safety & Health Administration. "Attaining this recognition means VEC is committed to extraordinarily high safety standards," Vermont Labor Commissioner **Lindsay Kurrie** said in presenting the certificate. "VEC is leading by example, and we hope other organizations across the state consider taking similar steps." **John Varney**, the co-op's safety & security manager, said VEC was proud of the honor. "That VEC has achieved this recognition is a visible demonstration of our commitment to safety, not just for our own employees but for our members and the public at large," he said.

Vermont Gov. **Phil Scott** presented the plaque to **Rick Stergas**, safety & environmental compliance specialist at Washington Electric Cooperative (WEC), East Montpelier, Vermont, when the co-op received the Governor's Award for Workplace Safety. But according to General Manager **Patty Richards**, all 37 of the co-op's employees shared in the honor. "The attitudes, beliefs, and values that we share in relation to safety in the workplace is the basis for our organizational culture," Richards wrote in the co-op's member newspaper. "It is how we do things each and every day. Congratulations go out to all WEC employees!"

Northern Virginia Electric Cooperative (NOVEC), Manassas, recently congratulated four employees for reaching the 25-year service mark. Service awards were presented to **Ginger Hamlin**, **Wayne Martin**, **Danny Smith**, and **Cathy Young**. And as they were celebrating a combined century of service, four others began their NOVEC careers. The new employees are **Joshua Cleveland**, **Corina Daw**, **Kevin Hunt**, and **Eric Montgomery**.

Central Electric Cooperative, Parker, Pennsylvania, presented service awards to 10 employees at a recent staff luncheon. The honorees were **John**

Evankovich, 35 years; **Mitzi Evankovich** and **Jannie Shirey**, 30 years; **Doug McQuiston**, 25 years; **Kristina Martin** and **Richard Vensel**, 15 years; **Chris Kossman** and **Jason Pollock**, 10 years; and **Chad Master** and **Jeff Rhoades**, five years.

When Carteret-Craven Electric Cooperative (CCEC), Newport, North Carolina, threw a retirement party for CEO/General Manager **Craig Conrad** recently, his predecessor and his successor were on hand to congratulate him. Rounding out the three "generations" of CCEC CEOs were **Eugene Clayborne**, who held the post for 17 years before Conrad, and **Jake Joplin**, who took over from Conrad upon his recent retirement after 17 years on the job. Also at the co-op, **Bennett Rose** has joined the staff as the co-op's new apprentice lineman.

REGION 2
AIKEN'S NEWCOMERS

Aiken Electric Cooperative, Aiken, South Carolina, recently welcomed a baker's dozen of new employees into the ranks. The newcomers are **Casey Booth**, **Joey Brown**, **Nick Faulkner**, **Brikeye Hendley**, **Brad Scott**, and **Derek Shealy**, all apprentice linemen; **Regina Johnson**, **Jessica Mitchum**, **Avis Sanders**, and **Heather Tager**, all member service representatives; **Bryce Brazel**, engineering technician; **Dustin Pearson**, warehouse/staking support technician; and **Matthew Horton**, warehouse technician. While welcoming those new employees, the co-op also saluted 19 veterans with service awards: **Chris Cady**, **Lyn Day**, **Don Jordan**, **Keith Riley**, **Todd Scoggins**, and **David Walton**, 30 years; **Dale Farrer** and **Terrie Stephenson**, 25 years; **Dan Garman**, 20 years; **Robyn McCay**, 15 years; and **Sid Bellamy**, **Jeremy Bracco**, **Michael Dunbar**, **Sandra Jeffords**,

Brett Laird, **Wes Overstreet**, **Tammy Reese**, **Eric Savage**, and **Bruce Whitlock**, 10 years. And the co-op wished a happy retirement recently to **Lawrence Baker** and **Annelle Stone.**

Two newcomers have joined the staff of Flint Energies, Reynolds, Georgia. **Blair Brown**, who signed on as a cooperative communications specialist, brings six years of marketing experience to her new post. And **Cassandra Woodard**, a new member solutions representative, has more than a decade's worth of customer service experience.

Gregory "Scott" Newberry, CEO of Florida Keys Electric Cooperative Association, Tavernier, Florida, has received the highest honor bestowed by the Islamorada (Florida) Chamber of Commerce. The chamber's **Irving Eyster** Award recognizes one member each year for leadership and support of the chamber and the Islamorada community. Newberry has served on the chamber's board and led the co-op in supporting community holiday festivities, according to **Ken Gentes**, the chamber past president who presented the award. "We recognized the work Scott was doing for the Keys long before [Hurricane] Irma solidified our plans," Gentes said. "But with the arrival of Irma he provided an even greater reason for us to appreciate what Scott does for all of us every day." The co-op also recently saluted two staffers for their combined total of 55 years of service. **Tommy Sawyer**, meterman/serviceman, has been with the co-op for 30 years, and **Cheryl Massey**, supervisor of consumer accounting, is a 25-year employee.

West Florida Electric Cooperative Association, Graceville, Florida, mourned the recent passing of **Ellis Nichols**, a 20-year member of its board. Nichols had served as board president and vice president during those two decades and represented the co-op on the board of its G&T, PowerSouth Energy Cooperative, Andalusia, Alabama. "Words cannot express the void that was created by the loss of Mr. Nichols," said **Russell Dunaway**, West Florida Electric's executive vice president & CEO. "We thank the Nichols family for sharing him with us."

Ellis Nichols

REGION 3

BROWN'S FAREWELL

Donny Brown's family, friends, and co-workers all gathered to mark his recent retirement as a serviceman at Covington Electric Cooperative, Andalusia, Alabama, after 31 years on the co-op's staff. His retirement date coincided with his wedding anniversary, so he and **Nina Brown**, his wife of 38 years, celebrated that as well. "I'm going to miss my co-workers because, when you spend this much time with people, they become like your own family," Brown said. "I'm going to miss working for the members and getting their lights back on after storms. People are so kind and appreciative when their power gets restored, and it makes you feel good to know you were a part of that process." His daughter, **Beverly Simms**, made a speech describing her appreciation for Brown's hard work and dedication both as a father and as a co-op employee. "This sweet gesture generated a few tears from those in attendance at the reception," the co-op reported in its pages of the statewide magazine.

Duck River Electric Membership Corporation, Shelbyville, Tennessee, welcomed two linemen into the ranks recently. **Jackson Fitzgerald** joined the crew working out of the co-op's Columbia district, and **Randall Perkins** signed on with the Shelbyville/Lynchburg district.

His fellow board members at Holston Electric Cooperative, Rogersville, Tennessee, recently congratulated **Brent Price** for earning Credentialed Cooperative Director status under NRECA's rigorous training and certification program. Also on the Holston Electric board, **Mark**

Derrick has been elected to the board of the Tennessee Electric Cooperative Association (statewide), Nashville. The statewide "informs and protects co-op members," said **Jimmy Sandlin**, Holston Electric general manager. "It is an honor to be a part of an organization that has such an important mission."

REGION 4

O'LOUGHLIN WINS THE BROWN AWARD

NRECA has presented its prestigious **J.C. Brown** CEO Communication Leadership Award to **Pat O'Loughlin**, president & CEO at Ohio's Electric Cooperatives (statewide/G&T), Columbus. The award, commemorating the late editor and publisher of *RE Magazine*, recognizes co-op executives who champion the role of communications in their industry. O'Loughlin, one of the award judges said, "consistently sees the whole picture from top to bottom. He plans and then executes the task with precision and with passion for the cooperative way of doing business." NRECA CEO **Jim Matheson**, who presented the award, agreed. "Effective communication is the centerpiece of Pat's vision for Ohio's Electric Cooperatives," he said. "This focus has enhanced relationships between Ohio's not-for-profit co-ops and their consumer-owners. Pat and his communications team have found a winning formula that engages and supports the local co-ops while also positioning Ohio's Electric Cooperatives as a leader in the Ohio business community." Also at the Ohio statewide/G&T, one of its power plants passed two major safety milestones recently, and a top official credited the plant's staff. The 1,800-MW coal-fired Cardinal Generating Station notched more than 1.5 million staff hours without a lost-time injury and, at the same time, surpassed 1 million hours without a "days away, restricted, or transferred" (DART) injury. The plant's 318 employees all played a role in those achievements, according to **Tom Alban**, vice president of power generation at Ohio's Electric Cooperatives. "Even as they work tirelessly around the clock, the Cardinal staff does so with safety and service in mind," Alban said. Elsewhere in the organization, **Michael Dhondt** recently joined the staff as a safety & regulatory consultant. And **Dennis Mingyar**, director of economic development, has received the Rural Economic Development Leadership Award from the National Rural Economic Developers Association (NREDA). "Dennis was chosen for this award because of his commitment to excellence in rural development in Ohio and nationally, his willingness to share his expertise with his peers, and his commitment to the growth and development of NREDA," said **Linda Salmonson**, a former association president. "He is always willing to mentor, support, and challenge both members and the organization to be the best they can be."

Denny Marugg will retire as director of electric

Denny Marugg

operations at Firelands Electric Cooperative, New London, Ohio, this month after a 29-year career with the co-op. He joined the staff as a lineman in 1989 and moved up to electric operations director in 1998. "I am proud of our accomplishments and have been blessed to work alongside many dedicated and hardworking co-op employees," Marugg said. "Firelands Electric is a great organization because of its committed employees who take pride in what they do." The co-op will miss him, according to **April Bordas**, who retired as general manager just before Marugg wrapped up his career. "He is a very dedicated employee who has always looked out for the best interest of the cooperative and its members," she said. Also at Firelands Electric, staffers and board members mourned the recent passing of **Lowell Kreager**, a trustee since 1986 and the board's vice president since 1999. Kreager "always valued his relationships with legislators and looked after the best interests of our rural members," Bordas said. "Everyone who works with Firelands Electric is a member of the cooperative family, and we are all saddened by this loss."

Lowell Kreager

Veteran staffers at HomeWorks Tri-County Electric Cooperative, Portland, Michigan, were saddened to learn of the recent passing of two retirees. **Rita Miros** worked in the co-op's customer service department from 1976 to 1997. **Maggie Trierweiler** also worked in customer service from 1974 until her retirement as customer service supervisor in 2000. Both were 83.

REGION 5
LUCKY THIEVES

Authorities and officials at Wayne-White Counties Electric Cooperative, Fairfield, Illinois, had some bad news and some good news for a pair of copper thieves recently. The bad news was they were under arrest, but the good news was that they hadn't killed themselves. The two men had attached copper ground wires on one of the co-op's poles to their truck and planned to pull the wire down by driving away. Instead, the wire broke, bounced back up into the transmission line overhead, and caused a midnight outage that affected more than 1,600 people. "They were crazy to try something like that," **Randy Olson**, the co-op's director of communications, told NRECA News. "You're literally risking your life." The co-op offered a $5,000 reward for information leading to the thieves' arrest, and the pair were arrested shortly thereafter. Authorities are also investigating whether the two were involved in previous thefts resulting in almost $40,000 in damages. "This was the most brazen attempt in quite a while," Olson said. "We just decided we're going to get really forceful on this, so that's why we offered the reward. We want to put a stop to this."

Co-workers at Eau Claire Energy Cooperative, Fall Creek, Wisconsin, congratulated **Monica Obrycki** on her recent promotion to chief administrative officer. Obrycki joined the co-op staff about five years ago.

REGION 6
KRAMBEER'S HONOR

Brian Krambeer, president/CEO at MiEnergy Cooperative, Rushford, Minnesota, has received the Cooperative Builder Award from Cooperative Network, an association of co-op businesses in Minnesota and Wisconsin. Krambeer said the honor resulted, in part, from "assembling a great group of employees, a supportive board of directors, and the value placed on the relationships I have made over 29 years of service in the cooperative program."

His co-workers at McLeod Cooperative Power Association, Glencoe, Minnesota, have said farewell to **Darrel Beste**, whose recent retirement as engineering manager closed out a 30-year career at the co-op.

Travis Kupper has been named co-general manager/CEO for four North Dakota co-ops that make up Innovative Energy Alliance Cooperative (service), New England. Kupper, who's been CFO for the co-op alliance for more than seven years, has worked at North Dakota co-ops and co-op service organizations for nearly two decades. In his new post, Kupper works alongside **Don Franklund** at the top of the co-op alliance's organizational chart. At the four co-ops—KEM Electric, Linton; Mor-Gran-Sou Electric, Flasher; Roughrider Electric, Hazen; and Slope Electric, New England—they succeed **Chris Baumgartner**, who resigned after five years to become senior vice president of member services & administration at Basin Electric Power Cooperative (G&T), Bismarck, North Dakota.

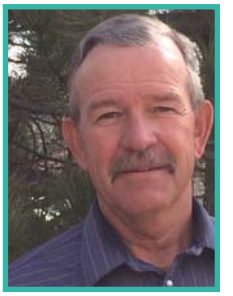
REGION 7

EARNING THE THOMAS

The Wyoming Rural Electric Association (statewide), Cheyenne, has presented its prestigious **Craig Thomas** Cooperative Service Award to **Bob Johnson**, who retired after 34 years of service on the board of Carbon Power & Light, Saratoga. The award, named in honor of the late statewide association manager who went on to represent his state in both houses of Congress, recognizes Wyoming co-op leaders who have "contributed clearly above and beyond the normal call of duty in furthering the principles and progress of electric cooperatives."

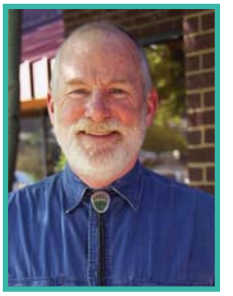
Kansas Electric Power Cooperative (G&T), Topeka, announced a pair of high-level promotions recently. **Mark Barbee** moved up to senior vice president of engineering & operations, while **Suzanne Lane** advanced to vice president of member services & government affairs.

La Plata Electric Association (LPEA), Durango, Colorado, recently announced the promotion of a long-time employee and the certification of three directors. **Jerry Wills**, who started as a meter reader in 1983, has been named manager of the co-op's Pagosa Springs District. Wills joined the co-op's line crews in 1985 and worked his way through the ranks to become line superintendent for the Pagosa Springs District in 2015. "LPEA is fortunate to have Jerry on our team," said CEO **Mike Dreyspring**. "This was such a natural progression because of his leadership and experience." In the LPEA boardroom, **Karen Barger** and **Kohler McInnis** both recently completed the requirements for their Credentialed Cooperative Director certificates under the NRECA training program. **Jack Turner** added the Board Leadership Certificate to his list of qualifications. "It is essential for all directors to keep abreast of



Jerry Wills

Karen Barger



Kohler McInnis

Jack Turner

the various issues that assist the cooperative to make more informed decisions and do the best possible job of representing our members," Dreyspring said. "Today's electric utility environment imposes new demands on directors."

REGION 8
ALBERT PASSES

Folks at the Oklahoma Association of Electric Cooperatives (statewide), Oklahoma City, and co-op leaders across the state mourned the recent passing of **Fred Albert**, who retired as advertising manager for the association's consumer magazine in 2003 after 32 years on the job. Albert was 88.

Cheryl Poe has retired as data processing supervisor at Alfalfa Electric Cooperative (AEC), Cherokee, Oklahoma, after a 34-year career at the co-op. She started out as a part-time cashier and told *Hotlines*, the co-op's member newsletter, that "I would never have thought after my first day on the job that I would be retiring from AEC after 34 years. That first day, around 7,000 printed bills came in the mail. Another employee and I sorted the postcards by address and put them into envelopes to be mailed again that afternoon." **Britni Holloway** was named to succeed Poe.

Dawn Caton has joined the staff at United Electric Cooperative, Savannah, Missouri, as the co-op's energy management system operator. Previously a dispatcher for the Missouri Highway Patrol, she'll work on developing and operating the co-op's energy management and SCADA systems.

Co-workers at Ozark Electric Cooperative, Mount Vernon, Missouri, said farewell recently to **Yvonne "YJ" Johnson**, a 35-year co-op veteran who started out working the phones for the engineering department and retired recently as system facilities coordinator. Thinking back on a long career, she said ice storm recovery campaigns made up the bulk of her most memorable moments on the job, and "not in a good way."

Staffers at Associated Electric Cooperative (G&T), Springfield, Missouri, and its Thomas Hill Energy Center said farewell recently to **Alan McCune**, who signed on as a general utility worker at the plant in 1982 and retired as plant chemist. He spent all but six months of that long career in the plant's lab doing vital work for the co-op and its members, he said. That work, McCune said, "is prolonging the life of the boiler because we're not allowing extra contaminants into the system. That means we don't have to sacrifice reliability to do a chemical cleaning or take units off-line nearly as often."

J.D. Lowery, manager of economic development for Arkansas Electric Cooperative Corporation (G&T), Little Rock, has been named to a two-year term on the board of directors of the Southern Economic Development Council. Lowery, who joined the G&T staff in 2015, has been a member of the council for about three years. "I am confident that he will assist us in facilitating our 2018 program of work, in addition to helping us chart our course for future programming," said **Sam Powers**, chairman of the council board. Lowery also sits on the boards of the National Rural Economic Developers Association and Arkansas Economic Developers & Chamber Executives.

REGION 9

KELLY RETIRES

A 35-year career at Salem Electric, Salem, Oregon, drew to a close with the recent retirement of **Terry Kelly** as general manager. His departure came shortly after he was honored by the Oregon Rural Electric Cooperative Association (statewide), Wilsonville, with the association's Distinguished Service Award. "Terry Kelly is one of the finest leaders the Oregon electric cooperative program has ever produced," statewide Executive Director **Ted Case** said. Kelly was more humble in describing himself for a farewell feature in *The Info Bulletin*, the co-op's member newsletter: "I just like to be involved and try to make a difference," he said. Taking over as Salem Electric's general manager is **Tony Schacher**, previously the co-op's engineering & operations manager and a 10-year employee.

Terry Kelly

Tony Schacher

James "Keith" Brooks

James "Keith" Brooks is settling into his new job as general manager at Douglas Electric Cooperative, Roseburg, Oregon. A 25-year utility industry veteran, Brooks comes to the co-op from Kootenai Electric Cooperative, Hayden, Idaho, where he was assistant general manager. He takes over from interim General Manager **Werner Buehler**.

Vicki Fix, member services director at Southeast Electric Cooperative, Ekalaka, Montana, has an additional title now: Ms. Mayor. Fix ran a write-in campaign to defeat two

other candidates for Ekalaka mayor. "Her successful write-in campaign resulted in more than 70 percent of the vote, which speaks volumes to the respect and support she has in this small community," General Manager **Jack Hamblin** wrote in his column for the co-op's member newsletter.

His co-workers at Vigilante Electric Cooperative, Dillon, Montana, were sorry to see **Ben Miller** leave when he took a new job recently at Mountain View Electric Association, Limon, Colorado. Miller had joined Vigilante Electric more than a decade earlier to work on its geographical information and global positioning systems. "Ben is an excellent employee, co-worker, and friend who will be sorely missed around here," said **Rollin Miller**, general manager.

REGION 10
MOVING JOURNEY

Acting as a veteran's "guardian" during the recent Texas South Plains Honor Flight to Washington, D.C., was doubly meaningful for **Anthony Garcia**, warehouse purchasing agent at Bailey County Electric Cooperative Association, Muleshoe, Texas. Garcia escorted his Vietnam War veteran father, **Alex Garcia**, on the three-day tour of war memorials and government buildings. Their visit to the Vietnam War Memorial was especially moving, Anthony said. "It was personal to me not only because my dad fought in Vietnam, but because I found my cousin's name on the wall," he said.

Norman Kiecke has been appointed to the board at San Bernard Electric Cooperative, Bellville, Texas, to take over for his father **Elroy Kiecke**, who retired recently after two decades of board service at the co-op. Staff and directors came to rely on the elder Kiecke, according to **James "Billy" Marricle**, president/general manager. "His insight, knowledge, and wit will be sorely missed," Marricle told members in the co-op's pages of the statewide consumer magazine, adding that he "was a valued contributor and leader in what will undoubtedly be remembered as a turning point in this cooperative's future." But like father, like son, Marricle continued. "I am confident that [Norman Kiecke's] background will allow him to make informed decisions on the direction the co-op will take in the future."

Norman Kiecke

Elroy Kiecke

A three-member crew from CoServ Electric, Corinth, Texas, traveled nearly 3,700 miles to help build 5 miles of line in Bolivia recently. The long trip was well worth the effort, they agreed, especially when the lights came on in the remote village they helped bring power to. "It's something I'll never forget," Operations Manager **Bret Turnbow** told CoServ's **Dawn Cobb** for a story on the trip. "There was so much hooting and hollering. It was a wonderful experience." **Ben DeRemer** and **Chris Hammonds**, both crew supervisors at the co-op, joined Turnbow on the trip.

Roland Gonzales's recent retirement as Stamford district maintenance coordinator at Big Country Electric Cooperative, Roby, Texas, wrapped up a 35-year career at the co-op. Gonzales worked his way up from lineman to crew foreman to maintenance coordinator "responsible for the east side of our electric system," the co-op told readers of its local pages in the statewide consumer magazine. "**Pete Anders**, also a familiar face from Stamford, will step in to fill Roland's shoes." Anders has been with the co-op since 1983, the co-op reported, "so we know that our system remains in very capable hands."

The Grand Canyon State Electric Cooperative Association (statewide), Tempe, Arizona, has hired **William Ford** as its new director of loss control & safety services. A former lineman, Ford previously worked in electric utility safety and compliance in North Carolina. "We are proud to welcome William to our team to fill the critical role of providing much needed safety training programs and support to our members," said **John Wallace**, the statewide's CEO.

Tony Casados Jr. retired from the board of Northern Rio Arriba Electric Cooperative (NORA), Chama, New Mexico, at the co-op's recent annual meeting, marking an end to 36 remarkable years of service. **Rick Gordon**, who chairs the board of Tri-State Generation & Transmission Association, Denver, Colorado, recalled the role Casados played in that G&T's merger with New Mexico's Plains Electric in 2000. Casados, Gordon said, was a "tireless advocate for Tri-State in New Mexico" who served six years as its board vice president and 16 years on its executive committee. Late last year, the G&T named its maintenance center in Rio Rancho, New Mexico, in honor of Casados. His successor as NORA board president, **Steve Rendon**, thanked Casados "for being a longtime mentor, former teacher, and coach," according to a co-op report, and **Benjamin Leyba**, executive vice president & general manager, presented the retiring director with a plaque. "It's been a great ride for me," Casados said.

The New Mexico Press Association has inducted **John Graham**, president of the board at Lea County Electric Cooperative, Lovington, into its Hall of Fame. Graham, publisher of the *Lovington Leader* and the *Denver City Press* in Denver City, Texas, is a third-generation newspaper publisher. RE

FLASHBACKS

FROM PAGE 7

business leaders and condemned electric co-ops as socialistic. To them, the Rural Electrification Administration (REA) was an infuriating example of government sticking its nose where it didn't belong.

Texas Power & Light Company sued to stop all six Colorado River dams from being built. According to Dugger, the utility also went after House Majority Leader Sam Rayburn, Johnson's political mentor and a fellow Texan. They painted him with the socialist brush for his bullish support of the dams, the REA, and co-ops.

Rayburn liked to tell the story of the Texas Power & Light Company president who asked a local banker how much it would take to defeat Rayburn in the next election. When the banker told the man it couldn't be done, "he said they had the money to do anything."

Robert Montgomery, a progressive economist at the University of Texas who had Johnson's ear, argued that the power companies, like the railroads, the sulfur industry, and the oil refineries, were owned by Eastern financiers. Texas was "their largest foreign colony." Worse, the power companies were milking rural consumers through unfair electric rates.

In Washington, Johnson worked closely with Rayburn to get the $5 million appropriation passed. Rayburn tucked the appropriation into a Works Progress Administration (the largest New Deal agency) funding bill, and it passed relatively easily. He saw it as a teaching moment for 28-year-old Johnson about "keeping your mouth shut on the floor" and letting the leadership work its magic. (Johnson, Dugger wrote, had prepared a long oration defending the Mansfield Dam, but before he knew it, the appropriation was two pages back and not a word had been uttered against it.)

All six dams were eventually built. Johnson persuaded the LCRA to supply electricity to the Hill Country and helped form two electric co-ops to distribute it: Pedernales Electric in Johnson City (his hometown) and Lower Colorado River Electric (later renamed Bluebonnet Electric) in Giddings.

The power companies never forgave him. "They hated me for these dams," Johnson once told Dugger in an interview. "They called me a communist." RE

Most information for this story comes from The Politician: The Life and Times of Lyndon Johnson *by Ronnie Dugger (1982, W.W. & Norton Company). Dugger was the founding editor (1954) of the crusading* Texas Observer.

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