Minnkota MESSENGER

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Syncing the sound

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Minnkota
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November-December 2020

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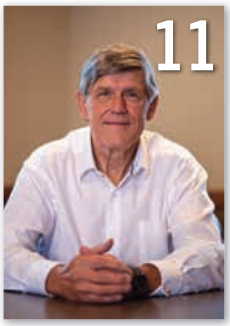

On the cover: Jason Bjerke, Minnkota senior technical maintenance technician, makes adjustments on the new 115-kilovolt (kV) ripple injector that was installed at Wilton substation near Bemidji, Minn., in November. Ripple injectors deliver signals that are essential to the cooperative's demand response program.

Minnkota Messenger is published six times a year by Minnkota Power Cooperative. Its mission is to communicate Minnkota's perspectives and concerns to its members, elected officials, employees and other business audiences. For editorial inquiries, call (701) 795-4282 or email bfladhammer@minnkota.com.

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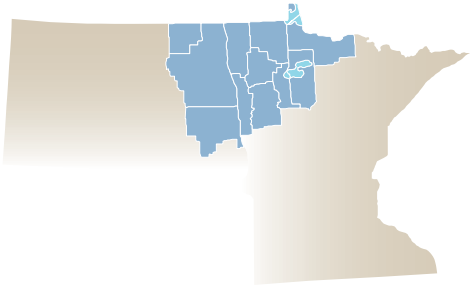
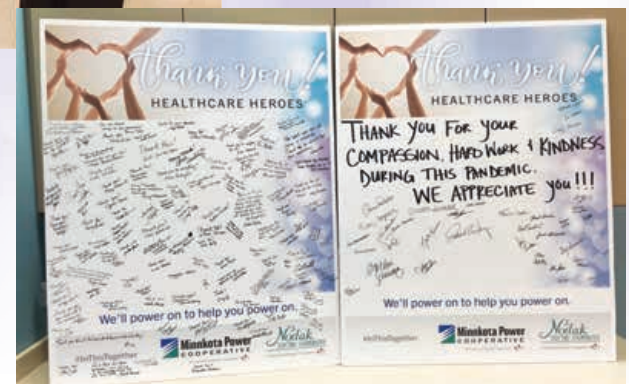


Minnkota Power Cooperative is a generation and transmission cooperative headquartered in Grand Forks, N.D. It supplies wholesale electricity to 11 member-owner distribution cooperatives, three in eastern North Dakota and eight in northwestern Minnesota. Minnkota also serves as operating agent for the Northern Municipal Power Agency, an association of 12 municipal utilities in the same service region. Together, the Joint System serves more than 153,000 customers.

Members of Altru's inpatient care team stop by for a Red Pepper sandwich during a Minnkota/ Nodak-sponsored appreciation lunch.



Minnkota shares giving spirit during the holidays

During the season of giving, Minnkota is living the cooperative principle of "Concern for Community" through its employee Jeans Day Fund and a healthcare thank-you lunch cosponsored by Nodak Electric Cooperative.

On Dec. 9, Minnkota and Nodak presented Altru's healthcare staff with 250 meals catered by the Red Pepper, along with two posters signed with notes of gratitude from employees of both co-ops. The lunch was a token of appreciation for the doctors and nurses who have been tirelessly caring for the region's sick over the past few months.

"Our community is lucky to have Altru's dedicated healthcare team to help our families through this pandemic," said Minnkota president and CEO Mac McLennan. "This lunch was our small way of showing them how much our employees appreciate their perseverance."

The employee Jeans Day Fund helped support three separate efforts to assist families in need throughout the holiday season. In time for Thanksgiving, employees donated $500 to the University of North Dakota Mortar Board organization's Turkey Basket Drive. The annual student-led program raises money to assemble packages that contain all of the fixings for a Thanksgiving dinner for Greater Grand Forks families in need. The group distributes approximately 1,000 baskets every year.

Employees also gave a $500 gift to the Salvation Army's annual Big Ring event. For the past 14 years, Salvation Army volunteers have taken turns pumping gas for customers for a day during the Christmas season. In turn, businesses and organizations make matching donations for every gallon pumped. The event has raised around $50,000 every year for the past several years. Those funds stay local to assist families for the holidays and support year-round Salvation Army programs like the food pantry.

To top off the season, the Jeans Day committee continued an annual tradition of gathering extra employee donations to assist the local St. Joseph's Social Care food pantry during this time of higher demand. Employees raised $1,890 for the food pantry, which is enough to fill more than seven pantry shelves.

Minnkota would like to once again thank all of the region's healthcare and essential workers for helping us all power on through the pandemic, as well as all of the local organizations that are supporting families during a challenging holiday season.

By **Kaylee Cusack** / Submitted photos

Syncing the sound

MINNKOTA WORKS TO ENHANCE AND IMPROVE DEMAND RESPONSE SYSTEM

There are soundwaves hidden beneath the gentle hum of Minnkota's power delivery system that engineers and technicians work tirelessly to perfect. They turn dials, tweak settings and monitor signals pulsing through the cooperative's ripple injectors in hopes of finding a perfect harmony.

There was a lot of buzz in 2020 around Minnkota's ripple injection system – the unique set of equipment that drives the cooperative's demand response program. Two ripple injectors were replaced with new equipment, custom communication technologies were deployed and a full-system sync was performed for the first time in nearly 50 years of operation. This work will inform one of the most thorough review and modeling efforts on all 17 ripple injectors in the Minnkota system.

A crane helps position the ripple injection equipment in place during construction of the new system at the Wilton substation.

"This is our first time really looking at the entire system, not just making fixes at one or two sites," said Kasey Borboa, electrical engineering supervisor. "If you can imagine throwing 17 soundwaves all together and trying to line them up at different distances, that is exactly what we're doing."

Ripple injectors send tens of thousands of electronic signals throughout the entire transmission system and into the distribution system. Receivers plugged into standard electrical current at homes and businesses can read the signals, and when the appropriate message is sent, the receivers interrupt the electric power flowing to an electric heating system, water heater or other controllable load. When control is no longer needed, a signal is sent to turn the electric system back on.

All injectors need to work together and fire at approximately the same time to ensure the signal reaches across the entire 35,000-square-mile system served by

Surrounded by the northern Minnesota woods, Jason Bjerke, senior technical maintenance technician, adjusts ripple injection equipment at the Wilton substation.

Minnkota and the membership. The process of tuning and syncing the injectors is a combination of art and science.

"Tuning an injector is like tightening the strings of a musical instrument to make sure it vibrates at a certain frequency," said Nick Gellerman, Minnkota's lead engineer on the project. "Syncing all the injectors together is like coordinating an orchestra and making sure that your violins, drums and other instruments are all playing at the same time."

With the entire system off, crews started syncing all the larger injectors, which have the strongest signal strength. As adjustments were made, Gellerman monitored the results on his laptop.

"It requires a very fine timing adjustment," Gellerman said. "We adjust things by about a millisecond at a time until we get to the highest signal possible."

Two-way communication

Minnkota became a pioneer of demand response in the early 1970s when the ripple injection system was built. Since then, the program has become one of the most successful and unique in the country with more than 55,000 consumers participating. By reducing the demand for electricity during peak usage times, Minnkota is able to avoid purchasing costly excess power from the wholesale market, which saves money for the membership.

While many utilities use radio or Wi-Fi to send their demand response signals, Minnkota has committed to the ripple injection system because the infrastructure is in place and it has proven to be highly reliable through harsh winters and sweltering summers. Historically, the challenge has been that the system was only designed to provide one-way communication.

Borboa said that countless vendors were asked to develop a device that would provide additional data and two-way communication. There were few takers, and those who were interested required a substantial research and development investment from Minnkota with

Jared Thompson, technical maintenance technician, assists with the tuning of the Wilton substation.

(Left to right) Joe Hensel, Patrick Rickenbacher, Nick Gellerman, Jared Thompson and Jason Bjerke work together to tune the new ripple injection system at the Wilton substation from the adjacent control house.

no guarantees of success. Instead, Borboa decided to ask Gellerman if he could design a solution.

Although there was no instruction manual or template to follow, Gellerman delivered the ripple monitor device, which is fondly referred to as the "Geller-meter" in some circles at the cooperative. The equipment measures the system's signal strength and communicates that data back to the cooperative's control center.

Gellerman (left) and Kasey Borboa inspect the inner workings of the ripple monitor device that Minnkota custom developed and builds in-house.

Information gathered from the ripple monitors is being used to develop a demand response system model that will help identify signal issues and determine the potential effects of a transmission line failure or ripple injector malfunction. It will also determine if ripple injectors need to be moved to different substations or if new equipment should be purchased.

"Now we know what the signal is doing at the end of the line and what the consumers are likely seeing," Borboa said. "We have a much better sense of how different outages effect certain signal levels and when system changes are occurring."

"It's been a pretty fun project," Gellerman said. "It's unlike any of the other projects we do around here."

Minnkota technicians have installed ripple monitors at 50 substation sites and, over the next few years, plans are to have the devices at nearly all 255 substations. Having consistent data from the field will help ensure the system is performing reliably.

"The ripple monitors help us tremendously," said Jason Bjerke, senior technical maintenance technician, who has worked on building and installing the devices. "Now we know what is happening across the system. If the co-ops are seeing issues, we can call that ripple monitor and find out what's going on."

Legacy system

Over the last five years, Minnkota has replaced 10 of the 17 injectors with new

"I'm impressed with the size of this system. In Europe, you have a city that has its own ripple control system. The radius is about 10 miles at most. This system is much different and the injection level is much higher, but that makes it more interesting to work on."

– Patrick Rickenbacher, Solutec, based in Switzerland

equipment, including the West Fargo 69-kV injector and the Wilton (Minn.) 115-kV injector in 2020. Plans are to have all injectors replaced by the end of 2024.

With little access to vendors or experts in the United States, Minnkota purchased the injectors from a Swiss company and works with Solutec's Patrick Rickenbacher. Even in a pandemic, Rickenbacher's critical infrastructure worker designation allowed him to travel from Switzerland to the United States and, after following proper quarantine and self-monitoring requirements, help with the new injector installation at Wilton substation this fall.

Rickenbacher said the uniqueness of Minnkota's system provides a learning experience for him as well.

"I'm impressed with the size of this system," Rickenbacher said. "In Europe, you have a city that has its own ripple control system. The radius is about 10 miles at most. This system is much different and the injection level is much higher, but that makes it more interesting to work on."

Rickenbacher has traveled to the United States five times to work with Minnkota. During those trips, work connections have turned to friendships.

"We work together very closely," Rickenbacher said of Minnkota's employees. "They're not just giving me the keys and leaning back in their chairs. They want to know how things work. You can tell they really care about the system."

By **Ben Fladhammer** / Photography **Michael Hoeft**

Jason Bjerke (left), senior technical maintenance technician, collaborates with Patrick Rickenbacher, who traveled from Switzerland to assist with the project. The duo is working to fine-tune the performance of the Wilton substation's ripple injectors.

Buyer beware

MINNKOTA STRENGTHENS ITS SUPPLY CHAIN TO NAVIGATE COVID-19 AND NEW CYBERSECURITY STANDARDS

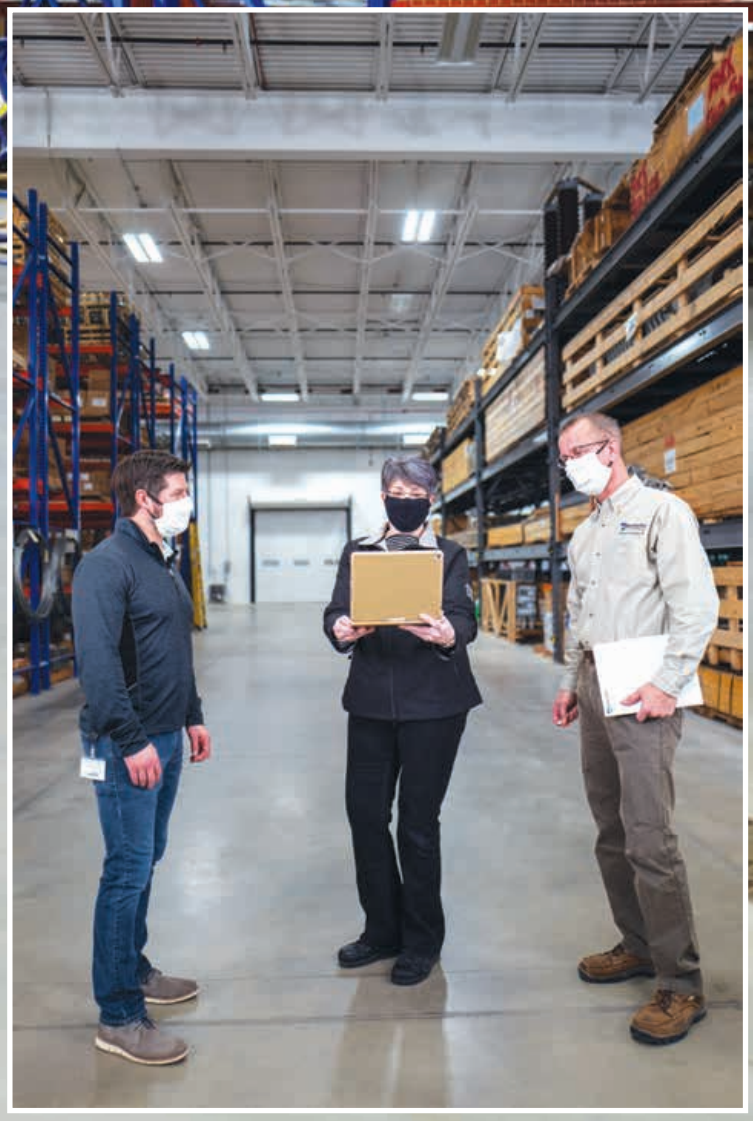
As businesses began closing their doors and scaling back operations in March, Scott Schreiner admits he was getting nervous. He and others in Minnkota's procurement department began following the numerous supply chains that weave through the cooperative's operations in search of any potential failure points as the global pandemic began to take hold.

Nine months later, Schreiner has found the links to Minnkota's suppliers and vendors are even stronger than he realized.

"We've been really happy with the resiliency of our supply chain," said Schreiner, Minnkota's procurement manager. "We haven't had any major issues outside of a few delays. And those delays have only been a week or two. We haven't seen the complete shutdown of a factory or any major items become unavailable."

The purchasing of everything from bottles of hand sanitizer to power plant machinery is managed through the cooperative's procurement department. Many items, specifically at the generation facilities, are unique to the industry and can't be found on a shelf at the local hardware store. Long-term planning and coordination is vital to keeping projects on track and power flowing into local communities.

Although Minnkota's supply chain has remained strong throughout 2020, Schreiner was quick to remind that the circumstances can change quickly and a keen focus must be maintained.



(Left to right) Brandon Trontvet, system operations and EMS manager; Katherine Anagnost, NERC compliance coordinator; and Scott Schreiner, procurement manager; collaborate on a tablet inside Minnkota's Grand Forks warehouse.

"We're part of a global supply chain," Schreiner explained. "So we see the impacts, not only of COVID, but also of wildfires in California and other major events around the world."

New standards for supply chain

Electric utility supply chains have been under the microscope in recent years as cybersecurity risks continue to grow. The concern relates to installing software or equipment that could potentially be corrupted or accessed virtually by a hacker or foreign adversary. As the operation of the U.S. electric grid becomes increasingly digital, utilities have had to respond with robust plans to ensure security.

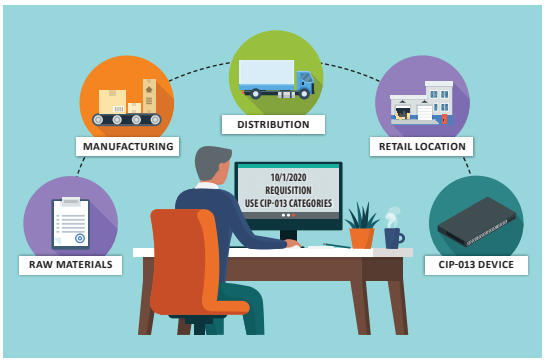
On Oct. 1, the North American Electric Reliability Corporation (NERC) implemented requirements for utility supply chains under its Critical Infrastructure Protection- (CIP-) 013-1 standard. Each utility was required to

develop plans for procuring hardware, software and computing and network services associated with bulk electric system operations.

"We were tasked with evaluating our supply chain from the manufacturer through the various hands it may touch along the supply chain route," Schreiner said. "We need to understand everyone's role in process."

Minnkota assembled a cross-section of employees to learn the security protocols and processes of the manufacturers, value-added resellers and others who interact with the product. From there, risk assessment scores were given and an approved vendor list was generated.

"We developed a questionnaire to help us understand the potential vulnerabilities for each vendor and their supply chain processes," said Brandon Trontvet, system operations and energy management system (EMS) manager. "As you go through the process, you find there's multiple different ways a vendor distributes or even produces a specific product."



Trontvet's group oversees high-impact areas, such as Minnkota's energy control center, where personnel are operating and monitoring the bulk electric grid. If equipment were to be installed with malicious code or software already included, wrongdoers are one step closer to creating havoc.

The most notable utility supply chain alert was issued in 2019 when federal officials seized an electrical transformer manufactured in China as it was heading toward Denver due to grid security concerns. While the United States has not experienced a major cyberattack on the electric grid, the risks are real and inching closer. But each time, the electric utility has responded.

"The standard doesn't eliminate our risks, but it provides the opportunity for us to better understand them," Trontvet said. "As our plan is implemented, we mitigate as many risks as we can and learn from the process as we get more data. It's a process that continues to evolve."

Collaboration is key

As security risks in the electric industry grow, NERC standards have followed suit and are now impacting numerous processes and procedures throughout Minnkota. Noncompliance isn't an option, as NERC has the authority to issue fines of $1 million per day, per violation.

As utility supply chains come into focus, Minnkota's employees, vendors and other entities have received a crash course in utility compliance obligations and grid security. Katherine Anagnost, a Minnkota NERC compliance coordinator, credited the North American Transmission Forum for helping bring the nation's utilities and prominent vendors together and providing a roadmap to ensure consistency across the industry.

"The collaboration internally and externally has really been amazing to witness," Anagnost said. "I don't know if we've seen this level of collaboration on a NERC standard before. With supply chain, it affects so many different people and everyone needs a voice in the process."

Although the cooperative has dedicated more than a year to meeting compliance, the work is not done. Coordination with vendors, risk assessments and other activities will continue. And a new version of the NERC supply chain standard is already in development.

"We didn't stop working when the standard became effective," Anagnost said. "These groups are still meeting on a scheduled basis to further enhance our processes and help make them less burdensome for our vendors."

By **Ben Fladhammer** / Photography **Michael Hoeft**

Dolan to lead Wild Rice Electric

NEW CEO BRINGS TWO DECADES OF CO-OP EXPERIENCE

Kristin Dolan is the new CEO of Wild Rice Electric Cooperative in Mahnomen, Minn. Dolan's duties began in late October following the retirement of Steve Haaven, who served in the cooperative's top position for the past 33 years. Dolan brings more than two decades of experience working for electric cooperative members. Her rural roots extend back to her family farm in southwest Minnesota, where her grandfather, father and uncle have all served on the local electric cooperative's board of directors.

"The cooperative business model is the most rewarding to work in," Dolan said. "We have a common purpose in serving our members and it is very enjoyable to share in that connection. It's been rewarding to share this with my family as well."

Dolan is a graduate of Southwest Minnesota State University and her professional background includes finance, member services and leadership roles. Most recently, she served as CEO of Runestone Electric Association in Alexandria, Minn., for nearly five years. She has also worked as manager of finance and member services at Meeker Cooperative Light and Power in Litchfield, Minn., and as special project analyst for Wright-Hennepin Cooperative Electric Association in Rockford, Minn.

During her career, Dolan has taken on leadership roles in numerous organizations and committees. She currently serves on the National Rural Electric Cooperative Association's (NRECA) Legislative Committee and has served as secretary and chair of the STAR Energy Services board and as secretary on the Heartland Security Services board. She has also completed NRECA's Robert I. Kabat Management Internship Program.

In her new role at Wild Rice Electric, Dolan's focus will be on implementing technology advancements, replacing the cooperative's aging plant, preserving reliability and keeping rates affordable. But what's stood out the most in her first month on the job is the cooperative's people.

"The employees are amazing," Dolan said. "They work hard and care greatly for our members. I look forward to working on our strategic initiatives together."

Dolan said the membership can expect their new CEO to be someone who will be responsive to their needs.

"The employees are amazing. They work hard and care greatly for our members. I look forward to working on our strategic initiatives together."

– Kristin Dolan, new CEO, Wild Rice Electric Cooperative

"We will listen to our members and provide support where we can for their energy needs," Dolan said. "The member is our priority and we will provide excellent customer service and fair and equitable decision-making."

Away from work, Dolan resides in the Detroit Lakes area and is a mom to four kids, the youngest of whom is a sophomore in high school. In her spare time, she enjoys being with family, traveling, hiking, reading and riding motorcycle.

By **Ben Fladhammer** / Photography **Michael Hoeft**

A legacy of loyalty

HAAVEN RETIRES AFTER 47 YEARS OF SERVICE TO WILD RICE ELECTRIC MEMBERS

When asked about the more than 14,000 accounts on Wild Rice Electric Cooperative's system, CEO Steve Haaven doesn't focus on meters, miles of power line or electricity usage. Instead, he's quick to bring up the relationships he has with the families and farms that make up the membership.

"I have come to know many, many members over the years," Haaven said. "Not only that, I know their parents and I probably knew their grandparents, too. We provide them with a service, and through that we get to know them extremely well."

Those close bonds developed over Haaven's 47-year cooperative career are what he will miss most when he retires at the end of October. Through nearly a half-century, his door remained open to the members in good times and during challenges.

"I've been blessed to work for an organization that is member-focused and member-driven," Haaven said. "We pride ourselves on our service and being responsive to the membership."

That mindset inevitably rubs off on employees, many of whom weren't born when Haaven began working at Wild Rice Electric. He has been involved with hiring each employee at the cooperative and, in many situations, their predecessors.

"We have a good group of employees here," Haaven said. "Over time, you develop a camaraderie and they become like family. Everyone knows their job and we work well together."

Changing with the times

As an electric cooperative leader, Haaven drew on the work ethic he learned growing up in McIntosh, Minn., and spending a significant amount of time on his grandparents' farm. After graduating from high school, he earned a business degree from Minnesota State University Moorhead while working summers for Garden Valley Telephone Company building telephone lines. That mix of experience helped make him an easy choice for the engineering aide position at Wild Rice Electric in 1973 – his first full-time job out of college.

"As I move into the next phase of my life, I leave knowing I have been truly blessed in so many ways. I have a few projects lined up, but I'm really looking forward to taking things one day at a time."

– Steve Haaven, retiring CEO
Wild Rice Electric Cooperative

Learning the business didn't take long. Two years later, Haaven was promoted to office manager and in 1987 he became the cooperative's fifth CEO.

Haaven marvels at how technology has reshaped the daily functions of the cooperative. He can recall manually writing in all the debits and credits into the cooperative's ledger each month, and working on computers that filled entire rooms. But the biggest changes may have come in the last decade.

"I am especially proud of the positive steps taken to upgrade and digitize our mapping system, metering and outage management systems," Haaven said. "It's unbelievable to see the changes and efficiencies gained."

Respected in the industry

In addition to managing the cooperative, Haaven has been engaged in legislative and regulatory processes on behalf of the membership. He often spoke to key decision-makers on issues that could impact the cooperative's operations and consumers at the end of the line.

"Steve is well respected by peers in our industry not only at the local level, but also on the statewide and national levels," said Russ Okeson, who served on the Wild Rice Electric board from 1978 to 2019. "He has guided Wild Rice Electric through a number of challenges over the years, and he should be proud of the leadership he has displayed for the members of the cooperative."

Those leadership qualities have translated to numerous cooperative boards and committees. Haaven was chairman of the board for Carr's Tree Service, which completes tree-clearing work for the electric utility industry, for more than two decades and represented Minnesota and the Dakotas on the National Rural Utilities Cooperative Finance Corporation board for six years. In another unique situation, Haaven stepped in to manage Red River Valley Co-op Power, a neighboring electric cooperative, for more than a year as it went through a management transition.

Guidance and trust from the board of directors have been essential as Haaven has navigated the cooperative through significant industry changes.

"We've been blessed with long-term board members who have been supportive," Haaven said. "Their center of focus has always been to do what's right for the membership. That's guided their governance and helped position our staff to get the job done."

Life after Wild Rice

Haaven's career at Wild Rice Electric may never have happened without his wife and high school sweetheart Candace taking a teaching job in the area. That decision prompted Haaven to turn down job offers in the Twin Cities area and focus on his cooperative career and farming.

"When you think about those 47 years, she's been involved every step of the way," Haaven said of his wife. "She's been willing to schedule around those sacred last Tuesday of every month board meetings. I know she has attended every annual meeting since March 1974 and has adjusted her schedule often to take care of many family matters in my absence."

In retirement, Haaven will remain a Wild Rice Electric member on Maple Lake, where he plans to spend more time with his two children and five grandchildren, who live near Fargo and Fertile, Minn. He's also excited to travel more when it becomes a safer and easier option post-pandemic, but he and Candace are already looking forward to spending time in Florida during the winter.

"As I move into the next phase of my life, I leave knowing I have been truly blessed in so many ways," Haaven said. "I have a few projects lined up, but I'm really looking forward to taking things one day at a time."

By **Ben Fladhammer** / Photography **Michael Hoeft**

Advocacy from afar

VIRTUAL MEETINGS KEEP MINNKOTA ENGAGED IN ADVANCE OF IMPORTANT LEGISLATIVE SESSIONS

The rural roadways of Minnesota and North Dakota are typically a second home for Stacey Dahl in an election year. The senior manager of external affairs dedicates those crucial fall months toward meeting with legislative candidates who may soon have the ability to shape Minnkota's future.

With the COVID-19 pandemic limiting in-person meetings, Dahl's windshield time was replaced with screen time in 2020. Dozens of virtual meetings were held with future policymakers in both states and on both sides of the aisle.

Brita Endrud, government affairs representative, meets virtually with Stacey Dahl (page 15), senior manager of external affairs.

"It's always nice to sit across the table from somebody and that's what we would prefer to do going forward, but there is a lot of travel time involved," Dahl said. "With a virtual meeting, we could connect with candidates in a pretty efficient way and still have a good, in-depth discussion. We're really fortunate that technology facilitates that interaction."

As the 2021 legislative sessions begin in January in Minnesota and North Dakota, virtual engagement will continue to be essential, as both states will utilize online formats for meetings and hearings. Addressing the effects of the COVID-19 pandemic and related budget shortfalls will be a focus throughout the sessions.

"Both states will be facilitating remote participation and that's going to be a significant change from how these legislative bodies have operated previously," Dahl said. "Minnesota has some experience in going remote partway through the session last year, but North Dakota has not been through this. It will certainly be an adjustment for most."

Political engagement is embedded in the history of electric cooperatives. It has often been said that electric cooperatives were born in politics and if they die, they will die in politics. Over the years, Minnkota and its members have partnered with other electric cooperatives around the region to develop an effective grassroots political outreach program to ensure member voices are heard on important energy issues.

"We're very sensitive to cost impacts from public policy," Dahl said. "I think the takeaway from these discussions is a better understanding of who we are and why the cooperative model continues to serve us in this region very well."

Promoting ECO Act in Minnesota

For Minnesota lawmakers, compromise will be the key strategy as their state has the only divided legislature in the country. The primary focus for electric cooperatives is encouraging passage of the Energy Conservation and Optimization (ECO) Act, which modernizes and reforms the state's outdated Conservation Improvement Program (CIP). The CIP program does not recognize the benefits of efficient electrification of end-use processes, such as the adoption of electric vehicles and other emerging technologies. Conversely, the ECO Act emphasizes end-use total energy efficiency rather than narrowly focusing on reducing electricity use.

"We've talked about CIP reform for a long time," Dahl said. "It's a program that is

"Both states will be facilitating remote participation and that's going to be a significant change from how these legislative bodies have operated previously. Minnesota has some experience in going remote partway through the session last year, but North Dakota has not been through this. It will certainly be an adjustment for most."

– Stacey Dahl, senior manager of external affairs

in real need of modernization. We've done a lot of grassroots work to build support and we'll make a strong push this session to get it passed."

Electric cooperatives will be closely monitoring potential legislation that would require 100% of a utility's generation portfolio to be carbon-free and other standards that would dictate that utilities must select carbon-free resources before any other resources. Any decisions regarding the energy transition must include electric cooperatives and take into account technological capabilities, reliability and affordability.

Other focuses include addressing Department of Labor and Industry (DOLI) rules that require utilities to file a permit and be subject to inspection each time they replace a load control receiver, even though co-ops were not required to do so in the past. Load management allows utilities to reduce demand for electricity during peak usage times, which reduces the cost for consumers and provides environmental benefits. These additional costs may put those programs at risk.

Supporting North Dakota's energy resources

Although the pandemic has created challenges in the near-term, the continued success of the lignite industry is vitally important to North Dakota because of its high-paying jobs, business activity and tax revenue. Besides the economic benefits, Minnkota and its members also receive affordable, reliable and increasingly clean electricity from lignite plants in the state.

Electric cooperatives will advocate for areas of state support, including policy changes and mechanisms to help control rising insurance costs.

"The cost of insurance has increased more than 30% in the last several years," Dahl said. "At that trajectory, it amounts to a significant cost back to our membership."

Continued support for the commercialization of carbon capture technology will also be pursued. Minnkota is currently evaluating Project Tundra – an effort to install carbon capture technology at the coal-based Milton R. Young Station near Center, N.D. If the project moves forward, it will be the largest carbon capture system on a power plant in the world.

"The state has played a crucial role in helping advance the research and development of carbon capture technologies," Dahl said. "We believe the state's support will continue to be important as these projects move toward commercial development."

By **Ben Fladhammer** / Photography **Michael Hoeft**

For the heat of the hunt

NATIONAL COCKER SPANIEL COMPETITION FINDS HOST HOME ON THE SHORE OF MINNKOTA'S NELSON LAKE

Claustrophobic fog hung over the warm water of Nelson Lake on Oct. 30, as the rising sun tried its best to break the gloom. But where the sun failed, other things cut through – the blaze orange of hunting hats, the crack of a shotgun and the focused fire of 16 English cocker spaniels.

One of the remaining competitors dashes toward the water to retrieve a pheasant. (Photography by Tangula Unruh)

These dogs were what remained of the 93 entrants of the 2020 National English Cocker Spaniel Field Championship, hosted this year by the North Dakota Sporting Spaniel Club (NDSSC) in Bismarck. The four-day competition brought dog owners and handlers from around the country, as far away as Florida, to compete in a series of hunting trials in field and water.

The fields were easy to find, but the water was more of a challenge. That's why organizers set their sights on the Milton R. Young Station.

"We had a great partner with Minnkota Power to give us that opportunity to showcase their facility here at Nelson Lake," said NDSSC treasurer and event co-chair Jon Hunke.

Hunke explained that the water series, in which each dog retrieves a pheasant simulated to be shot over the water, was planned to be held at nearby McDowell Dam. However, the never-frozen water of Nelson Lake was a saving grace when the temperature dropped faster than the pheasants.

"It's a pretty famous lake for its temperature," said NDSSC president and event co-chair John Alstad. "So knowing that we might have an early freeze up, just because it's North Dakota, it was great to have Minnkota help us out and be our safety net."

Situated at the foot of the Young Station, Nelson Lake is the state's only body of water that almost never freezes in winter. That's because the plant uses the water to cool its turbine before returning the warmed water safely into the lake.

"It is fantastic to see that Nelson Lake is not only an asset for Minnkota operations, but also for the city, county, state and private citizens and groups."

– Scott Hopfauf, plant environmental superintendent

One by one, competitors returned pheasants from the water of Nelson Lake. (Photography by Tangula Unruh)

Plant environmental superintendent Scott Hopfauf said he was surprised to get the call from Hunke requesting use of the lake for a national event, but he didn't hesitate to approve. The lake's recreation area has been used for many community efforts throughout the years, including N.D. National Guard boat training, Escape to the Lake water events for the N.D. Association for the Disabled, and as a N.D. Game and Fish Department fishery to stock other lakes in the state.

"It is fantastic to see that Nelson Lake is not only an asset for Minnkota operations, but also for the city, county, state and private citizens and groups," Hopfauf said.

Strong connection

One by one, the dogs and their handlers took their places on the east shore of the lake, waiting for the sound of the gun and the toss of the pheasant. At the command of the handler, the spaniels took off to the water, leaping in for a short dogpaddle to the bird and a quick return to the handler. Each dog was judged on patience, control and obedience.

One of those canine competitors was Frost from Cambria, Wis., brother to the dog that won the national championship in 2019.

"He looks at me like I look at ice cream," Frost's owner Kaye Wyn said with a giggle. "I love that about him. He really wants to work for me."

Wyn described the love and loyalty from a hunting dog that is key to competitive success. "It's really fun to watch them find game birds – for you," she said. "That's originally what you want for your bird dog, is you want them to find your food, and you want them to work with you as a team."

"It's all about the connection with the handler and the dog," Alstad said. "In the field, it's just like a ballet, how they move with the wind and with the whistle."

The owners and handlers want only the best for their companions, so when competition shifted from land to lake, participants were grateful for Nelson's unique warmth. "The water conditions were just better for the dogs. When the snow came in and it got cold this week, the ponds iced over," Wyn said. "This was the best possible answer, so it was wonderful."

Frost was one of 14 dogs to move on to the championship event later that day. As the hunting duos hopped into pickups and SUVs and rolled back out through the mist, organizers reflected on their co-op collaboration.

"To have these facilities here to produce power for, really, the United States … that's great to have. But to have a partner in this event, for wildlife, for stewardship, for community – that's why I reached out," Hunke said. "I understand the importance of cooperatives, I understand what their core values are. They're in the community to serve."

By **Kaylee Cusack** / Submitted photos

Kaye Wyn's Frost waits in the grass for one of several championship events. (Photography by Tangula Unruh)

Minnkota board approves 2021 budget

AVERAGE WHOLESALE RATES ARE PROJECTED TO REMAIN STABLE AS RATE STRUCTURE CHANGE IS IMPLEMENTED

The Minnkota board of directors voted to approve the 2021 capital and operating budgets during meetings this fall.

In addition to the budgets, the board implemented rate structure changes that aim to better reflect the true cost of providing safe and reliable electric service to the membership. The structure change, which will take effect in April, is revenue-neutral to Minnkota, meaning average wholesale rates are projected to remain stable throughout 2021.

"The board, staff and membership have worked together over the last two years to study our cost of service and how those costs are recovered in our rates," said Mac McLennan, Minnkota president and CEO. "As the industry continues to change at a rapid pace, we are now better positioned with a rate structure that sends more accurate pricing signals to our member cooperatives."

With the significant uncertainty surrounding the COVID-19 pandemic, Minnkota has budgeted for decreased energy sales to the member cooperatives and continued low prices for surplus energy in the wholesale market. Solid financial performance in recent years has helped the cooperative find stability in unstable times.

"So far, we have successfully navigated the economic issues related to COVID-19," McLennan explained. "But we may experience rate pressures if we don't see the demand for energy within the membership and in the market return to pre-pandemic levels."

Minnkota's revenue requirement in 2021 is budgeted at $389.1 million, which is $20.6 million lower than in the 2020 budget. Expenses are anticipated to be $393.3 million, which is down $9.1 million from the previous year's budget. Minnkota anticipates using $15.9 million in deferred revenue funds to meet its targeted margin levels.

The 2021 capital budget totals $39.1 million in projects, tools and equipment. About 62% of the budget will be invested in the power delivery system. Minnkota plans to rebuild decades-old distribution substations and transmission line, install technologies to reduce blink outages and add enhanced communication technologies at various sites throughout the system.

On the power production side, a seven-week outage is scheduled on Unit 1 of the Milton R. Young Station in fall 2021. Major projects will be completed during the outage to ensure the plant can continue operating safely and effectively.

"In these unprecedented times, we know our members are depending on us to provide reliable and cost-effective energy 24 hours a day," McLennan said. "We strive to find strategic ways to manage our costs, while still making prudent, long-term investments in our generation and transmission assets."

By **Ben Fladhammer** / Photo **Michael Hoeft**

Electrical contractor continuing education classes to be held online-only in January

Minnkota Power Cooperative and the associated systems will again provide an opportunity for area electricians to obtain credits for license renewal by attending one of seven continuing education classes.

As a precaution against the spread of COVID-19, the classes will be offered online-only this year. Attendees will be required to have a computer or tablet with a strong internet connection and a web camera that must stay on during the course.

The registration fee is $50 for eight code credits. Taking the class on multiple days will not qualify for 16 code credits. Registration can be done online at **www.minnkota.com**. Registration must be completed at least seven days prior to the seminar.

Eight-hour classes will be offered on Jan. 5, Jan. 6, Jan. 12, Jan. 13, Jan. 19, Jan. 20 and Jan. 26. Virtual registration will start at 7:15 a.m., and each course will begin at 8 a.m.

This marks the 33rd year of the successful program, which is aimed at providing area trade allies with the latest information on electrical code and practices. For more information about the program, call (701) 795-4292 or email questions to contractortraining@minnkota.com.

Class Dates

Tuesday, Jan. 5
Wednesday, Jan. 6
Tuesday, Jan. 12
Wednesday, Jan. 13
Tuesday, Jan. 19
Wednesday, Jan. 20
Tuesday, Jan. 26

Technology Requirements

- Computer or tablet with strong internet connection
- Download of GoTo Meeting software (free)
- Web camera is on at all times

Registration

- Online registration and payment at **Minnkota.com**
- Link to the course and materials will be provided via email following registration

Class Schedule

7:15 - 8 a.m. – Virtual sign-in
8 a.m. - noon – Workshop
Noon - 1 p.m. – Lunch break
1 - 5 p.m. – Workshop

New economic study shows impact of ND lignite industry

North Dakota's lignite industry continues to provide several economic benefits to the state through its high-paying jobs, business activity and tax revenue, says the North Dakota State University (NDSU) Department of Agribusiness and Applied Economics, which is completing an updated economics assessment of the lignite industry.

Dean Bangsund, an NDSU research scientist who is conducting the study, said North Dakota continues to realize significant economic benefits resulting from the $18 billion investment by regional mining companies and electric utilities. North Dakota benefits from five lignite mines, seven power plants, the Great Plains Synfuels Plant and approximately 250 contractor/supplier companies that provide goods and services to the mines and plants.

Another indication of the impact of the industry on North Dakota's economy is state tax revenue resulting from companies involved in lignite-related activities. In 2019, estimated tax revenues were $125 million. The lignite industry also included 3,623 direct employees working at the mines, generation plants and electricity firms in 2019, which is down from 3,883 in 2017. Those employees and lignite industry spending also support another 9,500 secondary jobs in the state such as those who work for contractors and suppliers, retail trade, wholesale trade, construction companies, personal service and banking. Wages for electric production workers in 2019 averaged $112,000 annually.

Minnkota Power
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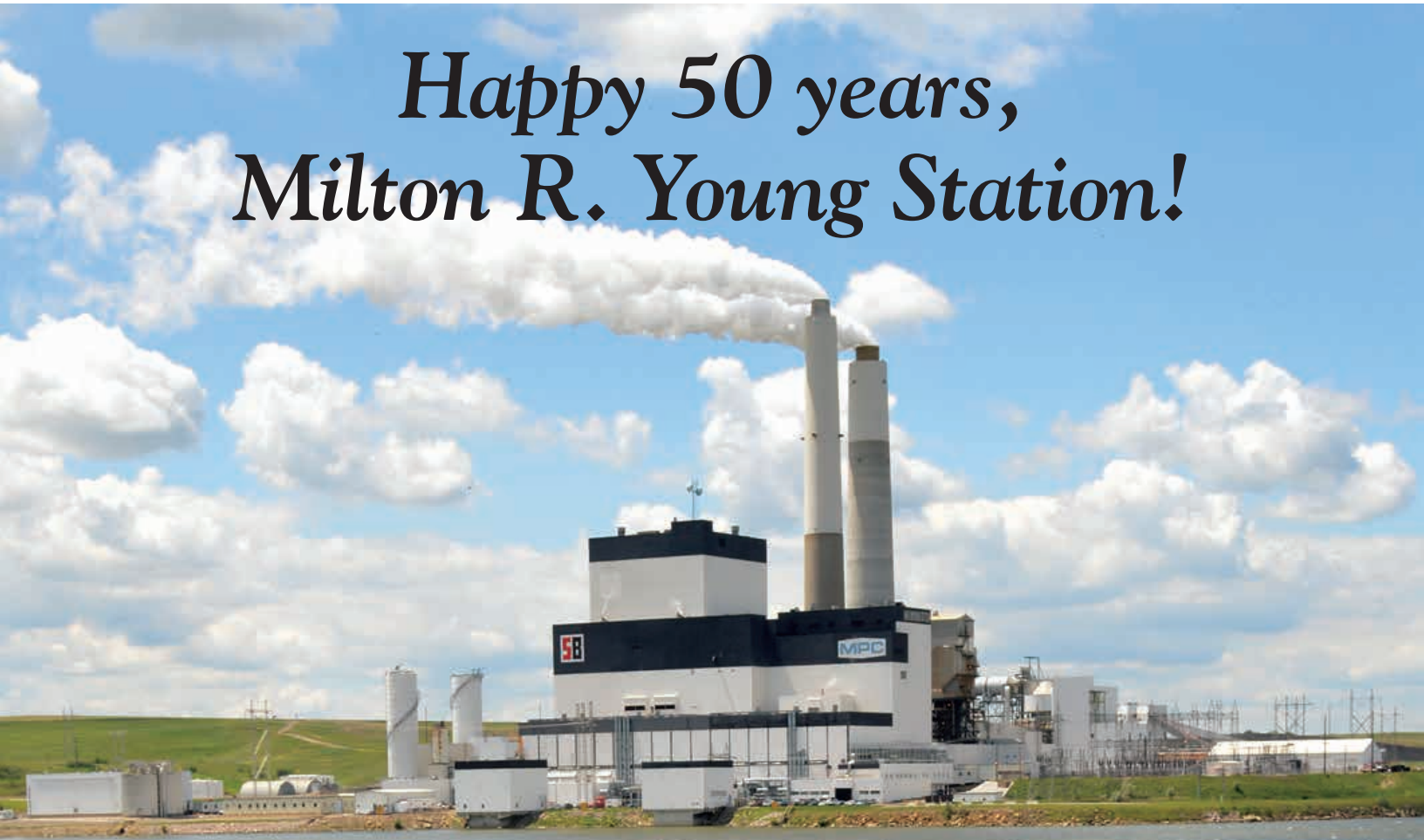
Happy 50 years, Milton R. Young Station!



On Nov. 20, 1970, Unit 1 of Minnkota's Milton R. Young Station generated electricity for the first time. The rest is history – and our focus for the future.

Congratulations to the Young Station team for 50 years of performance excellence.

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1970-2020